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IV. Human capital, technology and sectoral policies for growth

This chapter takes up some key regulatory issues concerning the network sectors as well as policy questions more directly linked to growth, including human capital formation and the arrangements for R&D and for university research. The first section examines reforms of the network sectors – telecommunications, electricity and gas and posts. In the context of growth, the sectors are playing different roles. Telecommunications prices and the availability of services has a direct connection via costs with the diffusion of information and communications technologies (ICT). Despite the hype of the late 1990s, the diffusion of ICT appears to have an effect on productivity and growth although the process is complex, and can involve productivity gains in traditional sectors. The linkage of the other network sectors to growth is less direct. Electricity prices are high by world standards so that a reduction in costs due to competition would be expected to raise the steady state level of real incomes so that the direct impact on the growth rate would be only temporary. The postal sector is important because of its control of a huge amount of savings. However, in other countries courier and fast mail services have been an important growth sector. The second section deals with human capital formation covering not only tertiary education but also skill formation more generally that has traditionally been provided by enterprise training. The third section covers the difficult and hard to define area of technology including how policy and institutions affect the way enterprises go about furthering their research and innovation capability. The incentive structure the universities face appears to be an important determinant of their behaviour, and recent policies to improve the productivity of these institutions are also reviewed.

Promoting competition and thereby lower prices in the network sectors

Progress in establishing competition in the network sectors has been mixed, with the greatest progress being in the telecommunications field. In other sectors, resistance from incumbents is proving to be intense and their lobbying activity effective. The government has maintained its policy of retaining the previous ministry in the role of regulator for the relevant sector, albeit with input from the FTC through the joint issue of guidelines.

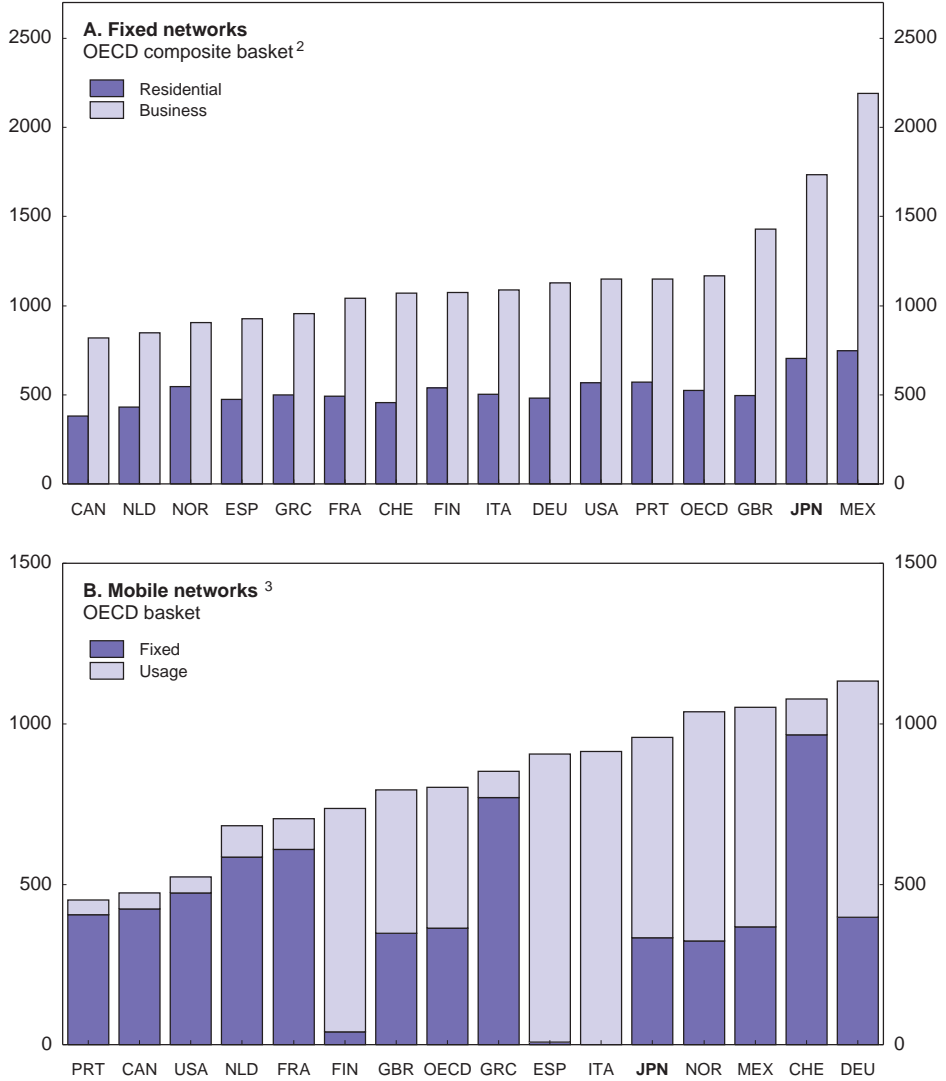
Telecommunications

In the fast changing telecommunications market it is important that the authorities continue to develop the regulatory framework in line with changing circumstances. Even though prices are generally tending downwards as in other countries, they remain relatively high in comparison with other countries, especially in some market niches (Figure 28).¹²⁴ Market dominance remains an issue to be resolved both in the less competitive basic services and in the newer, more competitive sectors where the issue is the potential by the incumbent for leveraging power from one market to another. Rapid progress is also important in view of the government's strategy to promote the use and diffusion of ICT as part of its overall policy for future growth, and several recent regulatory moves will benefit consumers by stimulating competition.

Last year's *Survey* noted that an important step forward had been taken with the new Telecommunications Business Law that established the principle of asymmetrical regulation based on market power and also addressed the issue of universal service obligations and dispute settlement. However, the *Survey* also noted that a great deal would depend on how the enabling regulations are formulated and implemented by the regulator, the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT). Clearly defined *ex ante* controls of anti-competitive behaviour needed strengthening, with particular emphasis on constraining the behaviour of the dominant incumbent.

In a welcome move, the regulator (MPHPT) and the FTC have now issued competition guidelines, which attempt to bring together telecommunications law and competition law in a comprehensive framework. However, this *ex post* synthesis reveals several weaknesses. First, since the telecommunications sector is still dominated by a powerful incumbent, adequate powers of investigation and enforcement are crucial. Enforcement must be credible through, for instance, the ability to exact heavy fines.¹²⁵ Moreover, for competitors it is essential that the dominant player be subject to restrictions on anti-competitive behaviour on an *ex ante* basis and not rely on injured parties to bring a case. In these areas both the FTC and the MPHPT operate with weak laws, and their weakness is compounded by their lack of specialised staff. Second, the new law and the associated regulatory system have been built around the essential facilities concept (*i.e.* the importance of bottlenecks), and they are consequently focused on the ownership of such facilities. It is therefore logical that the regulatory framework has emphasised access to buildings (colocation) and the determination of interconnection fees and conditions.¹²⁶ But the underlying issue is the potential for the abuse of dominance by the incumbent, including its subsidiaries and affiliates. Here the current law is, if anything, too explicit and its lack of clear guidance based on competition policy principles might at some stage undermine the enforceability of the associated guidelines. The latter recognise that problems arise from the possession of essential facilities and from "carriers that are

Figure 28. **Communications prices remain high¹**
August 2002, in US\$



1. Fixed and usage telephone charges.

2. Domestic and international services plus calls from fixed to mobile communication networks.

3. High mobile user charges.

Source: OECD.

assumed to have market power that comes from big market share and other factors". Observers have noted that the authorities do not possess a clear methodology for determining the relevant market for telecommunications services and for assessing market power – other than the ownership of facilities. A new law is under preparation which is intended to address some of these issues.

A crucial feature of the current NTT law is the possibility for the two NTT regional companies, NTT East and NTT West to expand into new competitive areas of business even though they are regarded as dominant carriers enjoying considerable market power in their primary market. The scope of operations can be widened on condition that this does not detract from their usual business (especially the provision of universal service) and that fair competition is ensured through, for instance, firewalls (2001, *Survey*, p. 131). The enacted law thus moved away from the original intention of only allowing the NTT group into new activities in return for first establishing effective competition in its major markets where contestability is weak. The implementing regulations include a criterion – “the maintenance of competition” – which appears to assume that there is already a satisfactory level of competition. The regulations and the practice to date also appear to switch the onus of proof to the regulator who must argue why NTT should not be allowed into new activities rather than shifting the burden of proof to the company. It will be important to assess the situation not only one market at a time but to consider that power in one level of the overall market will often confer power in other sectors. An example of what may be involved concerns the advantages the incumbent enjoys from its customer data base. To encourage further competition in high speed net access, NTT will be required to let new entrants use its customer information relating to connection requirements.

In the absence of measures to change the structure of the NTT group by, for example, breaking it up into competing entities, a great deal of emphasis has been placed on firewalls with little actual physical separation. Last year's *Survey* was sceptical that such procedures would be strong enough to prevent cross fertilisation, information sharing, joint marketing and bundling in view of the commercial pressures at work.¹²⁷ Indeed, in summer 2001 the MPHPT was forced to issue administrative guidance three times over unfair marketing practices associated with carrier pre-selection. If firewalls are less than secure, regulatory oversight of *ex ante* rules becomes even more important. The fact that NTT was forced to enter the DSL market and to undercut its existing market in leased lines and ISDN (integrated services digital network) should be seen as a regulatory success. Policies designed to open the local loop to competition (unbundling and line sharing) enabled other companies that provide broadband services to enter forcing NTT to react. Although the incumbent has now achieved a 40 per cent market share, this is low compared which incumbents in other OECD countries. In such a situation, it will remain important to make sure that NTT does not leverage its power in other markets to gain an advantage in this competitive segment at some stage.

The introduction of a fund to ensure universal service remains on the agenda but needs to be considered carefully. In a market where the majority of the population owns a mobile phone, the case for subsidising fixed line services even in out of the way places needs to be considered by reference to both the costs and benefits involved. In the United Kingdom, for example, it was found that the benefits to the incumbent from being a universal service provider outweighed the costs of being designated to maintain these services.

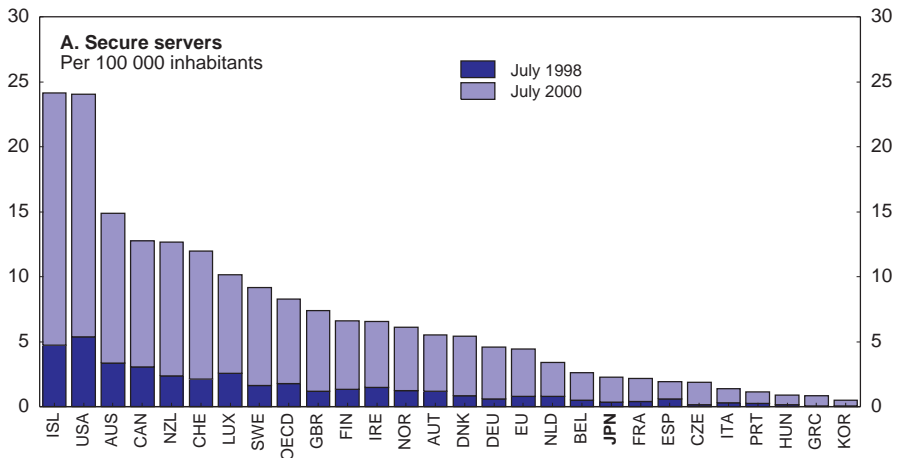
The Telecommunications Dispute Settlement Commission set up in November 2001 has examined 24 complaints in its first eight months of operation, mostly dealing with colocation and therefore interconnection disputes. The scope of the Commission is limited to contractual matters. It has power to ask for information, and can also recommend to the Minister of MPHPT to force a response. However, it has no power of subpoena and cannot look at anti-competitive behaviour as such, which is the role of the regulator.

A major problem in the past has been access to rights of way such as to ducts and poles, which constitute in many instances essential facilities. The competition guideline now classifies them as such, which is an advance over past practice. Moreover, the MPHPT has also insisted that an electricity company, which has entered the telecommunications field, make its poles available at a cheap price to competitors.¹²⁸ However, the pricing methodology for other rights of way appears to be unclear. As in other aspects of enforcement, it appears that a complaint must be brought for unfair restriction of access rather than access being an obligation in the law with exceptions to be ruled after a dispute. Rights of way will, however, become less of a problem if the government proceeds with its plans to widen access by private companies to the government network, including those at local level. This should be confirmed in the next amendment to the business law to be submitted in 2003.

Promoting the effective diffusion and use of ICT

By some measures such as numbers of secure servers and PC intensity per hundred inhabitants Japan lags behind other countries in ICT use (Figure 29). As regards the change in PC intensity, a measure used in the *Growth Project*, Japan is in the bottom group of countries in the OECD area. Indicators more oriented to business use are also poor: the ratio of regular employees per personal computer is five to one and about 80 per cent of firms reported problems in implementing IT investment.¹²⁹ In other areas there has been considerable progress. In the last six months, broadband connections have been increasing by 300 000 per month driven by intense competition by a new entrant, which offers access costs of only 20 dollars per month, the least expensive rate in the OECD. This is in no small way due to MPHPT forcing NTT to give access to its local loops at low prices. There is also a very high penetration of cell phones that have full time, constant mobile access to the

Figure 29. The use of secure servers is lagging



Source: OECD, *Science, Technology and Industry Scoreboard*, 2001 and OECD, *Communications Outlook 2001*.

Internet. Convenience stores have also become focal points for B2C e-commerce, serving as payment and distribution centres, as well as Internet access points through multi-media terminals. This has led at least one observer to conclude that a significant, though unique, electronic infrastructure is coming into place.¹³⁰

The barriers to ICT diffusion have been identified by the *Growth Project* (Box 9) and are also applicable to Japan. Communications costs have been high through the 1990s – and remain relatively high in some niches – (Figure 30)¹³¹ but internet costs have come down rapidly during the past year. There are also a number of barriers which appear to be specific to Japan and that are being examined by the inter-ministerial IT Strategic Headquarters. There appears to be a problem with keyboard literacy, though this might be related to the higher age of many executives compared with other countries. Many firms also report difficulties in acquiring computer literate staff (NLI, *op. cit.*). The lack of trained staff might well prove temporary until students graduate in larger numbers. But given the structure of wages paid in Japanese firms that favour seniority, starting wages in these highly skilled areas might be too low to encourage a major increase in supply.¹³²

The government believes that ICT use will be a major force driving future growth and socio-economic developments and to this end has announced a national broadband initiative. The programme sets a goal to promote the deployment of high speed/ultra high speed Internet infrastructure to cover some

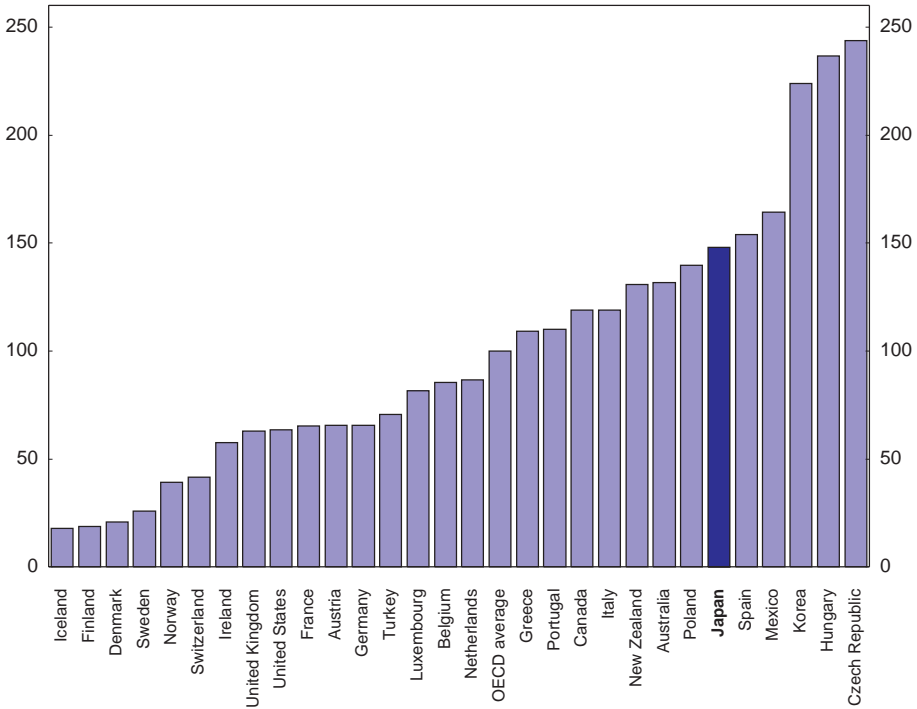
Box 9. Which factors aid diffusion and effective use of ICT: lessons from the Growth Project

With technological advances in ICT available universally, the degree of uptake and use of ICT appears to depend on structural factors. Recent work by OECD (see Colecchia and Schreyer) points to differences in flexibility of product and labour markets and the business environment as explanatory factors behind differences in the uptake and diffusion of new technologies among some OECD countries. Widespread diffusion of ICT as well as the development of the ICT producing industry are closely linked to a tradition of open and competitive markets for telecommunication services as well as the liberalisation of other product markets. Countries that moved early to liberalise their telecommunications industry now have much lower communications costs and, consequently, a wider usage and diffusion of ICT technologies than those that followed later on. OECD finds that firms in the United States and Canada have enjoyed considerably lower costs of ICT investment goods in the 1990s than firms in European countries and in Japan. Barriers to trade, in particular non-tariff barriers related to standards, import licensing and government procurement, may partly explain cost differentials. Higher price levels in other OECD countries may also be associated with a lack of competition within countries. For example, Nicoletti *et al.* (1999) find that countries with a high relative price level of ICT investment tend to have a lower degree of competition, as measured by indicators of economic regulation. Over time, however, international trade and competition should erode some of these cross-country differences.

Evidence from Finland and Australia, admittedly partial, suggests that micro-economic reforms have helped ICT adoption, and that ICT diffusion is interacting with organisational and innovation factors in generating a positive impact on productivity. Contrary to Finland, the ICT producing industry plays a negligible role in Australia yet there is a direct and significant impact of ICT on Australian output growth. One explanation of this large impact is again in the complementarity between microeconomic reforms and ICT. Regulatory reforms and open market policies brought about rationalisation and restructuring of business processes, and ICT is thought to have been instrumental in this process. A similar pattern can also be seen in the United States where productivity gains in the competitive retailing sector were due in good measure to the adoption and use of ICT by Walmart (McKinsey, 2001).

Source: A. Colecchia and P. Schreyer "ICT investment and economic growth in the 1990's: Is the United States a unique case? A comparative study of nine OECD countries", STI Working Papers, 2001/7.
McKinsey, *US Productivity Growth 1995-2000: Understanding the Contribution of Information Technology Relative to Other Factors*, McKinsey Global Institute, Washington, 2001.

Figure 30. **The cost of leased telephone lines for business¹**
August 2000, OECD = 100



1. Total charges (excluding taxes) within each country for a basket of national leased lines that can carry two megabytes of information per second.

Source: *OECD Communications Outlook 2001*.

40 million households by FY 2005. If achieved, this could make Japan “the most advanced IT nation in the world”. Part of the programme simply involves projections about what the private sector is expected to attain by way of the extension of fibre optic networks, the development of DSL, the prices they will likely charge, and the response of households. Corresponding to changes in the telecommunications market, the Telecommunications Council has proposed to scrap the difference between those with and without their own networks (*i.e.* type I and type II business categories) and to deregulate market entry, moving from the present permission system to a simple registration/notification procedure. This move will also support the government’s ICT programme. Internet firms could also expand to

telecommunications. Under the proposed amendments, the MPHPT will also supervise carriers affiliated with power companies, which are not subject to the telecommunications law at present. Another crucial part of the programme foresees public investment in network infrastructure to cover those regions and activities not covered by the private sector, and some cases where public money will support the private sector. One of the most important components of the programme is the introduction of e-government by FY 2003 with extensive public local area networks (LAN) connecting public institutions including schools. Local governments are to develop their plans with the central government setting standards and providing finance. The task is huge: there are for example 36 000 forms currently in use. The government will thus have to learn the lesson from the private sector that the ways of doing things will also have to change and to be simplified.

It is too early to assess this potentially ambitious programme since many details are not yet known. For example, it remains to be seen how public funds will support certain activities by private competing firms; how government networks will be developed and integrated with the infrastructure more generally; and indeed, how private competition will in fact develop. The government should serve to help set standards and remove regulatory barriers as it did with the rapid development and dissemination of the Fax (Porter *et al.*). What needs to be avoided is any temptation to trade-off the development of a vibrant competitive telecommunications sector in favour of one which would be amenable to meeting the government's programme targets for extension of connections to less favourable areas.

Electricity and gas

Progress in liberalising the electricity sector has been delayed, despite high electricity prices, because the reform process is relying for advice on an unwieldy panel that includes a variety of interest groups. These companies are reluctant to consider the separation of their generation and transmission activities. Selling to large customers, accounting for 26 per cent of the market, has been liberalised since March 2000. However, the system remains a virtual monopoly with new players only accounting for 0.4 per cent of the total market. New players must pay high transmission fees to each grid crossed, which has been an important barrier to establishing a nation-wide market. Moreover, there are also back-up fees to ensure supply by major generators when there are power shortages. This assurance would be provided better by time-of-use tariffs, as these would allow the more efficient use of power at periods when it is in short supply.¹³³ High transmission fees and low market share for the newcomers has not prevented the existing companies from taking action to raise barriers to entry. Such behaviour has led the FTC to become more active in cases involving

newcomers. Three such cases have been examined since last November, which led to incumbents changing their actions. The government foresees reform proposals being finalised by the end of this year so as to prepare legislation for 2003. However, the Electricity Industry Committee, although having agreed on a phased liberalisation of the retail market, has yet to reach a consensus. Issues that need to be considered according to the government's initial planning include the precise form of a power exchange and how to ensure non-discrimination by the integrated owners of the transmission grid. In addition, as the *Regulatory Reform Review of Japan* recommended in 1999, terms and conditions of access to transmission and distribution networks and provision of ancillary services should be regulated, with prices reflecting the underlying costs; the networks and the (potentially) competitive activities such as generation should be separated; and the regulation of the sector should be independent from policy-making functions and electricity promotion functions, with transparent decisions and due process for the review of decisions.

Gas liberalisation is tied to the progress in the electricity sector, since natural gas is both an input into and, in part, a competitor to electricity. It is more difficult for gas companies to enter electricity markets than vice-versa. The gas sector is more fragmented with more than 200 companies. More than two thirds of imported gas is brought in by the electricity companies. Most of the remaining one third is imported by the few general gas companies that have facilities for receiving and storing liquefied natural gas. Thus access to regasification facilities and transmission are important for the development of competition in this sector.

Postal services and reform of the post office

Laws covering reform of the businesses run by the post office and the corporatisation of the entity (saving, life insurance and postal services) were passed by the Diet in July, and allow competitors to enter new areas of delivery services in competition with the postal agency. These bills illustrate the difficulties facing the Koizumi government and the complex issues involved. The Prime Minister viewed the bills as setting the framework for limiting the scope for what the public sector should do, a key element of the government's overall strategy, and for preparing the way ultimately for privatisation. Facing opposition, the government sent the bills to the Diet without prior approval from the ruling LDP which then negotiated changes during passage. Under the bills only businesses with approval from the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) will be allowed to deliver postal mail. To win approval, companies will have to provide uniform services nation-wide (uniform price and 100 000 mailboxes everywhere), including small out of the way places. Entry requirements thus appear to be restrictive. As with some other utilities they would also have to submit their business plans to the MPHPT for

approval. A key issue is how mail is to be defined. Initial statements from the MPHPT indicate that credit card deliveries and some direct mail such as catalogues will continue to be regarded not as post and so can be handled as at present by private delivery firms. Express mail delivery has also been opened to competition but the conditions concerning minimum prices and maximum time for delivery will limit the size of the market.¹³⁴

As the postal corporation will be a dominant player with substantial monopoly powers, there is a danger that it will distort competition in the liberalised sectors and engage in cross subsidisation. This has already happened in Europe and in the telecommunications sector in Japan. The threat is even greater in view of the generous financial treatment of the new corporation. While in principle it will be required to pay the equivalent of a corporate tax, this is due only every four years and will be waived if it will harm the financial stability of the corporation. A reason for restricting market opening in the mail sector and in opposing reforms of the postal savings bank is the concern of the authorities to finance universal service obligations. However, financing such obligations through cross subsidisation and market closure is highly inefficient. In the telecommunications sector, universal service obligations will be financed in a transparent manner by all operators. But in this sector there is at least some connection between the existence of the fixed network and the operations of new comers. This is not true in postal services while in postal saving there is nothing to prevent direct contractual relations with private banks. Universal service obligations should therefore be paid directly by the government but only after first assessing the relevant costs and benefits and putting incentive structures in place to ensure efficient provision of such services. In sum, although the limited opening of some market segments is welcome, the Diet has at the same time created an effective monopolist (which also offers banking and insurance products) with potential to distort competition. In these circumstances, plans for privatisation are premature until a clear, independent, regulatory framework including asymmetric regulation is established to ensure that competition develops in a fair and non-discriminatory way.

The banking and insurance sections of the post will be fully integrated in the new corporation and not handled separately as recommended in last year's *Survey*. In addition to the preferential rules regarding taxation of the corporation, the banking side may also benefit from not having to pay the equivalent of deposit insurance premiums. The post office is currently negotiating with the government on this, although it is hoped that broader considerations regarding competition in the financial sector will prevail.

Transport infrastructure

Regulatory inefficiency is apparent in both the operation of airports and harbours with Japan having the highest charges in the world. These constitute a

major burden on the economy and act to limit trade. This has remained the case despite evidence that earlier deregulation in road transport and in domestic aviation has had a positive effect on productivity.¹³⁵

The regulatory deficiency in running airports has been compounded by the enormous cost of building facilities due in part to weak enforcement of land acquisition laws and high construction costs. Rather than improving, the situation could deteriorate due to the inflexible slot allocation system run under the auspices of the Ministry of Land, Infrastructure and Transport. In essence, Tokyo has only one international airport, Narita, where slots are in excess demand. Yet with the completion of a new short runway the two strips are being treated as if they were two non-competing airports by allocating slots for each runway. An agreement with local communities limits options, but by not using the limited possibilities that are available to encourage small aircraft to stop using the main airstrip, the capacity for the larger aircraft remains limited raising scarcity rents.¹³⁶ Problems are also being created in the future when the small strip is lengthened since current operators (of small aircraft) will have grandfather rights. In sum, the regulatory system does not promote economic efficiency. The problem might be compounded in the context of privatisation of public corporations (Chapter II). One proposal is that the terminal operators will be fully privatised eventually, but a public corporation will oversee land development for the three major airports and cover existing debt, which will be serviced from rental income. In this case charges will remain high at Narita to help pay for the 1 trillion yen in debt already owed by the loss making airport at Kansai.

Maintaining a high level of human capital

Although the Japanese system of education, employment and training has contributed to dynamic growth in the past, the increasing importance of knowledge and the associated change in technology and business organisation including employment practices are challenging the traditional methods of human capital formation.

The traditional system of human capital formation has been successful up till now...

The Japanese educational system has been successful in a number of areas even though at the tertiary level it often plays mainly a screening role.¹³⁷ School under-achievement has been reduced, and the average educational attainment has been raised. In the post-compulsory tertiary system, the estimated returns to education have been reasonably positive, which suggests that students and parents have received the appropriate signals to carry out what is sometimes a large investment in education.¹³⁸ Nevertheless, the actual role of tertiary education *per se*, other than screening, is rather limited as firms play a large part in human capital formation after recruitment. This has significantly weakened the

incentive for universities to improve the quality of education. The proportion of post-graduate students at universities is also relatively low compared with some other OECD countries.¹³⁹

A key feature of human capital formation in Japan is that firms have a strong commitment to job training, which is often accompanied by frequent job rotation within firms. The life long employment system, together with a progressive wage profile based on seniority, penalises quits and effectively guarantees firms a return to their investment in the human capital of their employees. This system has contributed to the strong competitiveness of the manufacturing sector, where skill and knowledge accumulation by workers has played an important role in raising product quality and in promoting process innovation. Smaller firms especially in manufacturing also carry out job training, sometimes in co-operation with larger enterprises they supply. Traditionally, the government has supported the system by paying training subsidies to firms (only for off-the-job training), grants to individuals being very limited. This reflects the institutional arrangement that many of those subsidies are funded by the employment insurance schemes where funds for training subsidies are provided only by employers, rather than by employees. A downside of the system is that since human capital accumulated within firms is mainly related to firm-specific skills, such human capital can depreciate significantly once workers leave the enterprise.

... but pressures for change are rising

Firms have reduced their job training during the 1990s. While it remains to be seen how far this is a temporary reaction to cyclical factors, changing attitudes are already evident. According to a survey conducted by the Ministry of Labour, the proportion of firms which conducted particular training for their employees fell from 86 per cent in 1993 to 61 per cent in 1997 as firms intensified restructuring efforts.¹⁴⁰ Although 76 per cent of firms answered that they should be responsible for human capital formation of their employees, an increasing number of firms thought that individual employees should be more responsible for their own human capital formation in the future (the Japan Institute of Labour). Some experts have expressed concerns about the possible erosion of human capital in restructured firms, which could result in lower competitiveness of those firms in the long run. This concern could be exaggerated since there are many other forces currently at work.

The forces driving these changing attitudes include a much greater sensitivity to overall labour costs, an increased need on the part of firms to react quickly and changing demands for skills. Costs and flexibility considerations have led to an increase in non-regular forms of employment such as part-time work and temporary workers from agencies (known as dispatched workers in Japan). Since workers on part-time or temporary contracts tend to receive relatively little

training, the increase in the numbers of those workers could raise efficiency concerns, unless their temporary status is only a transition period to a more usual work contract. However, temporary workers are not necessarily unskilled workers – just workers trained elsewhere and possibly on their own account. Greater mobility of workers and increased demand for ICT skills have also led to fears that company training might be reduced, but they appear to be misplaced.

The fear often expressed in Japan is that the diffusion of ICT will lead to reduced job tenure and to weaker incentives for firms to invest in human capital. Such a fear appears to be misplaced since the incentives for individuals to seek their own training have also risen. However, micro data suggests that the diffusion of ICT is not necessarily associated with reduced tenure/greater mobility across all categories of jobs. An OECD study has found that tenure for skilled workers has tended to increase in many OECD countries, while tenure for unskilled workers has tended to decrease.¹⁴¹ Regarding the impact on incentives for training, many studies including Arnal *et al.* (2001) and CAO (2002) find that the incidence of training is higher in firms that have adopted new work practices suggesting that it facilitates the process.

Firms have shifted their method of acquiring human capital from on-the-job training to off-the-job training as the increased importance of new technologies requires higher skills and knowledge which cannot be provided efficiently by the firm itself.¹⁴² This trend is reinforced by the shift of the economy from manufacturing to the service sector, where the incidence of off-the-job training is much more important. Many firms think that professional graduate schools should play a bigger role in providing opportunities for training (METI, 2001). At the same time, the attitude of employees towards job training has begun to change as they feel more insecure about their jobs. The incentive for employees to invest in their own human capital outside of their employment has risen as they wish to obtain professional skills in order to increase their employability. However, the opportunities for vocational education are limited as universities and graduate schools provide few short programmes designed for employees. Many workers who want to take training courses outside their firms also claim that they are very costly.¹⁴³

Policy needs to strengthen the post-compulsory education system

Although the role of tertiary education was limited in the traditional system of human capital formation, the increased importance of specialised knowledge and skills for the economy both now and in the future requires universities to play a bigger role, including greater emphasis on post-graduate work. There are several implications. Universities will need to strengthen their research capabilities and to improve the quality of their education. Moreover, the diffusion of knowledge and skills accumulated in universities needs to be promoted by improving the knowledge transmission mechanism between universities and

businesses. Since universities are subsidised by the government regardless of their performance, they are lacking the incentive (at least the state-run universities) to compete with each other to improve research and education. Lack of flexibility in management of personnel and the design of courses, which partly reflects restrictive regulations, also undermines the capacity of universities to adapt to the changes in technology and in the demand for education.

Responding to the need to rectify these weaknesses, the government has begun to promote reform of the state-run universities since the end of the 1990s (Table 28). The most important concept underlying the reform is to introduce competition between state universities. The government plans to select around ten to twenty “Centres of Excellence” in 10 major subjects based on a performance assessment by a third party, and to allocate more funds to them so as to provide a strong incentive to improve the quality of their research. Competition among universities for students should also be enhanced by the planned transformation of national universities into independent agencies in 2004, which will allow them more flexible management and greater autonomy. Another step forward has been the establishment of professional business schools. Since the easing of restrictions in 1999 covering the nature of education to be offered, six new professional

Table 28. **The reform of higher education**

Reform of Universities (National Universities)

- Reorganisation and merger of national universities
- Corporatisation of national universities
 - Introduction of management skills from the private sector
 - Participation of outside professionals in management
 - Flexible personnel management through limitation on tenure and open recruitment
- Introduction of Centres of Excellence (COE)
 - Assessment of performance of COE by third party
 - Promotion of competition through fund allocation based on the assessment

Establishment of professional graduate schools

- Since 1999, the establishment of professional graduate schools which are specialised in two-year master courses has been allowed
- Establishment of one year master course is also being considered

Easing the restrictions on establishment of universities (planned)

- Procedures for authority's approval for changes in departments and courses are to be eased further
- Regulations which require universities to have open land space are to be eased

Promotion of technology transfer through Technology Licensing Organisation (TLO)

- In 1998, TLO have been established by the law
- Researchers in national universities have been allowed to work for private companies and to become business partners

Source: Cabinet Office.

graduate schools have been set up and they have started providing courses such as business management, finance and accounting, and public health. In line with reforms of the legal profession, there are plans for law schools to be founded.

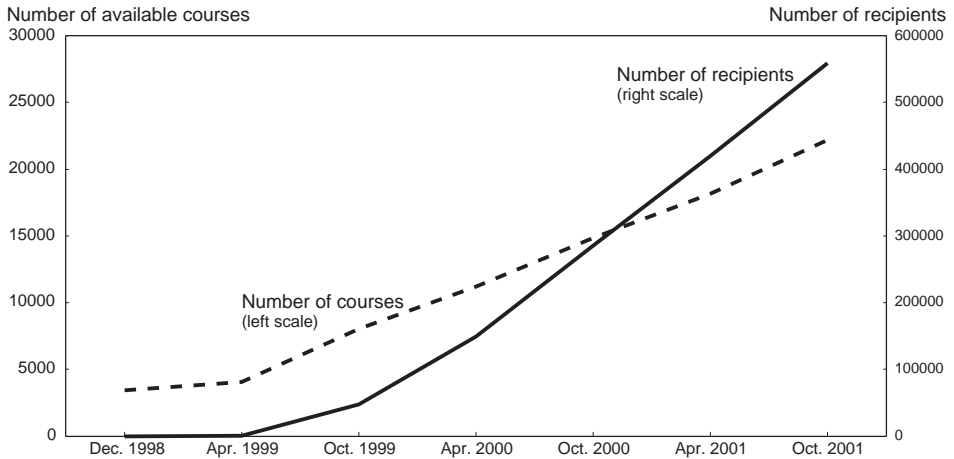
Demand for vocational education is also increasing as both firms and individuals are more willing to acquire specialised skills and knowledge which can be utilised in the private sector. However, the remaining restrictive regulations still discourage the establishment of new schools and professional institutions as well as the provision of short courses for post-graduates. Above all, new educational institutions in the urban areas have been prevented by the requirement that they maintain open land equivalent to at least 300 per cent of the space occupied by their buildings. In addition, more than a half of the land has to be owned by the schools themselves. Establishing new schools or new courses also requires that numerous other conditions set by the authorities be met, and approval has to be obtained from government councils.

While improving individual training outside the firm

Policy should facilitate greater provision of training outside firms to meet the increasing demand. Although there is evidence for the OECD area of externalities arising from human capital formation, the benefits accruing from vocational training mainly belong to firms and individuals. Policy measures should therefore focus on creating a more supportive environment for employers and employees to invest in training, rather than directly intervening in the market. In this sense, a key priority should be given to removing constraints on the provision of training and to limiting the distortion from public intervention in the market. In particular, it is crucial to take further steps to ease restrictions on the establishment of new institutions in the urban area to facilitate vocational training and professional education for adults. At the same time, the scope of training courses provided by public institutions needs to be limited to those for less-favoured groups who have little chance for training in the market. Public training programmes should also be accompanied by an *ex post* assessment of performance in order to reduce dead-weight loss and to improve efficiency. Minimally interventionist measures also include information dissemination about training programmes and provision of certification that facilitates the recognition of skills acquired through training. In this area, the government has actively expanded its scheme for providing certifications, which covers a variety of skills for both white and blue collar workers.

Policy has begun to switch its focus from enterprise subsidies to direct payments to individuals. The education and training benefits system was introduced in 1998 to provide direct support to individuals who pay or have paid contributions to the employment insurance scheme. The benefit covers 80 per cent of training costs with a ceiling of 300 000 yen. From April 1999 to October 2001, 558 719 people received subsidies while 22 183 training courses

Figure 31. **Subsidies encourage participation in training**
 Recipients of education and training benefits



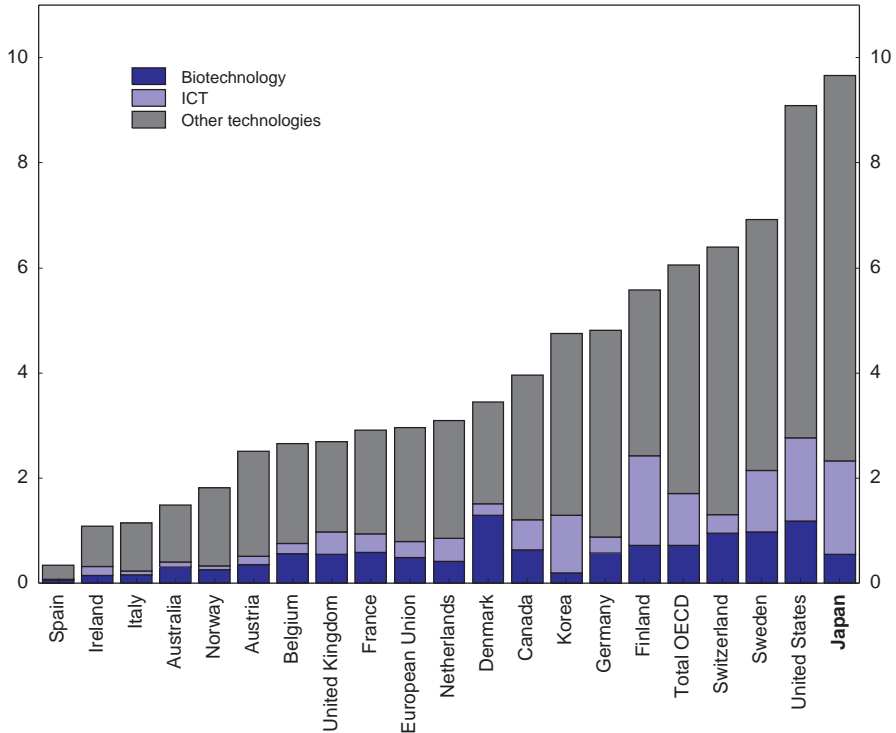
Source: Ministry of Health, Labour and Welfare.

were designated by the authorities for this scheme (Figure 31). This figure shows that the subsidy has successfully stimulated the demand by individuals for vocational training. However, as noted above, it remains to be seen whether it is cost-effective and some drawbacks to the overall policy stance are apparent.¹⁴⁴ Since most public training programmes are free, the relationship between private and public training schemes might be distorted. Another problem is that the subsidy is limited to those who are members of, or who join, the employment insurance scheme; people outside the employment insurance such as jobless new graduates are not eligible. Even though these people can participate in public training schemes for free, their opportunities for joining private training schemes could be limited. If a subsidy is justified on externality grounds, then it should apply to all. To avoid these problems, it is desirable to expand the scope of the scheme or to introduce vouchers to cover a broader range of individuals and to allow more options for private training schemes.

Enhancing productivity through strengthening technology and innovation

In terms of R&D expenditures, patents issued¹⁴⁵ and the number of market-leading firms in the world, Japan is one of the key technological powers in the OECD (Figure 32). R&D is mainly financed by business (around 70 per cent) so

Figure 32. **Japan has a high level of patent activity¹**
Per unit of GDP in PPP's, 1999



1. Patents granted at the US Patent and Trademark Office, by country of inventor.
Source: OECD-DSTI.

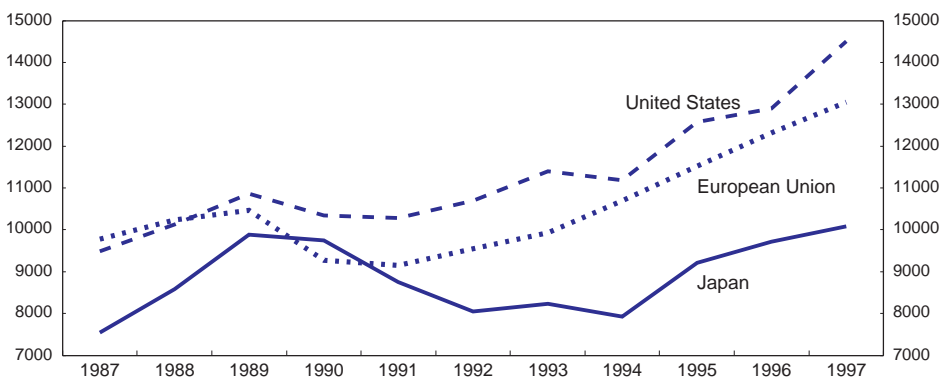
that it has been focused and applied. The government is also a significant player both directly through funding research as well as through its role in running 99 universities and a number of National Research Institutes (NRI). In FY 2000, budget expenditures amounted to 3½ trillion yen and the plans are for 24 trillion to be spent over the next five years in four sectors: IT, environment, biotechnology and nanotechnology. Although joint research programmes and government co-ordination may not have been as effective as was at first believed,¹⁴⁶ the overall system has been very effective with the *Growth Project* results pointing to a large contribution of R&D to productivity and growth. However, the lack of adequate market fundamentals might have lowered the actual impact on growth outcomes.

There are nevertheless concerns that the development and application of new technology by enterprises, and the returns to public funds invested in research capabilities, might be falling behind international developments. And evidence is not hard to find. Real R&D spending, although high as a share of GDP, has been stagnant through the 1990s and the number of patents, which is only a very crude indicator of innovation, has fallen relative to those in other countries (Figure 33). Japan also appears to lag in harnessing science to the development of ideas which can be patented (Figure 34) and, at a time of greater international collaboration, it appears to be insular. Japan has the smallest percentage of scientific publications with a foreign author and the lowest percentage of patents with foreign co-inventors. These indicators are not only a product of country size. Even after allowing for size and R&D intensity, one study still found that Japan remained insulated at a time of increased internationalisation of research.¹⁴⁷ The question is whether these are only private sector issues and amenable to policy or not—or whether they are mainly related to universities and NRI and can be handled by policy measures.

Private sector R&D activity

By around the end of the 1980s Japanese firms appeared to be well over the period of catch-up and a number have now moved to be active innovators.

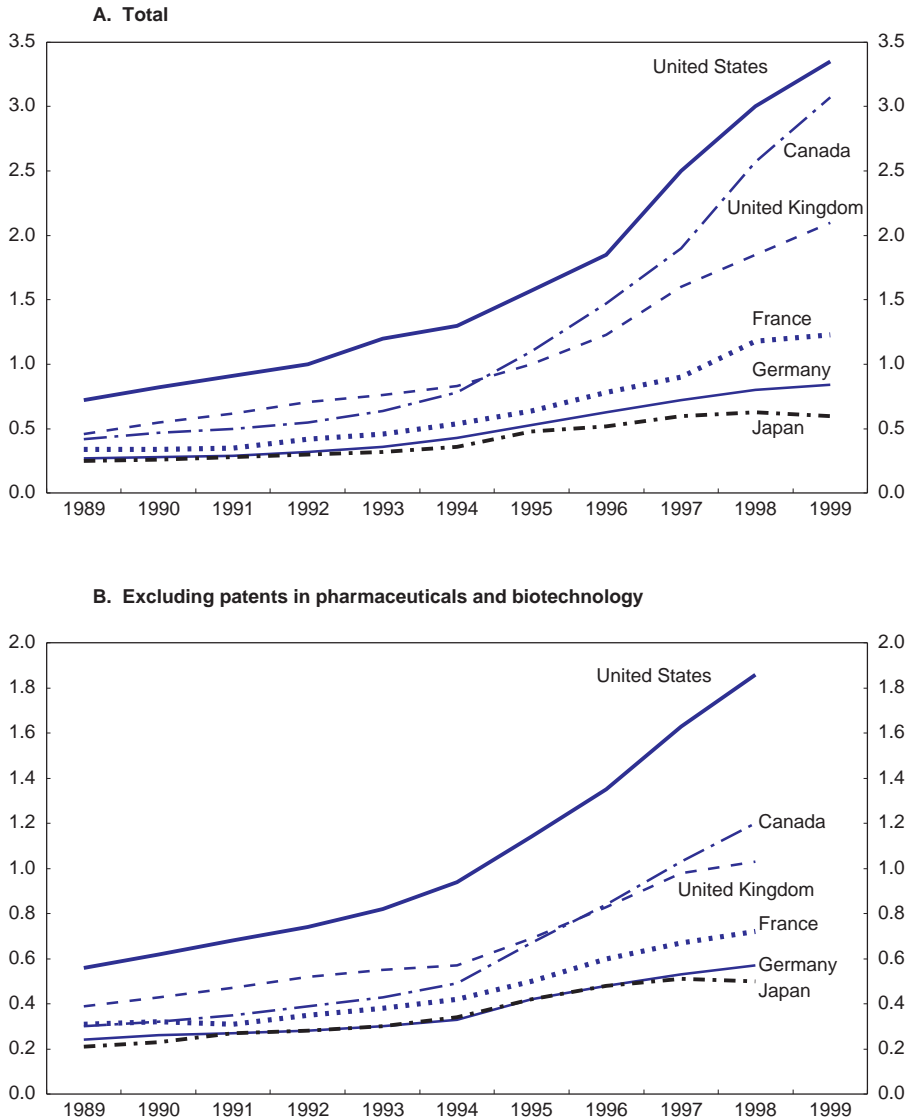
Figure 33. **Japan's relative importance in world patents has declined**
Number of triadic patents¹



1. Patent applications to the European Patent Office (EPO), and the Japanese Patent Office (JPO). Patents granted by the US Patent and Trademark Office (USPTO). The number of patents by residents in one country which were also taken out in the other two regions. Double counting has been eliminated.

Source: OECD, Patent database, June 2002.

Figure 34. **Japan lags in linking science with patents**
Average number of scientific papers cited in US-issued patents



Source: CHI Research.

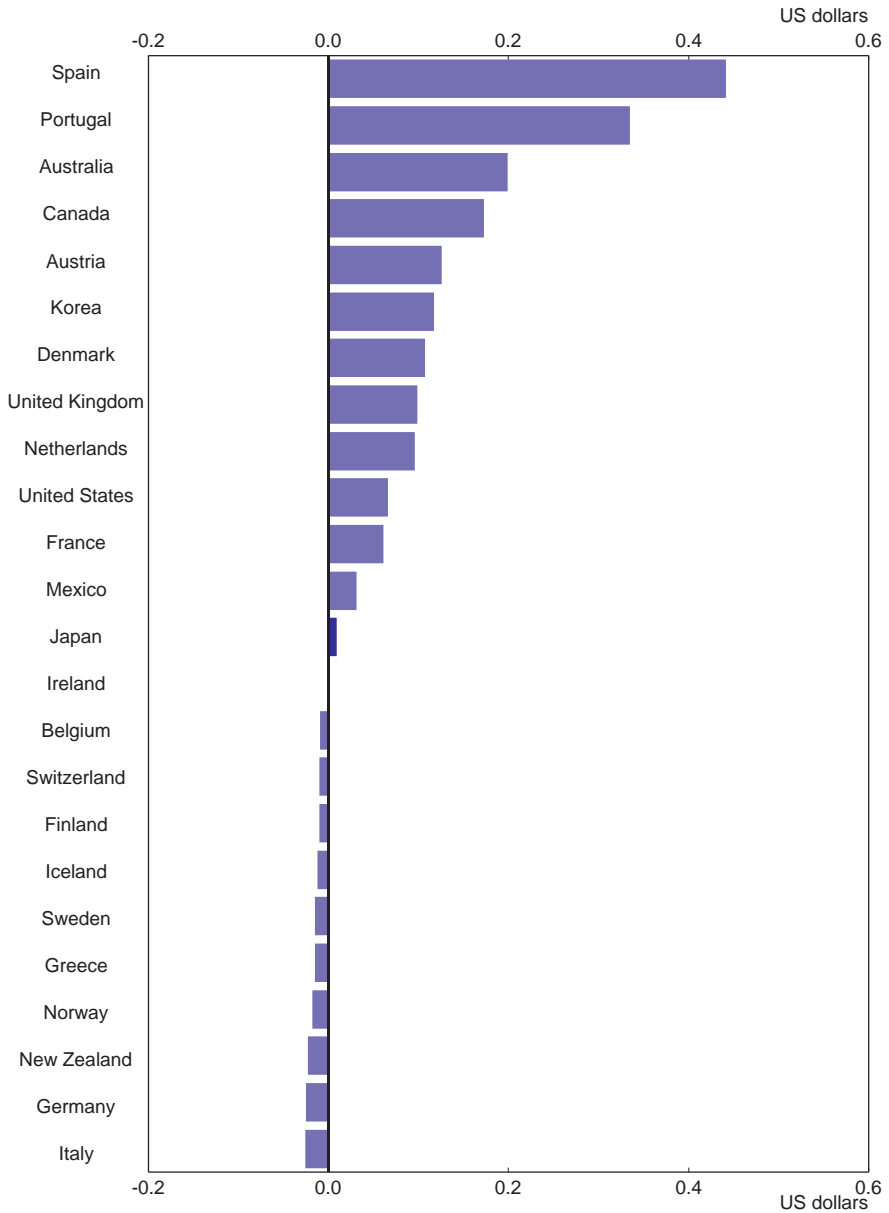
The distribution of R&D across the categories of process *versus* product development and basic *versus* applied research converged to the US distribution by the mid-1990s and many large firms have established their own basic research facilities.¹⁴⁸ The new stage of development changes the requirement for qualified personnel and some studies have indicated that the relative scarcity of such staff (*i.e.* post graduates) and the lack of mobility on the part of researchers might have contributed to lower productivity in basic research departments noted in field work by Branstetter and Nakamura. However, Japanese firms, at least some large ones, appear to be well aware of the problems they face and, in line with trends in other countries, a number have taken steps in setting up overseas research centres and establishing R&D alliances with foreign companies. The results of Branstetter and Nakamura suggest that, for their cross-section of companies, increased international knowledge flows are strongly correlated with higher levels of innovative performance.

Policy can directly influence private sector behaviour in this area in at least three ways: R&D expenditures, intellectual property rights (IPR) law and enforcement, and through taxation. The efficiency of the first is to be put to the test with the new five year programme. However, whether the intention of the government to focus funds only on four schemes will stimulate spending by firms (*i.e.* is in line with their priorities), or whether it reflects bureaucratic inertia, is unclear. It would be better to look at company priorities first and to allocate accordingly. With respect to IPR, the evidence from the viewpoint of the economy is at best mixed. The scope for patent right protection was greatly widened in 1988. The number of patents per invention has increased but Sakakibara and Branstetter find no evidence of an increase in either R&D spending or innovative output that could plausibly be related to the reform.¹⁴⁹ The protection of IPR is of course important in collecting rents associated with an innovation, although many companies appear either to license the patent immediately or just use trade secrets.

With the R&D system financed predominantly by industry, the question of tax treatment is important and there are a number of proposals to raise benefits (see Chapter II). The tax system appears to be relatively neutral at the moment with a subsidy of around 2 per cent of business R&D spending (higher for small companies) which is less than for about half the OECD countries (Figure 35). It is difficult to establish best practice fiscal treatment of R&D although the costs and benefits of different measures are well recognised.¹⁵⁰ The Japanese system is based on the increment to R&D and involves tax credits.¹⁵¹ The incremental method holds down fiscal costs and reduces the possibility of dead-weight cost (supporting research that would have been done anyway) but it may be more costly to administer relative to a flat rate system (*i.e.* a fixed percentage of actual R&D expenditures) which, depending on the tax credit rate, would entail greater foregone tax revenue. Tax credits tend to favour large companies (since in general

Figure 35. Tax treatment of R&D for large firms, 2001/2002

Tax incentives for 1 US\$ of business R&D



Source: Warda (2002).

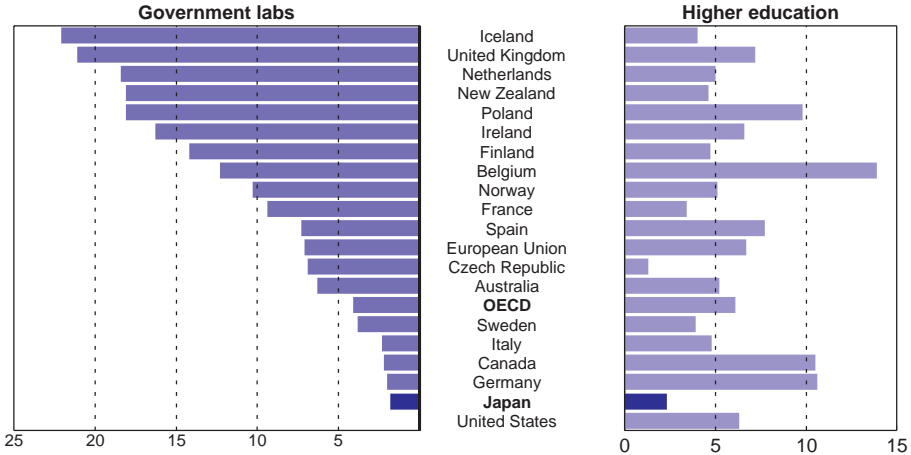
they make profits) and have the advantage that they are more transparent and are therefore likely to stimulate R&D. However, they do not benefit new high-tech firms which do not usually make profits in the initial stage of development. Since FY 1999, a modified tax incentive has been in force, which is aimed to cope with the decline of private R&D by increasing the number of applicable companies and lifting deductions. According to the National Tax Agency, the total tax cost only amounted to 41 billion yen in FY 2001.

Experience in the OECD area indicates that tax incentives to promote R&D (and also human capital formation) have a number of advantages over the wide variety of potential measures available although the judgement depends on accepting market outcomes as efficient.¹⁵² Studies still support the assumption that the social return to R&D is greater than the private return but they do not give a clear indication about how large the support for R&D should be. Under current fiscal conditions attention will also have to be given to prioritising tax measures, including whether to cut the overall corporate tax rate of around 41 per cent.¹⁵³ What needs to be avoided is the proposal to limit new R&D tax breaks to only particular areas such as nanotechnology and biotechnology, which would introduce distortions to the current system, and which starts policy down the slippery path of attempting to pick winners.

Science-based innovative activity by companies could be expected to strengthen the need for contact with universities and national research institutes (NRI) but this has been weak (at least formally) in Japan (Figure 36).¹⁵⁴ In part this could be due to the development of their own basic R&D capacity in the larger firms during the late 1980s. But there are also barriers. In a survey carried out by the Science and Technology Agency in 1998, the most frequently reported obstacle to co-operation with NRIs was the issue of ownership of R&D results, while the slowness of research at universities was the most often cited obstacle.¹⁵⁵ Universities and NRIs have been classed up till now as public sector institutions subject to central budget laws and civil service employment status (see below) which together have reduced the incentive for staff to undertake collaborative research with industry, at least formally.¹⁵⁶ For the universities and NRIs, research contracts were not popular since revenues covering indirect expenses were paid to the Treasury and contracts could not last longer than a fiscal year. In the same survey, speed was not an issue for research co-operation with foreign universities, the major barrier appearing to be communication difficulties. Research results from universities and NRI's were obtained mainly through "academic societies" and through personal contact. Indeed, the OECD (2002) concluded that informal relations between professors and large firms have been important: "Research funding was provided often based not on contract research with specified rights and obligations but on personal, tacit agreements between professors and firms. The professor published the research findings and the intellectual property was often given free to the industrial user." This system worked for some large firms

Figure 36. **Firms don't finance much work in government laboratories and universities**

Government and university research funded by business, per cent¹



1. 1998 or 1999 for most countries; 1997 for New Zealand.

Source: OECD, *Science, Technology and Industry Scoreboard*, 2001.

although not for smaller and new firms so that pressures have arisen for a more open and transparent industry-science relationship. With respect to technology transfer, the most cited impediment concerned uncertainty about property rights although a number of firms felt that research results from universities and NRIs could be better disseminated. Surprisingly, less than 10 per cent of venture firms made use of patents owned by universities and NRIs, although more than 60 per cent of such firms had expressed an interest.¹⁵⁷

Improving the returns from universities and national research institutes

The thrust of policy has changed toward promoting greater efficiency via improved incentives in the university and NRI system. Since FY 2000, a portion of research funds received from industry stays with the university, and contracts can now run longer than a fiscal year. However, the sums involved remain small. Firms can now be up to 50 per cent co-owners of patents originating from contracted research (since 1998) with universities and will retain preferential rights for a ten year period following patent application. Civil service status meant that researchers were not allowed to take up positions in for-profit firms. Since April 2000 this provision has been relaxed for researchers from universities and the NRIs. Property rights usually belong to the inventor unless special funding has

been provided by the government or special government facilities have been used. This feature of the system is perhaps controversial. Other countries are now moving more to a system where the institution retains the property rights but the researcher shares in the revenues. The allocation of public funds to universities via competitive tendering for R&D is to be doubled and the number of young researchers who receive financial support will be increased from the current level of 10 000 persons. An attempt to improve mobility for this group through greater use of fixed-term appointments has not been entirely successful. University evaluation is to be improved, and to this end national guidelines were revised in November 2001. Such assessments should play a crucial role in the government's plan to consolidate funding of the nation's 99 state universities to promote some 10-20 of them as premier world class institutions.¹⁵⁸ However, it is not clear whether the assessments will be truly at arm's length.

In recognition of the success of the US system, Technology Licensing Offices (TLO) have now been established (there are 27 at present) to promote the transfer of research to firms. Although public subsidies are available for a limited period of time, sustaining TLOs until inventions generate sufficient revenues appears to be a challenge. The government has set targets, inevitably a questionable exercise, for the establishment of 1 000 venture companies stemming from universities within three years and to increase tenfold within a decade the number of intellectual property rights granted by universities. In addition to the measures implemented above, the targets are to be achieved by supporting incubators and venture capital for university-derived venture businesses. These measures will not obviate the need to lower entry barriers more generally for all activities and not just those associated with the four priority areas set by the government.

Fostering clusters and regional dynamism

According to the CAO 2001, about 46 per cent of fast growing firms, whose sales are increasing by more than 10 per cent for two consecutive years, are located in Tokyo and its adjacent prefectures (Kanto).¹⁵⁹ The number of those firms per head in the Kanto area is 30 to 100 per cent higher than other areas. The ratio of start-ups to the number of enterprises shows no big difference among the regions but their sectoral pattern is quite different. Moreover, many of the regional economies other than the Kanto area tend to depend heavily on public works, which produce more than ten per cent of value added in those regions.

The importance of creating good framework conditions for entrepreneurship in local areas will increase as the government implements its policy to cut back on wasteful public works programmes and to reform fiscal relations between the central and local governments. This move will make it necessary for local government to go beyond the passive tradition of the past, which relied on public

works.¹⁶⁰ In an increasing number of OECD countries, fostering the agglomeration of entrepreneurs and intellectual networks is recognised as an important policy option for local governments since such clusters might stimulate innovation and start-up activity, and promote the subsequent growth of the enterprise.¹⁶¹

Although a number of industrial clusters already exist, the importance of fostering innovative clusters had not been widely recognised among Japanese policy makers until recently. In the past, regional industrial policy favoured such measures as building infrastructure and developing sites to attract large manufacturing companies. The initiative for such programmes was often led by the central government rather than by local governments as it required substantial central government funds. This kind of approach is no longer effective or feasible as manufacturing companies tend to locate their new plants outside Japan, and budget constraints in both local and central governments do not allow significant locational subsidies. The importance of building close relationships between firms and local universities was recognised even in the 1980s. Indeed, the government promoted the creation of industrial sites comprising knowledge-based industries in some local areas (technopolis programme). This programme, together with tight restrictions on building new plants in urban areas, led many electronics companies to locate their plants in Tohoku and Kyusyu areas. However, since the aim of this programme was to attract existing firms rather than to promote start-ups and enterprise development, the most important potential role of a cluster (to promote enterprise growth and start-ups, and to foster innovative entrepreneurs by taking advantage of externalities) was completely ignored.

Local governments have been active in establishing business incubators, which provide venture firms with office space, technical advice and, in some cases, financial support. Indeed there are now 203 incubators set up by both public and private bodies, the third highest in the world (Table 29). However, many of them do not actually play the role of an incubator, providing only office space and not technical advice and financial aid. According to a survey (JANBO), 34 per cent of public incubators and 50 per cent of private ones do not provide any services other than office space. Moreover, among the public incubators, only 23 per cent of them have managers and co-ordinators.

Table 29. **International comparison of incubators**

	Japan	US	UK	Germany
Number of incubators	203	850	90	300
Firms at incubators	2 247	6 458	1 710	–
Average number of staff	0.7	2.8	5.8	–

Source: METI (SME) 2000, Sakata *et al.* (2001).

Box 10. A successful case of a local cluster: Kyoto

Kyoto is located near the second largest city in Japan, Osaka, and has 1.5 million inhabitants. Kyoto is now known for its successful hi-tech cluster, comprising firms such as Kyocera, Nintendo, Omron and Sanyo Chemical. The Kyoto region also boasts Japan's greatest concentration of higher education institutions; it has 33 universities and 11 junior colleges. Porter and Takeuchi (2000) suggests the following points as key for the success of the Kyoto cluster.

- The city is geographically distinct and is modest in size. The absence of large dominant firms allowed smaller firms to prosper. The central government's large co-operative R&D programme ignored Kyoto companies. Religious organisations, academics and artisans hold as much power in Kyoto as do government officials and business leaders. This dispersion of power has forestalled rigid hierarchies and encouraged the creation of intimate networks.
- Small Kyoto businesses, unable to penetrate the closed keiretsu networks, were forced to identify and market to foreign customers.
- Since Japanese banks were unwilling to lend to small firms with no collateral or keiretsu affiliation, Kyoto-based firms tended to raise capital through the equity market.

They concluded that the case of Kyoto illustrates the importance of competitive pressure in a business environment that is characterised by high quality inputs and institutions, and which is open to innovation and dynamism.

The experience to date of both TLOs and incubators shows that the serious lack of specialists and co-ordinators has constrained the development of local clusters. In response, METI has launched a programme (*Industrial cluster programme*) which allows their staff at local offices to play a role of co-ordinator in local clusters. However, it appears that the original concept might be flawed. Rather than building clusters around existing skills and competencies, many projects are aiming at creating essentially an industrial park like that in other locations with a preference for high tech, including biotechnology. An example of a successful cluster (Kyoto, Box 10) illustrates both the need to build on local skills and the fact that they do not spring simply from government decisions.

Overall assessment of policy

Progress in developing efficient low cost network sectors is most advanced in the telecommunications sector. This sector is growing rapidly, in part stimulated by past regulatory reform, with new market opportunities expanding in

a dynamic manner. The allocation of access to dark fibre (unused glass fibre lines) of NTT to competitors at a reasonable price was an important step forward. These measures will aid the diffusion of ICT, which in turn should underpin productivity. However, there is still a need to better control the dominant carrier through greater reliance on *ex ante* regulation. To be effective, however, regulation must be backed by strengthened powers of enforcement and better disclosure by NTT of indicators which reflect the degree to which effective competition is developing. At a minimum, MPHPT should collect and publish statistics on the number of unbundled local loops or lines being shared by the incumbents with competitors, and the time required for providing circuits to competitors and to NTT clients. These indicators are published by most regulators in the OECD area.

In other areas reform success is mixed. Progress has been poor in the electricity sector with the current market incumbents given too great a role in deciding the regulatory reform route. With respect to postal services, a large part of the delivery system has been effectively ring fenced by restrictive entry requirements for the incumbent, which is now to be corporatised. While market opening has occurred in the express delivery part of the system, the incumbent will remain active in them. The experience overseas and in the domestic telecommunications sector that the dominant player will leverage its position of power into other markets has not been reflected in the legislation. There is therefore a need to establish a clear regulatory framework including asymmetric treatment of the dominant player. Moreover, the corporation will retain its integrated character in both banking and in insurance, raising similar regulatory concerns in these competitive markets. In view of the close connections with the Ministry it must be doubted whether it will establish credibility as an impartial regulator when it comes to inevitable conflicts.

Whether an “independent” regulatory body can achieve credibility in the fast developing markets while remaining part of a ministry, only time will tell. As far as international experience is concerned, only Japan and Korea have not established an independent regulator in the sensitive telecommunications field. However, there are other reasons why administrative independence from the ministry should be considered. Experience overseas has shown the need to employ highly specialised staff in regulatory activities. This fits poorly with the tradition of the civil service with generalists being shifted to new functions every two years. Independence would allow the new regulatory institutions to search for specialist staff and to employ them in a more flexible manner.

The demand for and the supply of human capital is evolving in line with new business strategies and technologies. While companies might have less incentive to provide in-house training, this is not necessarily negative since the incentive for individuals to acquire human capital, which is portable between firms, has also increased. The role for public policy is to ensure that the supply of

training is improved by, *inter alia*, dropping restrictive regulation for building new educational institutions and allowing them greater flexibility about what they teach. Reform of the universities is important but in an attempt to establish premium institutions for research and teaching, care will have to be taken that assessment is at arms length (*i.e.* that the reform has content and not just form). Public support of training will also need to be reoriented from supporting firms to aiding individuals including those who have less opportunity for training such as part-time workers.

The enterprise-based R&D system has been very successful and is already evolving to meet new challenges such as the increasingly international nature of research. Whether they are basing their work enough on science is an open question, although if this is an important issue, commercial pressures should be sufficient to bring about necessary adjustment. Any further tax measures should remain balanced, and the government should allocate its considerable funding more in line with the efforts of businesses than the four priority areas specified by the bureaucracy. Such a change would be in line with the recommendations in Chapter III. There are, however, clear problems with the universities and the national research institutions. The government's move to create a more open and transparent industry-science relationship and to remove the disincentives to co-operation facing the universities and the NRIs goes in the right direction. However, it is too early to judge the effectiveness of the measures taken. The demand for more transparency might simply suffocate the current informal system of professors with companies without putting anything better in its place. The assessment of universities might not be at arms length and setting targets for university-based new start-ups might simply create new administrative distortions. Greater efforts have to be made to internationalise universities and to open opportunities for new staff. Above all they should focus on quality research and expand post-graduate education.

The lack of regional dynamism is a key issue, which will come to the forefront as wasteful public works spending is gradually cut back. All too often authorities have reacted by demanding new industrial parks (usually termed innovative clusters) based on high tech, and university TLOs are also viewed in this manner. More attention needs to be paid to facilitating or invigorating existing national clusters based on current skills which would be just as effective at promoting dynamism of existing firms as attracting new start-ups.

Notes

1. The government adopted a substantial revision to the method of estimating QNA at the time of the release of the second quarter QNA in August 2002. The revised method utilises more supply side statistics for the estimation of consumption and investment with less weight on the household and corporate surveys. According to this revision, GDP growth rates from the second quarter in 2001 to the first quarter in 2002 have been revised substantially. Above all, the unreasonably high GDP growth in the first quarter of 2002 (5.7 per cent, s.a.a.r.) was revised down to 0.0 per cent, which seems more reasonable, compared with other indicators such as industrial production.
2. Although a sharp increase in exports to Asia partly reflects the recovery of exports by those countries to the US and other areas, the increase in exports of final consumption goods to Asia such as home electronics and vehicles outweighed the increase in exports of electrical parts and other intermediate goods. This could suggest that the Asian countries might become more important as a final destination of Japanese exports.
3. Since the March Tankan showed no improvement in business sentiment, the gain in the June survey might include a degree of catch up.
4. See, Matsuoka, "Capital investment outlook: Will cashflow and capex remain decoupled?", September 2001, Deutsche Bank Security.
5. This is partly because the full mark-to-market accounting has not been introduced for the real assets held by firms for the purpose of fixed investment. However, an increasing number of firms have started evaluating their real assets at market value with a view to adapting to the international accounting trend (*i.e.* asset impairment).
6. See, for example, Cabinet Office, Annual Report on Japan's Economy and Public Finance, 2000-2001.
7. Some argue that the massive increase in the monetary base may stimulate consumption, as some part of the increase in money holdings by households could flow into consumption. The possible shift to consumption from bank accounts due to the removal of blanket deposit insurance is also suggested to have some effect, but such an impact is thought to be small, if any.
8. For a review of some of these programmes see *Regulatory Reform in Japan*, Chapter I, OECD, 2000.
9. See the OECD *Survey of the United Kingdom*, 1985, and Lewis Evans *et al.*, "Economic Reform in New Zealand 1984-95: The Pursuit of Efficiency", *The Journal of Economic Literature*, Vol. XXXIV, No. 4, December 1996.
10. Although net lending in CY 2000 is slightly larger than in CY 2001, the difference can be explained by a one-off capital transfer in CY 2000, which amounted to 4.5 trillion yen.

11. Funds in a special account obtained from selling shares in Nippon Telecom and Telegraph (NTT) several years ago were transferred to a special account of the central government (*Sangyo toushi tokubetsu kaikei*) that provides interest-free loans to local governments and public corporations to finance construction of infrastructure and public facilities. To give local governments a strong incentive to implement the planned public works, the central government also made a commitment to giving grants to local governments to cover most of the repayment cost of the loans provided by the special account over the next several years. Consequently, transparency of the budget has been further eroded.
12. Consolidated tax accounting has been introduced with limitations: the consolidation is only for domestic subsidiaries, 100 per cent of whose capital is owned by parent companies; the loss carry-over generated before the introduction of this scheme is only for parent companies; and the special losses due to the creation of reserves for company pension payments are excluded for all companies.
13. The LAT special account has accumulated 42.6 trillion yen of debt as of March 2001. The BOJ has placed the lending by financial institutions to the LAT special account on the approved list of collateral for discounting.
14. Moody's and Standard and Poor's downgraded their rating of JGBs in the spring of 2002 from Aa3 and AA to A2 and AA minus, respectively. Fitch also downgraded JGBs in November 2001 from AA plus to AA. The government's questionnaire included the following questions: what kind of risk is contemplated as default for local currency denominated debt; how the world's largest current account surplus (or domestic saving) and foreign exchange reserves are evaluated; and why a country whose per capita GDP is one third of that of Japan with a large current account deficit is rated higher than Japan. The government sent letters several times to those companies and, in one letter, it explicitly stated that it believes to possess the right to claim compensation if any government or corporation suffer unwarranted damage by the rating. The dispute is ongoing.
15. However, long-term interest rates recorded their largest monthly increase (105 bps) in the past 20 years in December 1998, when the Ministry of Finance announced the reduction of JGB purchases by the Trust Fund Bureau.
16. As of March 2002, the share of long-term bonds (10 year and more) was around 65 per cent, while that of medium-term bonds around 27 per cent.
17. To give some order of magnitude, the decline of interest rates since 1990 has saved the budget some 43 trillion yen cumulatively.
18. The stock of foreign assets is also important. See Matsuoka, *Iron hexagon: Japan's ponzi scheme keeps going*, Deutsche Bank Security, August 2001.
19. Under the past scheme, the Trust Fund Bureau (TFB) collected funds from postal saving and public pension funds and invested in a number of public corporations as well as purchased JGBs. Some of the funds at the TFB were reallocated to the postal saving and the public corporation for pension reserves, both of which also invested a certain portion of their funds in JGBs.
20. See M. Shirakawa, "The reform in the Japanese government securities market", Bank of Japan, Note to Roundtable on Capital Market Reforms in Asia, April 2000.
21. Pursuing these two objectives together could reduce risk aversion by the public financial sector, possibly raising bond prices, which could send wrong signals to the private sector. See Ihori, Katoh, Nakano, Nakasato, Doi, Kondo and Sato, "Public bond

- management and the role of public financial institutions”, Chapter 6, *Budget deficit and economic activity*, Economic and Social Research Institute, Cabinet Office, March 2002.
22. One such mechanism is that as inflation returns, investors will see the danger of the government reducing the real burden of public debt on the budget by a period of unexpected inflation. They will consequently demand a risk premium and could shift funds off-shore.
 23. The debt dynamics is derived as follows, $b_t = d_t + (1 + r)/(1 + g) b_{t-1}$, where b is the debt-to-GDP ratio; d is the primary-balance-to-GDP ratio; r is the nominal interest rate; g is the nominal growth rate. The required primary surplus to stabilise the debt-to-GDP ratio at time t is calculated as $d_t = (g - r)/(1 + g)b_t$.
 24. The size of saving is calculated by the OECD based on the National Accounts. Government investment, and wage and non-wage consumption (excluding health care) are assumed to be cut by 3 per cent, 0.5 per cent and 7 per cent, respectively. A 700 billion yen saving in health care is also assumed.
 25. These principles include: reducing public investment to the level prior to the introduction of stimulus packages; a steady reduction in the number of central government employees; social security spending to be limited and; non-wage expenditure should focus on reallocation.
 26. The primary deficit for central and local government projected in the government's medium-term perspective is smaller than that for general government because the social security fund runs a primary deficit. However, the primary deficit in social security funds may not result in an increase in gross debts as it has accumulated net assets of 200 trillion yen (40 per cent of GDP). The gross debt projected in the government's perspective is also smaller than those on a national account basis as it excludes debts held by some special accounts of the central government, which amount to more than 50 trillion yen.
 27. See page 78 of the OECD *Survey of Japan*, 2001. See also Giavazzi, F. and M. Pagano (1995), “Non-Keynesian effects of fiscal policy changes: International evidence and Swedish experience”, NBER *Working Paper* No. 5332, Bertola, G. and A. Drazen (1993), “Trigger points and budget cuts: explaining the effects of fiscal austerity”, *American Economic Review*, 83, and Alesina, A. and R. Perotti (1996), “Fiscal adjustments in OECD countries: composition and macroeconomic effects”, NBER *Working Paper* No. 5730. Moreover, the fiscal theory of the price level would suggest that demand for money may, under such circumstances, fall, thereby stimulating consumption.
 28. See, Ihori, Katoh, Nakano, Nakasato, Doi, Kondo and Sato, “Review of non-Keynesian effects in fiscal policy”, Chapter 2, *Budget deficit and economic activity*, Economic and Social Research Institute, Cabinet Office, March 2002.
 29. The past major tax reductions include: a special reduction in personal income tax (5.5 trillion yen) in 1994; advanced tax reduction in personal income tax (3.5 trillion yen) in 1995 and thereafter; a temporary cut in personal income tax (2 trillion yen for both 1995 and 1996, and 4 trillion yen for 1998); reduction in corporate tax rate from 37.5 per cent to 34.5 per cent in 1998 and thereafter; proportional tax cuts for personal income (4.1 trillion yen) and corporate income tax (2.5 trillion yen) in 1999; and a reduction in corporate tax rate from 34.5 per cent to 30 per cent in 1999. On the other hand, VAT was raised from 3 per cent to 5 per cent in 1997 (including 1 per cent local VAT).
 30. The government's tax commission has opposed the suggestion of lowering the corporate tax rate. While keeping the marginal rate of corporate tax of the central government constant, it proposes to introduce a corporate tax based on sales as an

- alternative to the existing local business tax, which taxes corporate profits. Since the introduction of a new tax would enable local governments to raise tax revenues from more firms including those making losses, this would lower the effective corporate tax rate including central and local taxes by 3 percentage points.
31. However, even in the early 1990s when the economy was booming, 48 per cent of firms reported that they were making losses. This might say a lot about the ability of small firms to understate business earnings.
 32. See, page 171, Chapter 4, 1999 *Survey*, OECD.
 33. See, OECD Directorate for Financial, Fiscal and Enterprise Affairs, "Tax and the economy: a comparative assessment of OECD countries", *OECD Tax Policy Studies*, 2001. See also P. van den Noord and C. Heady, "Surveillance of tax policies: a synthesis of findings in economic surveys", *OECD Economics Department Working Paper*, 303, 2001.
 34. See, Doi, T. and T. Hoshi, "FILP: How much has been lost? How much more will be lost?", March 2002.
 35. This in fact happened in the period just before the collapse of Mycal in September. The main bank assumed loans granted by other banks thereby increasing its exposure. This case is now the subject of a shareholders law suit, which might lead other main banks to curtail their implicit commitment.
 36. See OECD *Survey of Japan*, 2001, Annex I for a review of private sector estimates of NPL.
 37. The evidence (anecdotal as well as based on company reports) is that bad borrowers can pay lower rates than prime borrowers.
 38. For an example see M. Fukao, "Barriers to financial restructuring: Japanese banking and life insurance industries", in *Structural Impediments to Growth in Japan*, NBER, 2002.
 39. In the case of one large company the banks tried to avoid the guidelines and arrange matters between themselves and the company. After dissatisfaction among other creditors became more pronounced, the company finally agreed to work under the INSOL guidelines.
 40. The criteria even extend to supporting a supermarket chain.
 41. For a sense of the tone of the debate see Y. Fuchita, "Recent developments concerning Japan's bad loan problem and the outlook for its financial system", *Capital Research Journal*, Vol. 4, No. 4, 2001.
 42. As part of the sale agreements for two large nationalised banks the RCC has agreed to repurchase loans which have lost more than twenty per cent of their value within three years. This clause was intended to compensate the purchaser for not being allowed to conduct a due diligence audit. The RCC is now declining to repurchase some of these loans and the cases may be taken to court.
 43. Standard and Poor's, *Unsustainable revenue growth at major Japanese banks*, Tokyo, July, 2002.
 44. See Fukao *op. cit.* who also concludes that the current solvency ratio might over-state the financial strength of life insurance companies.
 45. See Fukao *op. cit.*
 46. See Fukao *op. cit.* 2002.
 47. Some 6½ trillion yen of core capital is also in the form of preferred shares bought by the government during the re-capitalisation of the banks. Formally speaking it will need to be repaid but there is nothing to prevent the government from simply selling its shares to the public.

48. For an insider's view of the crisis during the 1990's and of the lessons learned see H. Nakaso, "The financial crisis in Japan during the 1990's: how the Bank of Japan responded and the lessons learned", *BIS Papers*, No. 6, 2001.
49. Foreign banks obtained yen funds in exchange for providing dollar funds to Japanese financial institutions for a certain period. Because the cost of obtaining yen funds (the yen swap rate) was negative, foreign banks were more or less guaranteed a profit margin even though the interest rate on yen investment was virtually zero. See M. Shirakawa, "One year under 'Quantitative easing'", *IMES Discussion Paper*, 2002-E-3, Tokyo, 2002.
50. The pattern of repatriation of foreign assets in the run up to the end of the financial year followed by an outflow afterwards is a well established pattern in Japan, although the period of outflow seems to have become more spread-out in recent years.
51. On one day the Ministry of Finance used the Federal Reserve Bank of New York and the European Central Bank as its agent.
52. The Tankan Survey includes sales price forecasts which have been negative for some time. Moreover, they actually deteriorated as the economy slowed in 2001 but as monetary policy eased. For a review of composite measures see Chapter I.
53. For example, M. Matsuoka, *Monetary policy, wealth effect and private consumption*, Deutsche Bank Economic Research, Tokyo, May 2002.
54. This methodology uses both the output gap and the price gap to explain price level movements. The latter is the deviation of the current price from the long run equilibrium price called P-star, which is supported by the current money supply level. This in turn is governed by the velocity gap. For estimates for Japan see M. Matsuoka, *Will inflation be back? Analysis from the P-star model*, Deutsche Bank Group, Economic Research, Tokyo, 3 June 2002.
55. A more controversial approach would also see a role for future tax liabilities arising from the build-up of debt.
56. The company bond market has been expanding by some 3 per cent per annum since 1998 which is about the same pace as the decline in bank lending. However, the size of the market is much smaller amounting to only 20 trillion by mid 2002.
57. Growth is driven not only by increased inputs of factors but also by technological progress, one aspect of which is summarised by multifactor productivity (MFP). Although MFP is a well defined theoretical concept, calculation is far from easy and small changes in the period considered and in smoothing procedures to account for business cycles can lead to large changes in estimates. Moreover, the measurement of capital stock by the statistical authorities is very imprecise with major problems arising in allowing for scrapping and depreciation, in particular, in periods when these rates are likely to be changing. The difficulties are even more severe in the case of Japan where technical progress over the catch-up period might have been incorporated in new capital stock (*i.e.* embodied technical progress) which would usually lead to an overestimate of MFP. Labour productivity (corrected for hours of work) is easier to calculate but is also subject to problems noted in the text. It is therefore important to consider broad tendencies over time and not to put too much weight on small differences in estimates unless underpinned by other information. For a detailed discussion of the issues involved, see P. Schreyer and D. Pilat, "Measuring Productivity", *OECD Economic Studies*, 33, 2001.
58. For a detailed account of MFP developments and of labour productivity in the convergence period see R. Katz, *Japan: The system that soured*, Eastgate, 1998.

59. For the derivation of this relationship and the construction of an empirical model examining the path to a new lower steady state rate of MFP growth see F. Hayashi and E. Prescott, "The 1990s in Japan: A Lost Decade", *Review of Economic Dynamics*, 5, 2002.
60. Another reason for care in using MFP estimates is that capital stock estimates are unreliable.
61. The *Growth Project* focused not on growth but on growth per head of working age population which slowed continuously from the 1970s to the end of the 1990s. See *The sources of economic growth in the OECD countries*, OECD, 2002, forthcoming.
62. See for example M. Baily and R. Solow, "International productivity comparisons built from the firm level", *Journal of Economic Perspectives*, 15, 3, 2001.
63. See Katz *op. cit.* Figure 2.2 who shows that the globalisation index for the weak sectors in Japan is much less than in Germany or the United States. There is also a wider spread between the weakest and strongest sectors.
64. McKinsey Global Institute, *Why the Japanese economy is not growing: micro barriers to productivity growth*, Washington, 2000.
65. See M. Porter, H. Takeuchi and M. Sakakibara, *Can Japan Compete?*, Macmillan, 2000.
66. Net assets left by senior citizens as a proportion of annual disposable income is around 2 200 per cent in Japan and 660 per cent in the United States.
67. For correlations which make the relationship even more apparent than in the figure, see S. Scarpetta *et al.*, "The role of policy and institutions for productivity and firm dynamics", OECD Economics Department Working Paper, 329, 2002.
68. For a comprehensive review of the development of competition policy in Japan see OECD, *Regulatory Reform in Japan*, Chapter III and background report, 1999.
69. Two distinct forms of bid rigging need to be dealt with: one between firms (*dango*) and the bureaucratic-led bid rigging (*kansei dango*) which is equally damaging to the economy.
70. The Ministry of Land, Infrastructure and Transport has a long history of limiting entry into air transport and failing to promote competition among airlines. Two small airlines which were established in 1996 – one has now gone bankrupt – were allocated very few slots at the beginning and ticket counters and gates were inconveniently located. Moreover, the various authorities involved have been extraordinarily slow in increasing capacity at Tokyo's crowded domestic airport.
71. From the work conducted by the OECD *Growth Project* and the empirical literature more generally there appears to be a strong causal relationship between increasing openness (as measured by the trade/GDP ratio) and growth in the OECD area.
72. The high share for the euro area is distorted somewhat by the exclusion of the UK, which has been a rapidly growing market for Europe.
73. H. Wall, "Has Japan been left out in the cold by regional integration", *Monetary and Economic Studies*, Vol. 20, No. 2, April 2002.
74. The agreement with Singapore covers a wide range of areas including market access for goods and services, mutual recognition of standards, ICT, competition policy and financial services.
75. The producer support estimate (PSE) for Japan is 59 per cent for 2001 while the average for the OECD area is 31 per cent. *Agricultural Policies in OECD Countries: Monitoring and Evaluation 2002*, OECD, 2002, Table III.3.
76. Study undertaken by the Japan Centre for Economic Research using the GTAP model.

77. Japan maintained extensive controls on inward foreign direct investment based on domestic industrial policy concerns until 1967 when greenfield foreign establishment was freed in a number of sectors designated as liberalised. Subsequently, the ceilings imposed in non-liberalised sectors were gradually lifted, but complete abolition of the cumbersome approval and notification procedures imposed on foreign investors came only in 1998, much later than in most other industrialised countries. At present, reservations maintained by Japan under the OECD Code of Liberalisation of Capital Movements in respect of inward FDI concern the following sectors: primary industry related to agriculture, forestry and fisheries, mining, oil, leather and manufactured leather products, air and maritime transport.
78. See Katz, *op. cit.*, for examples of how cartels set up to protect industries that were not competitive and to sustain high domestic prices were mutually supporting and prevented new entrants (including FDI). They also served to reduce imports and in some cases increased exports.
79. K. Fukao and K. Ito, "Foreign direct investment and service trade", in A. Krueger and K. Ito, *Barriers to trade in services in the Pacific region*, NBER, 2001. See also K. Ito and K. Fukao, "Foreign direct investment in Japan: Empirical analysis based on establishment and enterprise census", RIETI *Discussion Paper Series*, 01-E-002.
80. It is a moot point whether this particular restriction is covered by the reservation lodged by Japan under the OECD Code of Liberalisation of Capital Movements with respect to investment in "primary industry related to agriculture...".
81. For a review of the trade and income effects of China's entry into the WTO see Annex II "Summary of studies of the impact of WTO on China", in *China in the World Economy*, OECD, 2002.
82. For a more extensive discussion see Y. Nakamura and M. Shibuya, "The hollowing out phenomenon in the Japanese industry", *Studies in International Trade and Industry*, 19, REITI, Tokyo.
83. For estimates based on US import data (HS 10 digit classifications) see C. Kwan, *Complementarity and Competition between China and Japan*, REITI, www.rieti.go.jp/en/index.html
84. The study shows that 50-85 per cent of total productivity growth in five countries (excluding Japan) is driven by what happens in existing companies. Entry and exit of firms can account for 20-40 per cent of productivity growth with entry more important in high tech sectors. See S. Scarpetta, *et al.*, "The role of policy and institutions for productivity and firm dynamics: evidence from micro and industry data", OECD *Economics Department Working Paper*, No. 329, 2002.
85. Recession cartels and agreed capacity cuts during this period often led to proportional cuts across enterprises that bore no relation to productivity and also led to gaming outcomes on the part of firms which sought to increase capacity and market share to put them in a better bargaining position at a later time. See Katz *op. cit.* and also Porter *et al.*, *op. cit.*
86. Audretsch and Thurik (2001) have demonstrated that an increase in entry rates tends to result in higher subsequent growth rates and a reduction of unemployment. D. Audretsch and R. Thurik, "Linking entrepreneurship to growth", OECD *STI Working Papers*, 2001/2, 2001.
87. From K. Komoto, "Economic impact and policy implications of the long-term decline in Japan's business start-up rate", NLI *Research Institute*, 2002, No. 161.

88. One of the model cases assumed by the Council for Regulatory Reform is a set of exemptions concerning port services, including facilitation of custom procedures, abolishment of additional charges at night, easing the qualifications for issuance of tourist visas, and the allowance of legal and accounting services provided by foreign lawyers and accountants. Another important model case assumes easing regulations in agriculture, which limit the size of agricultural land holdings and restrict the entry of corporations into many agricultural businesses.
89. To give an idea of the costs of the present system, advisors have estimated that reforms could lead to over 5 million new jobs in the service sector in five years.
90. See J. Peek and E. Rosengren, *Have Japanese banking problems stifled economic growth?*, mimeo for a study based on a unique data set which traces the link from individual firms to their main bank. They also discover no evidence of a credit crunch. Hayashi and Prescott *op. cit.* also find no evidence that potentially profitable investments lacked finance during the 1990s. A study by the IMF also indicates that balance sheets of both banks and enterprises contributed to the decline of credit. See IMF Article IV Consultations, Japan 2002.
91. Although hard data are not available, firms are known to have cut back activity in some areas as part of their debt reduction strategies. Industrial processes and even whole factories have been moved abroad, a process which also took place in the 1980s following the appreciation of the yen. At the other end of the scale, older firms are now increasingly failing: companies with a history of 30 years or more accounted for a record quarter of the bankruptcies in 2001 and this pattern has continued into 2002.
92. The criteria even extend to supporting a supermarket chain.
93. There is a certain guarantee that loans will be repaid since they are classed as common interest claims which have priority over any claims (general claims) originating from pre-petition causes. However, the protection is not strong. See M. Iwatani, "Issues surrounding debtor in possession financing in Japan", *Capital Research Journal*, Vol. 4, No. 2, 2001.
94. Y. Seki, "The use of debt equity swaps by Japanese companies", *Capital Research Journal*, Vol. 5, No. 2, 2002.
95. For a description of the Japanese bankruptcy framework in an international perspective see OECD *Economic Survey of Japan*, 2000, Box 6.
96. In addition, it is also proposed to ease the condition that all directors must resign to cover the case where some directors are brought in to help solve a deteriorating situation.
97. For a review of the impact of corporate governance arrangements on performance focusing on shareholder rights, see S. Johnson and A. Shleifer, "Privatisation and corporate governance", forthcoming in T. Ito and A. Kreuger (eds.), *Privatisation, Corporate Governance and Transition Economies*, University of Chicago Press. They find that various dimensions of shareholder protection do affect performance, not only at the corporate level but also when a cross-section of countries is examined, although their sample is heavily weighted to Asia.
98. Foreign holdings have now risen to around 18 per cent. Financial institutions continue to hold around 40 per cent despite the reduction of holdings by banks.
99. For a general overview of the new code see S. Osaki, "Corporate governance and reform of Japan's commercial code", *Capital Research Journal*, Vol. 5, No. 2, 2002.

100. The new committee will have similar responsibilities to the “operating committees” and “management committees” that exist already. Unlike these unofficial committees, the new one has powers and responsibilities clearly defined in the law.
101. The Tokyo Stock Exchange survey of corporate governance in 2000 covered 1 310 firms and arrived at somewhat different results. 60 per cent replied that they had taken measures to strengthen the board. Of these, 33 per cent said that they had nominated outsiders, 46 per cent said that they had reduced the number of board members, and 35 per cent that they had introduced executive officers. See K. Nitta, “Corporate governance rating”, NLI *Research*, 02/06/13.
102. The reason for reducing the size of the board of directors is less concerned with efficiency than to lower the total cost of shareholder law suits. These have now been capped at six years annual income of a representative director.
103. At municipal level they are 70 per cent and 45 per cent, respectively. The ratios are better at prefectural level but still below those of the central government.
104. For example, in one case a Ministry received 301 comments in the period 25 July to 27 August. The final version of the bill was published only 13 days later raising doubts about the sincerity of the procedure. The bill was virtually unchanged.
105. While on mission the Secretariat was given numerous examples of contradictory action by customs and tax officials; in one case a submission for a license was initially rejected, even though the relevant Ministry had no right to do this, and subsequently reversed its decision.
106. Population estimates in the past have failed to anticipate the fall in the number of children per couple so that population growth has been overestimated. The most recent projection appears to have reacted to widespread criticism and is based on the assumption that a couple born after 1985 will have only 1.72 children in their lifetime. The current post-50 age group had an average of 2.14 children.
107. Ono and Rebick calculate that a male employee with 30 years of tenure would lose 30 per cent of his earnings by leaving his current job. Such a loss should not be attributed to the loss of firm specific capital since there is little evidence that the wage profile reflects productivity rather than other more sociological factors. H. Ono and M. Rebick, “Impediments to the Productive employment of Labour in Japan”, in M. Blomstrom *et al.* (eds.), *Structural Impediments to Japan's Economic Growth*, NBER, 2002.
108. The loss of pension rights can be very substantial: 10-20 million yen for an average pension of 35 million yen depending on the age of separation. For this reason, firms offer lump sum payments to individuals who leave under early retirement plans or who are transferred, often permanently, to other companies. Ono and Rebick, *op. cit.*, report that additional lump sum payments amount to between 5 and 10 million yen but do not cover all the losses in pension value. Overall losses of up to 100 million yen may be realised by workers who lose their jobs at large firms at age 40.
109. For example, promotion in a US company often occurs immediately after entry into a firm but in a typical Japanese firm is non-existent for the first 12 years (see Ono and Rebick and references therein). In these circumstances, bringing in older workers disrupts the system.
110. This is the main conclusion of Kato who also shows that restructuring and downsizing have depended on early retirement and transfers of employees to subsidiaries (often to sales subsidiaries) and related firms and hiring cuts. T. Kato, “The end of lifetime employment in Japan? Evidence from national surveys and field research”, *Journal of the Japanese and International Economies*, 15, 2001. With respect to the ability to transfer to

- smaller firms his results might be somewhat misleading since Fujiki *et al.* (2001) have shown that the smaller firms are no longer characterised as in the past by a shortage of labour. H. Fujiki *et al.*, “Structural issues in the Japanese labour market”, *Monetary and Economic Studies*, 19, 2001.
111. For more detail, see “Employment protection and labour market performance”, Chapter II, OECD *Employment Outlook*, 1999.
 112. Redundancy dismissals require urgent business reasons for reducing the number of staff, reasonableness of selection criteria, and reasonableness of procedure.
 113. The change in the law in 1999 opened up most areas to dispatched workers except those mentioned in the text.
 114. The relatively high proportion of spending on unemployment benefits reflects in part the recent rise in the unemployment rate.
 115. See R.G. Fay, *Making the public employment service more effective through the introduction of market signals*, OECD, 1997 and OECD, “Labour market policies that work”, *Policy Brief*, July 2001.
 116. If the requirement would be strictly adhered to, it could prevent the headquarters of a holding company from recruiting employees on behalf of their group companies. See Ohtake, *Discussion in Economics*, Spring 2000, Toyokeizai.
 117. For example, the Australian government has introduced a competitive framework in job services by contracting public employment services to private and community placement organisations while the functions of registration and eligibility assessment were amalgamated with the administration of income support in social security.
 118. The eligible age for employment grants in the new and growth sectors has been expanded to unemployed between 30 and 60 years who are on public vocational training. Initially, to get those grants, firms were required to hire unemployed through the public job placement offices. Now firms can receive the grants when they employ workers through private job placement agencies licensed by the government. One of the reasons for low utilisation of these schemes could be the economic downturn since late 2000, which might constrain employment by firms even with public grants.
 119. Dead-weight costs arise from the situation where many of those for whom the subsidy is paid would have been recruited anyway: money paid for those recruits is dead-weight and has no effect at all. The substitution effect means that some of those recruited merely replace others who the firm would have recruited instead. See R. Layard, S. Nickell, R. Jackman, *Unemployment: Macroeconomic performance and the labour market*, Oxford press, 1991.
 120. J. Martin (2000) summarises the effects of various active labour market measures. Evaluations of wage subsidies in Australia, Belgium, Ireland and the Netherlands have suggested combined dead-weight and substitution effects amounting to around 90 per cent, implying that for every 100 jobs subsidised by these schemes only ten were net gains in employment. See J. Martin, “What works among active labour market policies: Evidence from OECD countries’ experiences”, *OECD Economic Studies*, No. 30, 2000.
 121. Among the mechanisms involved, contributions to health insurance and public pensions are exempt for spouses provided that their employed hours do not exceed a certain level and annual income does not exceed 1.3 million yen. Contributions to unemployment insurance are exempt for spouses whose annual income does not exceed 900 000 yen. There is evidence that these factors influence hours of work. C. Horioka, “Japan’s public pension system: What’s wrong with it and how to fix it”,

- Japan and the World Economy*, 11, 1999. For details of how the income tax system influences the return to work decision see *OECD Economic Survey of Japan*, 1999.
122. The guidelines covering age discrimination are effective only to some extent and age requirements are still usually associated with job offers. For example, one of the exceptions is related to seniority based wages: "Cases where recruiting or hiring is intended for workers under a certain age in situations where in order to make wage payments regardless of age to new employees, companies will be required to revise present regulations determining wages mainly in accordance with age in such a way that it will have an adverse effect on the wage payment to existing workers."
 123. A great deal will also depend on how corporate groups (*i.e. keiretsu*) evolve. For an analysis see Y. Yafeh, "Japan's corporate groups: Some international and historical perspectives", in M. Blomstrom *et al.*, *Structural Impediments to Japan's Economic Growth*, NBER, 2002.
 124. Figure 28 converts yen prices to dollars using the exchange rate for August 2002. The MPHPT makes its calculations using purchasing power parity which has the effect of lowering prices.
 125. For example, the regulator in Britain has the power to impose fines of up to 10 per cent of UK turnover for up to a maximum of three years.
 126. Long run incremental cost (LRIC) has been adopted as the methodology for determining interconnection prices although the precise form of the technique is still under discussion. See *Survey 2001* for a discussion of LRIC A and B methods.
 127. An example of bundling would be combining new products, which are subject to competition, with the existing local exchange business, which is not subject to competition.
 128. The logic here is that the right to place poles was given free by the authorities to the electricity companies so they should not be left in a position to extract scarcity rents from telecommunications operators. Charges related to operations are permitted.
 129. See "Corporate IT investment and internet usage gain momentum: The NLI Survey of Business conditions", *NLI Research*, No. 140, 2000.
 130. H. Joffe, "Japanese business models for electronic commerce—laying the foundation of a ubiquitous networking infrastructure with mobile phones and convenience stores", *Vierteljahrsheft*, 4-2001, DIW. Berlin.
 131. More recently, ADSL (asynchronous digital subscriber line) and DSL have been spreading due to lower prices following local unbundling and better access to facilities (colocation).
 132. For highly qualified engineers, treaties have been signed with India, Korea and China which should allow work permits to be granted more readily.
 133. This was the recommendation of the 1999 *Regulatory Reform Review of Japan*.
 134. Competition will be allowed in express mail delivery services where the mail item is charged 1 000 yen or above; items weighing 4 kg or more or with a combined length, width and depth of more than 90 cm and; where the delivery time does not exceed 3 hours.
 135. See *OECD Survey*, 2001 Table 6 which is in turn drawn from CAO, *The economic impact of recent regulatory reform*, Tokyo, April 2001.

136. At present 96 per cent of slots on the longer runway are subject to coordination rules set down by IATA. However, raising slots by some 4 per cent would still be a significant change for an airstrip which is already suffering from capacity constraints.
137. Students invest a great deal of money and effort to pass difficult entrance exams for prestigious schools and the investment does pay. Employers, however, do not assess graduates on the basis of their university performance but on the basis of being at a given university. See H. Ono, "College quality and earnings in the Japanese labour market", *SSE/EFI Working Paper*, 395, Stockholm, 2002.
138. Blondal, Field, Girouard and Wagner (2001), estimate that the private rate of return to tertiary education in Japan, which is based on pre-tax earnings and the length of study, is around 8 per cent. This is below the average of sample countries but higher than in Germany and Italy. The social rate of return to tertiary education in Japan is 5½ to 6½ per cent. Private rates of return to tertiary education for men 45 years and older are negative as is the case in other non-Anglo-Saxon countries. This reflects the high opportunity cost for older workers due in part to the steep age/wage profile in Japan.
139. The ratio of post-graduates leaving universities each year to normal graduates is a little over 10 per cent.
140. Ministry of Labour, *Minkan kyoiku kunren jittai chosa*, Tokyo, 1993, 1997.
141. Arnal *et al.* suggest that employment tenure can be affected by two conflicting forces: a change in industrial structure towards low tenure industries and an increase in tenure within industries. E. Arnal, W. Ok and R. Torres, *Knowledge, work organisation and economic growth*, OECD, Paris, 2001.
142. Ministry of Labour, *White Paper on Labour*, Tokyo, 1996.
143. Y. Higuchi, *Koyo to Sitsugyo no Keizaigaku*, Nikkei press, Tokyo, 2001.
144. Ohtake, 2000, "Special Employment Measures in Japan", *Japan Labour Bulletin*, December 2000.
145. For example, seven of the top ten companies by patent applications in the United States in each of the last five years were Japanese. US patents are used because of a break in the Japanese patent series after 1988. Since then more patents are required to protect the same intellectual property. Patents have been adjusted for quality by measuring the number of citations received by a patent from subsequently granted patents over four years, information that is available in the US data bank. See, L. Branstetter and Y. Nakamura, "Has Japan's innovative capacity declined", Forthcoming in M. Blomström, J. Corbet, F. Hayashi, A. Kashyap (eds.), *Structural Impediments to Growth in Japan*, NBER, 2002.
146. Porter *et al.*, *op. cit.* Underpinning this conclusion is econometric work which suggests that co-operative R&D projects did not yield productive outcomes when they involved close competitors (who presumably use a similar technology).
147. D. Guellec and B. van Pottelsberghe de la Potterie, "The internationalisation of technology analysed with patent data", *Research Policy*, 2001, 30.
148. *Gijutsu Yoran*, Tokyo, 2000.
149. M. Sakakibara and L. Branstetter, "Do stronger patents induce more innovation? Evidence from the 1988 Japanese patent law", *RAND Journal of Economics*, Vol. 32, 2001.
150. For a discussion as well as estimates of the value of R&D tax measures in the OECD see *Tax Incentives for Research and Development: Trends and Issues*, OECD, 2002.

151. An earlier study of marginal effective tax rates indicated much the same pattern and noted that short run R&D projects were more favourably treated in Japan as elsewhere. K. Gordon and H. Tchilinguirian, "Marginal effective tax rates on physical, human, and R&D capital", OECD Economics Department Working Papers, No. 199, 1998.
152. For a discussion of the advantages and disadvantages of various measures to support R&D, see OECD, *op. cit.* Although it is often claimed that tax measures are ineffective in raising R&D, this is not supported by more recent empirical evidence which suggests a short term elasticity of 0.16 but a long run elasticity of 1.1. See OECD, 2002, for references and N. Bloom, R. Griffith and J. van Reenan, "Do R&D tax credits work? Evidence from an international panel of countries 1979-1994", *The Institute for Fiscal Studies Working Paper*, W99/8.
153. The statutory business profits tax is 30 per cent for the central government and 9.6 per cent for local government. There is also a local residential tax amounting to 17.3 per cent of the corporate tax payments, but which is tax deductible. This leaves the effective statutory tax rate at 40.87 per cent.
154. The number of joint research projects between industry and universities increased by 29 per cent in FY 2000 to 4 029 while research commissioned by companies grew by 8 per cent to 6 368. However, the sums involved were not large.
155. For a summary see "Industry-science relationships in Japan", in *Benchmarking Industry-Science Relationships*, OECD, 2002.
156. Since April 2001 the NRIs have become administrative legal entities which will increase management flexibility. University reform is to be implemented from 2004.
157. 1 007 venture firms (42 per cent) replied to the questionnaire. A venture firm is defined as: introducing a unique technology or know how; achieving high growth in recent years; being relatively young or having recently changed its line of business.
158. The policy is meant to also cover private universities. However, a fundamental problem has not been addressed, namely, unlike public universities they are taxed on private research contracts.
159. Geographical agglomeration is important in most countries but Japan appears to be highly concentrated. In the United States, a much larger country, 380 local clusters are reported to produce approximately 60 per cent of the country's output. Opening speech by Donald Johnston, Secretary General of the OECD, at the World Congress on Local Clusters in 2001.
160. For a description of the local political dynamic which is oriented to obtaining central government projects regardless of how they could be used locally see A. Kerr, *Dogs and demons: The fall of modern Japan*, Penguin, 2001. The major deficiencies of the fiscal transfer system are documented in OECD, *Economic Survey of Japan*, 2000, Chapter III.
161. The new theories of growth and trade also point to the importance of geographical agglomeration. Knowledge spill-overs are often restricted geographically, leading to the spontaneous development of clusters around the world. This has led to numerous policy initiatives to create clusters.

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Annex I

Assessment of the government's structural reform programmes

This Annex reviews the government's reform programme in detail so as to support the overall assessment in the *Survey*. The measures of particular importance are discussed further in the text. Conversely, a number of less important measures are not covered in the text but are taken into account here. Tax reform measures are not considered due to their highly specific nature. The programme is assessed from two perspectives: the progress in implementation which simply checks what has and has not been done and; the degree to which the measures serve original policy goals. As for the *stage of implementation* (column "Progress"), the rating is 0 for the discussion stage, 1 for having a concrete plan, 2 for a preparatory stage of necessary legislation, and the maximum 3 for the passage of legislation. As for *fulfilling policy objectives* (column "Quality"), it is measured against the deviation from the objectives set in the June 2001 programme. The rating hence ranges from 0 for plans and legislation that are not compatible with original goals (all reforms at a discussion stage are automatically rated zero) to the maximum 3 for those that broadly meet original objectives. The ratings of 1 and 2 respectively represent large and small deviations from the June 2001 objectives. The distinction between 1 and 2 is inevitably somewhat arbitrary in some cases.

Reform objectives	Action	Progress	Quality
1. Privatisation and corporatisation of public service			
1. Review the roles of postal savings, insurance and mail-delivery services including the possibility of privatisation.	a) Laws for establishing public postal corporation passed the Diet. The entry barriers to mail delivery market are very high. The role of postal saving and insurance remains unchanged.	3	1
	b) There is no consensus on privatising this corporation, though the discussion continues.	0	0
2. Promote privatisation of public corporations and reduce subsidies to them.	Of 163 special-status public corporations, 17 are to be abolished, 45 to be privatised, and 38 to be made independent agencies. Specific reform plans are still under discussion. FY 2002 budget cut subsidies for public corporations by 1 trillion yen.	1	2
3. Review the function of public financial institutions.	a) The Government Housing Loan Corporation is to be abolished by FY 2006.	2	3
	b) Reform in other major public financial institutions is under consideration.	0	0

Reform objectives	Action	Progress	Quality
4. Enhance competition among the national universities through corporatising them and introducing private management technique.	National universities are to be corporatised in 2004 (see Chapter 4).	2	2
Comments: Reform of public corporations including financial institutions and privatisation of postal services should be accelerated. The entry requirements for basic postal services appear to be restrictive and the regulatory system needs to be clarified so as to limit the potential for the postal corporation to distort competition. The reform of public corporations should aim to reduce the scope of public intervention.		Average score: 1.3	Average score: 1.3
2. Deregulation			
1. Promote deregulation in general.	A revised three-year timetable for regulatory reform was adopted in March 2002.	3	2
2. Revitalise urban areas and improve commuting.	A new law is in force to allow private developers to manage city planning for designated sites regardless of existing regulations in urban areas. A quality assessment system for second-hand houses is to be introduced. Regulation requiring residents' unanimous support for rebuilding condominiums has been eased. Some public infrastructure projects in urban areas such as a new fast railway to Narita airport and an extension of circular roads are planned.	3	3
3. Encourage competition in non-profit areas including medical services and nursing care.	Private corporations are allowed to manage nursing homes and nurseries. Assessment by a third party is to be introduced for providers of elderly care and nursery services. Restrictions on advertisement of medical services have been eased. The review service of bills submitted by doctors has been opened to the private sector.	2	2
<i>New measures announced in the June 2002 programme (too early to be assessed).</i>			
4. Introduce "Special zones for structural reform" which allow local governments to ease regulations and to design their own reform measures.	A unit in charge of promoting special zones for structural reform has been established in the Cabinet Office.		
Comments: Deregulation for redevelopment in urban areas is a good move. The new proposal to allow "structural reform zones" is promising and needs to be developed quickly. But it should be seen as a first step to nation-wide regulatory reform.		Average score: 2.7	Average score: 2.3

Reform objectives	Action	Progress	Quality
3. Entrepreneurship, competition and openness			
1. Strengthen the Fair Trade Commission to enforce competition policy more vigorously.	a) Additional 40 staff are appointed by the FTC.	3	1
	b) Independence of the FTC secretariat from the Ministry is still under discussion.	0	0
2. Encourage competition in telecommunications sector by imposing asymmetric regulations on NTT. Promote open bidding for electromagnetic spectrum and for other public assets.	Asymmetric regulation on dominant carrier has been introduced. The law covering the electromagnetic spectrum has been revised to allocate frequencies more efficiently.	3	2
3. Open up unutilised capacity of optical fibre owned by the public sector and disclose information about the utilisation of cables owned by the private sector.	Unused optical fibres located under roads and rivers are opened up. Information about the utilisation of optical fibres owned by electric companies and railways has been disclosed.	3	3
4. Review commercial code so as to strengthen corporate governance	The diet has passed the revised commercial code, which allows replacing statutory auditors by board committees (audit, compensation, personnel), with the majority comprising outside directors.	3	1
5. Revise relevant laws for judicial system reform within 3 years. Revise bankruptcy and corporate restructuring laws by 2003.	a) Headquarter for judicial reform has been established at the cabinet. A plan for judicial reform has been proposed by the council.	1	2
	b) A draft of revised corporate restructuring law is to be discussed by the Diet by the end of 2002.	2	3
6. Review the system of rice production and distribution. Promote the entry of corporations into agricultural business.	A restriction on agricultural land area for rice producers is to be replaced by a production quota for regions in order to encourage enlargement of the production unit. Additional measures for easing the entry of corporations into agriculture are discussed.	1	2

Reform objectives	Action	Progress	Quality
<i>New measures in the June 2002 programme (too early to be assessed).</i>			
7. Promote FTA and inward FDI:	Although some of its components have already been planned as part of the judicial reform and the regulatory reform programme, the proposal for a Free Business Zone in East Asia is a new initiative and the details are as yet unknown.		
– Standardise institutions and rules to establish East Asia Free Business zone.			
– Facilitate the entry and employment of foreign engineers in strategic areas.			
– Restrictions on co-operation between foreign and domestic lawyers are to be eased by 2003.			
– Promote one stop service at the government to facilitate inward FDI.			
8. Ease barriers for start ups:			
– Ease the minimum requirement for capital.			
– Review the coverage of personal guarantees.			
Comments:		Average score: 2	Average score: 1.8
FTC should be encouraged to pursue criminal penalties and be given more investigative powers. Abuse of dominant power of NTT should be checked effectively. To extend FTA to Asian countries other than Singapore, it is important to reform the agricultural sector by promoting competition and by encouraging larger-scale operation.			

4. Health care reform

1. Improving efficiency in health care services:	A new health care reform plan has been adopted:	3	2
– Set a target on the growth of medical care expenditure.	– The eligibility age for the elderly insurance scheme is to be raised to 75 and above.		
– Standardise medical services including greater use of payments based on diagnostic related groups (DRG).	– Co-payments are to be raised (10 per cent for elderly and 30 per cent for SMEs employees).		
– Disseminate information and establish informed consent.	– Medical service fees for doctors have been reduced by 2.7 per cent.		
– Differentiate functions of hospitals and reduce excess beds.	– Restrictions on advertisement of medical services have been eased.		
– Modernise and improve the efficiency of health care provider management system.	– By FY 2004, more than 50 per cent of bills in all hospitals are encouraged to be submitted in electronic form.		
– Strengthen the role of insurers.	– The role of insurers as agents for patients is to be strengthened by asking private companies to check bills submitted by doctors.		

Reform objectives	Action	Progress	Quality
Comments: Progress has been made in health care reform, though measures for improving supply-side efficiency should be strengthened.		Average score: 3	Average score: 2
5. Pension and social security reform			
1. Establishing a sustainable pension system: – Review the current pension system to make it compatible with greater diversity of work arrangements and life styles. – Ensure intergenerational equity and balance of benefits and burden. – Decide specific measures to raise the tax financing of basic pensions to 50 per cent to ensure stable revenues. – Lift temporary suspension in raising pension contributions.	Pension reform measures are to be decided during the periodical review planned in 2004.	0	0
2. Introduce social security numbers and individual social security accounts.	A study of the experiences of other countries about social security numbers and individual social security accounts has been conducted.	0	0
Comments: The agenda for next pension reform should go beyond changing parameters and include ambitious measures to ensure the viability of the system in the face of changes in demographic and economic conditions.		Average score: 0	Average score: 0
6. Human capital and labour market			
1. Introduce competition among universities to foster world-class universities.	10 to 20 universities are to be selected as centres of excellence (COE) in 10 research areas to promote competition by allocating funds based on their performance.	3	1
2. Promote retraining of unemployed at universities and graduate schools.	The scope of subsidies for training has been expanded to cover vocational training courses at university and graduate schools.	3	2
3. Establish one-year courses at graduate schools and strengthen vocational courses at colleges (community schools).	Establishment of one-year vocational education courses at professional graduate schools was allowed in March 2002.	2	2
4. Increase labour mobility through: promoting training; easing restrictions on flexible work styles such as temporary work and fixed-term contract; enhancing job matching functions; and eliminating discrimination in employment by gender and age.	Lifting the ban on having dispatched workers in manufacturing sector is under consideration. Maximum term for middle-aged and elderly dispatched workers has been extended temporarily to 3 years. Private job placement services are allowed to collect charges from some job seekers.	2	2

Reform objectives	Action	Progress	Quality
5. Alter focus of taxation and social security system from families to individuals.	Tax reform planned in FY 2003 will reduce allowance for dependent spouses.	0	0
6. Boost measures to eliminate waiting list for nurseries to support working women.	Child care facilities are to be expanded to accept 50 000 more children by FY 2002 and 100 000 more by FY 2004.	3	2
Comments: More emphasis should be put on enhancing research capacity at universities and reducing barriers to collaborating with foreign institutions and individuals. The regulation which requires universities to hold open land should be eliminated. Although some progress has been made in labour market regulations, remaining restrictions on dispatched workers should be eased further. The use of private agents in job placement should be encouraged. Elimination of social security disincentives for spouses to increase their labour supply should be implemented as soon as possible.		Average score: 2.2	Average score: 1.5
7. More responsible local governments			
1. Promote mergers of local governments in order to improve efficiency.	Mergers of local government are promoted by some financial supports of central government such as: financing a part of initial costs arising from mergers; allowing the merged local government to receive lump sum grant from central government at the same level as before the merger; and allowing local governments to issue additional bonds to finance merger costs.	3	2
2. Allocate a local allocation tax (LAT) to local governments by setting objective standards.	Complex adjustment system for allocating LAT to local governments is to be streamlined gradually by FY 2004.	3	1
3. Review central government's share of contribution to local government administrative costs. Consider shifting tax revenues from central to local government and adopting a corporate tax based on sales and other factors to deal with low tax revenue facing local governments.	Introduction of a local corporate tax based on sales and other factors is discussed. The government is reviewing the revenue structure of local government including state subsidies, LAT and the allocation of tax resources between the central and local governments with a view to establishing a concrete plan by June 2003.	0	0
Comments: Huge transfers from central to local governments, which distort incentives for local government spending, need to be changed. The discussion about the reform of subsidies and grants from central to local governments should be accelerated.		Average score: 2.0	Average score: 1.0

Reform objectives	Action	Progress	Quality
8. Fiscal reform			
1. Aim at primary surplus as a medium-term goal. Prepare medium-term fiscal consolidation plan.	Medium-term economic and fiscal perspective aimed at achieving fiscal surplus by early 2010s has been adopted, though how to limit spending as a proportion of GDP is not specified.	3	2
2. Change budget formation process. Council for Economic and Fiscal Policy (CEFP) to propose broad direction of budget plan, while specific components of budget plan to be decided by Ministry of Finance.	CEFP has played the expected role in budget formation.	3	3
3. Reallocate spending to priority areas.	FY 2002 budget plan has allocated 2 trillion yen to priority areas, while 5 trillion yen was cut in general spending. FY 2003 reallocations not yet clear.	3	2
4. Review long-term public works projects. Lower public works spending in proportion to gross domestic product in the medium term.	a) FY 2002 and FY 2003 budgets have cut spending on public works by 10 per cent and by 3 per cent.	3	2
	b) Long-term plans for public works are being reviewed.	0	0
5. Reallocate earmarked road taxes.	A part of the revenue from road related taxes is now used for other purposes than road construction. Reallocation of earmarked revenue is being discussed in the context of a broader reform including public works and taxation.	1	1
Comments: The budget formation process and the outcome of FY 2002 budget are satisfactory though the 30 trillion yen ceiling on public bond issuance involved creative accounting. The medium-term economic and fiscal perspective is not sufficiently ambitious and lacks specific measures for containing spending to achieve a primary surplus. It needs to make use of shorter run real spending targets to improve credibility. The discussion about reallocating road taxes and reducing the size of road construction needs to be brought to a swift and successful conclusion.		Average score: 2.2	Average score: 1.7

Reform objectives	Action	Progress	Quality
9. Financial sector reform			
1. Dealing with non-performing loans (NPLs):	Financial revitalisation law was revised in December 2001 allowing RCC to participate in open bidding and to have flexibility in purchasing price. RCC has been permitted a trust banking licence. 100 billion yen has been funded by DBJ to set up funds, which purchase shares issued by restructuring companies. The funds will also purchase shares which banks obtained from borrowers through debt-equity swaps. Special inspection for major banks was conducted and the result was published in April 2002.	3	1
– Remove existing NPLs from balance sheet within 2 years and new ones within 3 years.			
– Encourage Resolution and Collection Corporation (RCC) to purchase NPLs by adopting fair value for purchasing price.			
– Request the Development Bank of Japan (DBJ), private investors and RCC to set up and/or participate in funds for corporate reconstruction.			
– Introduce a special inspection for major banks			
2. Encourage individual investors to participate in stock market by reviewing tax system.	Tax on capital gains has been based on self-assessment rather than a withholding system, and its rate has been reduced. Capital losses can be deducted from asset incomes for three years.	3	1
Comments:		Average score: 3	Average score: 1
See Chapter II for the assessment of the measures to deal with NPLs. New tax measures for capital gains are too complex to be used.			
10. Others			
1. Focus funds on four areas in allocating budget: life sciences, information technology, environment and nano-technology.	Supplementary budget for FY 2001 and budget for FY 2002 have allocated more funds to these four areas. Funds are also allocated to promoting knowledge-intensive clusters and fostering venture business at universities and technology licensing organisations (TLOs).	3	1
2. Encourage the use of ICT for administrative procedures.	A new law which promotes electronic submission of administrative documents has been prepared.	2	2
3. Reduce waste and create environmentally friendly society.	Private agents who have advanced skills in recycling and waste disposal are supported by subsidies and public loans. Government procurement favours environmentally friendly goods. Residents and NPOs are encouraged to promote waste reduction and recycling by disseminating information about the necessity to do something.	3	1

Reform objectives	Action	Progress	Quality
<i>New measure in June 2002 programme (too early to be assessed).</i>			
	4. Promote tourism and longer vacations		
Comments:	Ensure appropriate economic incentives in pursuing waste and recycling targets. Streamline government in order to allow effective use of ICT.	Average score: 2.7	Average score: 1.3
<i>Source:</i> Assessment by the OECD.			

*Annex II***Chronology of main economic events****2001****November**

The Diet passed the first supplementary budget for FY 2001, which included 1 trillion yen (0.2 per cent of GDP) of additional spending for employment measures and subsidies to public financial institutions for lending to SMEs.

The government decided to abolish seven major special-status public corporations including Japan Highway Public Corporation, the Government Housing Loan Corporation, and the Japan National Oil Corporation.

December

The Bank of Japan (BOJ) raised the target for the outstanding balance of the current accounts at the Bank from 6 trillion yen or above to 10 to 15 trillion yen and to increase outright purchase of long-term government bonds from 600 billion yen to 800 billion yen per month.

A framework for the consolidation of 163 special status public corporations was adopted by the government, of which 17 are to be abolished, 45 are to be privatised and 38 are to be made independent agencies.

The government adopted the second supplementary budget for FY 2001 including 2.6 trillion yen of additional spending for public works. The supplementary budget is financed by revenue which was obtained in the recent past by selling NTT shares held by the government.

The government adopted the draft initial FY 2002 budget, envisaging general expenditure (*i.e.* total expenditure less debt servicing and transfers to local governments) of 47.5 trillion yen, down from 48.6 yen in the previous initial budget, with new public bond issues limited to 30 trillion yen.

2002**January**

Japan and Singapore signed a FTA treaty (the Japan-Singapore Economic Agreement for a New Age Partnership).

Prime Minister began talks for a comprehensive tax reform in FY 2003.

The government adopted the *Structural Reform and Medium-term Economic and Fiscal Perspective for FY 2002 to FY 2006*, which illustrated the medium-term economic prospects and fiscal consolidation paths, including the introduction of a cap on spending as a proportion to GDP.

The government submitted the draft FY 2001 second supplementary budget and the draft initial FY 2002 budget to the Diet.

February

The Diet passed FY 2001 second supplementary budget.

The BOJ raised its outright purchase of long-term government bonds from 800 billion yen per month to 1 trillion yen.

The government adopted an anti-deflation package, which includes measures for accelerating disposal of non-performing loans and stabilising financial system as well as those for strengthening the security market regulations to curtail short-selling.

March

The Diet passed FY 2002 initial budget.

Council of Regulatory Reform adopted the regulatory reform plan for the next three years, which covers broad areas including social welfare, health, urban revitalisation, and education.

April

Protection on time deposits restricted to 10 million yen per depositor per bank since 1 April.

Financial Service Agency (FSA) published the result of the special inspection of large borrowers at major banks.

May

The government announced in its monthly economic report that the economy had reached the bottom of the cycle.

June

The government adopted a second anti-deflation package, proposing a reduction in inheritance tax and tax credits for business investment and R&D.

The government adopted the *Basic Policy for Economic and Fiscal Policy Management and Structural Reform 2002*, to update and revise the structural reform plan adopted in June 2001.

July

The Diet passed the laws for establishing a public postal corporation and setting the conditions for the entry of private agents into mail delivery services.

The Diet passed laws for reforming the health insurance system, which include measures such as a rise in the eligibility age for the elderly insurance scheme and an increase of co-payments (10 per cent for elderly and 30 per cent for SMEs employees).

August

The FSA announced the "Programme for Promoting Security Markets Reform" in order to encourage the participation of a wide range of investors.

The cabinet approved the guideline for FY 2003 budget requests, setting general expenditures at 48.1 trillion yen, slightly higher than in FY 2002 budget.

The committee for privatisation of road construction public corporations released its interim report, proposing a separation into several road operating companies and a road maintenance company.

September

The BOJ announced that it will purchase shares held by banks at market prices to help them reduce their holdings of shares to the level equivalent to their tier I capital.

Prime Minister Koizumi reshuffled his cabinet members and appointed Minister for Economic and Fiscal policy, Takenaka, as Minister for Financial services.

October

The FSA announced the postponement of the introduction of a cap on deposit guarantee until April 2005.

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BASIC STATISTICS OF JAPAN

THE LAND

Area (1 000 sq. km), 1995 Cultivated agricultural land (1 000 sq. km), 1995 Forest (1 000 sq. km), 1994 Densely inhabited districts ¹ (1 000 sq. km), 1995	377.8 51.3 251.4 12.3	Major cities, October 2000 estimate (10 000 inhabitants): Tokyo (23 wards) Yokohama Osaka Nagoya Sapporo Kobe Kyoto	813 343 260 217 182 149 147
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THE PEOPLE

Population, October 2001 estimate (1 000) Number of persons per sq. km in 2001 Percentage of population living in densely inhabited districts in 1995 ¹ Net annual rate of population increase (1995-2000)	127 210 337 64.7 0.2	Labour force in per cent of total population, October 2001 Percentage distribution of employed persons, 2001: Agriculture and forestry Manufacturing Service Other	53.1 4.5 20.0 61.2 14.3
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PRODUCTION

Gross domestic product in 2001 (billion yen) Growth of real GDP, 2001 Gross fixed investment in 2001 (per cent of GDP)	506 111 -0.2 25.7	Growth of real gross fixed investment, 2001 Net domestic product of agriculture, forestry and fishery, at producer prices, in 2000 (billion yen) Growth of industrial production, 2001	-1.9 5 092 -7.5
--	-------------------------	--	---------------------------

THE GOVERNMENT

Public consumption in 2001 (in per cent of GDP) Current public revenue in 2000 (in per cent of GDP) Government employees in per cent of total employment, 2001 Outstanding long-term national bonds in per cent of GDP (FY 2001)	17.5 29.4 8.4 78.1	Composition of Parliament, October 2002: Liberal Democratic Party Democratic Party Peace and Reform (<i>Komei</i>) Liberal Party Communist Party Others Vacancy Total Last elections	House of Representatives 239 124 31 22 20 38 6 480	House of Councillors 113 60 24 15 20 12 3 247 July 2001
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FOREIGN TRADE AND PAYMENTS (2001, billion yen)

Commodity exports (fob) Commodity imports (fob) Services Investment income Current balance Exports of goods and services in per cent of GDP Imports of goods and services in per cent of GDP	46 584 38 056 -5 315 8 401 10 652 10.4 9.8	Percentage distribution: OECD countries <i>of which:</i> North America Far East Other Total Crude material and fuels (SITC 2, 3, 4) Semi-manufactured goods (5, 6) Machinery and transport equipment (7) Other (0, 1, 8, 9) Total	Exports 58.7 33.0 34.0 7.3 100.0 1.2 17.8 67.3 13.7 100.0	Imports 45.0 21.1 37.5 17.5 100.0 26.8 15.9 27.3 30.0 100.0
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THE CURRENCY

Monetary unit: Yen	Currency unit per US\$, average of daily figures: Year 2001 September 2002	121.5 120.8
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Note: An international comparison of certain basic statistics is given in an annex table.

1. Areas whose population density exceeds 5 000 persons per sq. km.

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of Member countries.

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The economic situation and policies of Japan were reviewed by the Committee on 14 October 2002. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 30 October 2002.

•

The Secretariat's draft report was prepared for the Committee by Grant Kirkpatrick and Hideyuki Ibaragi under the supervision of Yutaka Imai.

•

The previous Survey of Japan was issued in December 2001.



From:
OECD Economic Surveys: Japan 2002

Access the complete publication at:
https://doi.org/10.1787/eco_surveys-jpn-2002-en

Please cite this chapter as:

OECD (2002), "Human Capital, Technology and Sectoral Policies for Growth", in *OECD Economic Surveys: Japan 2002*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/eco_surveys-jpn-2002-6-en

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