ECONOMIC AND PUBLIC SECTOR RESTRUCTURING IN JAPAN

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This paper focuses on several aspects of economic deregulation, privatization and amakudari. Two broad questions are raised with respect to deregulation: what is the expected size of the macro-economic benefits; and whether the economic restructuring they induce are of a first-order magnitude compared to 'naturally occurring' economic restructuring. With respect to privatization, interest focuses on the issues of when in the privatization process do efficiency gains occur; and what sort of bank-firm relationships are observed for the newly privatised firms. The discussion of amakudari examines the impact of economic deregulation and administrative reform on the supply of and demand for amakudari.

Keywords : Administrative reform; amakudari; deregulation; economic reform; efficiency; privatisation.

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1. Introduction

Discussion of reform, both administrative and economic, currently holds centre stage in Japan. For example, Prime Minister Hashimoto has identified six key areas of reform: administrative reform, education reform, economic structural reform, financial system reform, fiscal reform and social insurance reform, and has foreshadowed the prospect of "big bangs" for both the financial system and the bureaucracy.

The current debate in Japan on deregulation and public restructuring rages over a broad field and many issues. For example, deregulation proposals made by a task force of the Administrative Reform Committee in 1996 cover a wide range of areas including financial services, legal services, transportation, telecommunications, and employment. Issues raised in the recent debate on public sector restructuring in Japan have included: the hiring practices of government ministries (centralized hiring vs the current method of ministry by ministry hiring); decentralization of administrative authority and revenue raising authority from the central government to local governments; increasing the independence of the Bank of Japan; a rationalization of the fiscal and investment loan program (FILP)(see Tsuji (1996)); restructuring the Ministry of Finance; and the rationalization and abolition of government corporations (tokushu hojin). The debate on restructuring the Ministry of Finance has centred on whether the Ministry of Finance should continue to have responsibility for the inspection and supervision of financial institutions or whether that responsibility should be given to a newly created agency.

Several deregulation plans have been announced in September 1993 (107 items), February 1994 (798 items), July 1994 (308 items), March 1995 (1091 items) and March 1996 (569 items) covering a broad spectrum of industries including housing and land, transport, information and telecommunications, the distribution system, finance, insurance and pollution. According to the government's own self evaluation, significant progress has been made towards implementing most of the proposals (see Management and Coordination Agency (1996, Tables 3-3, 3-6, 3-7)). While many of the items might be criticized as being minor and technical in nature, some measures like revisions to the Large Department Store Law, the liberalization of imports of refined petroleum products (see the Appendix for a brief empirical analysis) and the granting of permission for electric companies to buy power from outside sources have been viewed as being important (see OECD (1996)).

The discussion in this paper will focus on three aspects of this debate: economic deregulation, privatization and amakudari. Two broad questions are raised with respect to deregulation: what is the expected size of the macroeconomic benefits; and whether the economic restructuring they induce are of a first-order magnitude compared to 'naturally occurring' economic restructuring. With respect to privatization, interest focuses on the issues of when in the privatization process (including deregulation and new competition) do the efficiency gains occur; and what sort of bank-firm relationships do we observe for the newly privatised firms. The discussion of amakudari examines the impact of economic deregulation and administrative reform on the supply of and demand for amakudari in the light of recent academic research in this area.

The paper is structured as follows. Section 2 discusses economic restructuring and deregulation. Two aspects of public sector restructuring, privatization and amakudari, are examined in sections 3 and 4, respectively. Section 5 contains some brief concluding remarks.

2. Economic Restructuring: 'Natural' and Deregulation Induced

The economist's standard simple analysis of the impacts of effective regulation in the form of pricing rules or entry barriers is that the regulation causes higher prices, lower output and deadweight losses. Depending on the regime, managerial efficiencies leading to excessive use of labour and/or capital may also occur. While income transfers between producers, consumers, the government, factors of production (land and labour) or owners of factors of production typically occur as a result of regulation/deregulation, from a macroeconomic perspective what is most important is the aggregate deadweight or welfare losses and gains that are generated. If any of the agents are subject to liquidity constraints, the income transfers by relaxing or strengthening those constraints may have an additional impact as well. But what are the sizes of the losses generated?

Macro-Impact of Deregulation

If regulation in an industry is limited to pricing regulation or entry barriers, the Japanese Economic Planning Agency (EPA) suggests that in 1993 something like 41% of the total value added in Japan was produced in "regulated" areas of the economy. Industries with a very high share of regulated areas include agriculture, fisheries, forestry, mining, construction, finance, transport, electricity, gas and water (see OECD (1995, p. 113)). These figures probably grossly overestimate the impact of regulation since the existence of any law on pricing and/or entry for an industrial category in the Input-Output Tables is treated as applying to the whole industry. In addition, the existence of formal regulation on pricing or entry may have little or no effect or may be administered in such a way as to have little or no effect as Flath (1996) suggests is the case for trucking and as Anderson (1996) suggests when he argues that effective regulation for airlines is quite different to the nominal regulation.

The EPA has estimated the impact of full implementation of the structural reforms proposed in the government's mid-term economic plan (covering fiscal year 1995 to fiscal year 2000) released in December 1995 to be the equivalent of a change in the annual average real growth rate of gross domestic product of 1.25% per annum over the 5 year period (see Kaneko (1996)). Put differently, the cost of not implementing the reforms in terms of forgone output over the five year period is something like 6% of GDP (assuming these growth differences extend out further over time, the net present value of the cost using any reasonable discount rate would be far higher). Although structural reform might be expected to reduce the growth rate of prices, the EPA estimates that consumer prices and wholesale prices would rise as a result of the structural reform by 0.25% and 0.5% per annum, respectively. In June 1997, the Economic Planning Agency produced an updated estimate of the macroeconomic impact of the reform packages announced in December 1996, March 1997 and May 1997 (see Economic Planning Agency (1997)). It estimated the impact of these reform packages as being the equivalent of a change in the annual average real growth rate of gross domestic product of 0.9% per annum over the 5 year period from fiscal year 1998 to fiscal year 2003. A failure to implement the reforms was estimated to lead to real gross domestic product being 5.8% lower in 2003 than if the reforms were fully implemented. Unlike the earlier EPA estimates, this time it was estimated that as a result of increases in productivity consumer prices rises would be on average 1.2% lower, and at the end of the five year period the level of consumer prices would be 7.3% lower if the reforms were implemented. A Ministry of International Trade and Industry Study Group estimated the macroeconomic effect of economic reforms in five areas (including distribution, energy, finance, and telecommunications) to lift real GDP by 6.0% and reduce consumer prices by 3.4% by the year 2001.

The macroeconomic impact of any deregulation package is likely to depend on many factors including: the size, scale and coverage of the package; the time period over which it is to be implemented; the extent to which the economy has well developed and well functioning economic institutions and markets; the extent to which existing regulation actually bite (in the form of generating welfare losses rather than income transfers); and the extent to which attempts are made to cushion the adjustment to change (for example, the massive allocations to agriculture in the wake of the Uruguay Round agreement). The experience of drastic economic reform in China, South America, Eastern Europe and Russia indicate cases where there are large impacts (see, for example, Edwards (1993), Rodrick (1996) and World Bank (1996)) while the revolutionary New Zealand experience does not suggest significant impacts in terms of economic growth (see, for example, Evans et al. (1995) and Mulgan (1997)). My personal view is that when we examine the content of the five year plan the numbers for the growth rates significantly overestimate the likely impact of deregulation, especially given the vague contents of the five year plan (Tsuji (1997) contains a more positive evaluation of the Economic Planning Agency's simulation).

Koedijk and Kremers (1996) provide indirect supportive evidence for significant positive growth impacts as a result of deregulation in their examination of the relationship between economic growth (and productivity growth) and measures of product market regulation and labour market regulation for European countries. Their statistical evidence strongly suggests that there is a significantly significant negative relationship between growth (and productivity growth) and product market regulation (and a less stronger relationship for labour market regulation). Given that Japanese regulation is principally product regulation, this also suggests a strong macroeconomic impact of deregulation. One important limitation of the study is that Koedijk and Kremers (1996) do not take into account any other factors that may contribute to economic growth.

It is worth noting that in the post-war period Japan's highest rates of economic growth occur in a period when product market regulation was perceived to be far more prevalent than it is today (see Ito (1992) for a summary discussion of the factors contributing to Japan's high post war economic growth). Anecdotal evidence on the economic experience in the United Kingdom going from a stagnant economy prior to the election of Thatcher to a vibrant economy following the reforms introduced by the conservative government under Thatcher is often used in Japan to support the benefits of deregulation.

I do not deny that regulation is important in particular areas, and that deregulation will bring about significant benefits to consumers and improvements in managerial efficiency as is illustrated in section 3. I am sceptical about how large the macro impacts of deregulation are likely to be and whether their impacts are really of a first order magnitude. In his comprehensive analysis of the impact of twenty or so years of deregulation in the United States (focused particularly on airlines, trucking, railways and telecommunications), Winston (1993) estimates the overall welfare gain from this deregulation to be of the order of $36-$46 billion per year (1990 dollars), which he suggest is something like a 7-9 percent improvement in the part of GNP affected by reform. However, when compared to total US GNP it is rather small. Based on research by Morrison and Slesnick (19987), Winston (1994) suggests that if optimal deregulation in the natural gas industry were implemented, the welfare benefit would be of the order of $4 billion per year (1990 dollars). The suggested outcomes for Japan seem very large compared with these estimates.

'Natural Restructuring'

When restructuring is examined in Japan, one is left wondering about the relative importance of economic restructuring through natural economic forces and deregulation. Have economists been focusing their attention on the wrong thing? For example, the severe changes in nominal and real exchange rates that have occurred since the shift to floating exchange rates (especially for Japan) and the resource allocation effects they have caused make arguments about small changes in tariffs seem to be of second-order importance. Some of the 'natural forces' promoting economic restructuring in Japan are: the low rates of economic growth in the 1990s; the bursting of the speculative bubble of the late 1980s; a significant real appreciation of the yen; bankruptcies of large firms in the construction and finance industries in 1997; and demographics. For example, two important demographic forces are: the rapid aging of the population and the reduction in the absolute size of the population of university age. The former creates increasing demands for services required by the aged like old age homes and medical assistance, and the latter is inducing a welcome and long overdue impetus to more intensive competition among universities for students.

Over the period from the 1970s to the 1990s, there have been significant changes in the shares of employment and output in various sectors of the economy. Agriculture's share of GDP has fallen from 5.9% in 1970 to 2.1% in 1993, and its share of total employment has fallen from 19.7% in 1970 to 8.0% in 1993.

Similarly, manufacturing industry's share of GDP has fallen from 34.8% in 1970 to 25.81% in 1993, and its share of total employment has fallen from 26.7% in 1970 to 23.1% in 1993. Reductions in the absolute numbers employed in agriculture and manufacturing industry have occurred. Overseas direct investment by Japanese firms has moved significant amounts of production overseas particularly in manufacturing industry. In the five year period between 1989 and 1994, the percentage of manufacturing output produced overseas has risen from 5.7% to 8.6%, with spectacular increases in the percentage of manufacturing output produced overseas occurring for petroleum refining (from 0.2% to 5.1%), chemicals (from 5.1% to 8.1%) and transport machinery (from 12.6% to 20.3%) (see OECD 1996, p. 30)).

Patrick (1995) argues forcefully that natural forces have and are likely lead to important changes in the three Japanese-style institutions: life time employment; main bank-firm relations; and supply assembler relations. There is also survey evidence to suggest that these three institutions are changing. For example, both large and small firms perceive that the importance off main banks is lessening (see OECD (1996)) and a recent survey of firms suggest they wish to move away from life time employment (see Kaneko (1996)). The bankruptcy of the Hokkaido Takushoku Bank in 1997 and the precarious financial position of some large banks may lead some companies to further reduce their main bank ties.

The public sector is not insulated from these forces. Low (or close to zero) growth rates create two difficulties in cutting the government deficit - lower tax revenues as well as the political pressure for fiscal stimulation. Part of the Japanese government's ability to achieve a zero budget deficit for the general budget in 1990 related to better than expected tax revenues during the bubble period (see Asako, Ito and Sakamoto (1991)). The situation did not last long so that in 1994 the central government's actual deficit was around 3.5% of GDP. The aging of the population is also having a significant on government spending, and spending on health in particular (see EPA (1996a)).

3. Privatization

In the Japanese debate on privatization, the term 'privatisation' has three meanings: first, the conversion of public corporations into stock companies (here referred to as corporatisation); second, the reorganization of public corporations into 'Chartered Corporations'; and, third, a change in the ownership of public enterprises to full (or partial) private ownership (here referred to as privatization) (Uekusa (1994a)). Japan's 'privatisation' experience has involved five organizations: Japan Airlines (JAL), and four public corporations, Nippon Telegraph and Telephone Public Corporation (NTT), Japanese National Railways (JNR), Japan Tobacco & Salt Public Corporation (JTS), and the Okinawa Electric Public Corporation (OE). With the exception of OE, significant inefficiencies in the other four entities are commonly suggested as one important reason for rearranging their internal structure and altering their external environment. Uekusa (1994a) suggests that inefficiencies in the running and management of three public corporations, NTT, JNR and JTS, could be attributed to factors that include: restrictive regulation of management; political interference and the politicization of regulation; a lack of competition and a rigid government accounting system. King (1997) provides a perspective on the Australian privatization experience that has quite a few interesting parallels.

In the case of those three public corporations, NTT, JNR and JTS, they were first converted into stock companies (or in the case of JNR a number of stock companies), some shares were then sold to the public, and finally the shares were listed on the stock exchange. In addition, the process for all entities (except OE) has involved significant management changes, deregulation, competition and ownership changes. The process for Okinawa Electric is quite different and will be discussed in detail later. Of the five entities, only two, JAL and Okinawa Electric, are now fully privately owned (although in the case of Okinawa Electric, the Governor of Okinawa is the top shareholder with a shareholding of 4.96%: see Table 1). While the initial reasons for public ownership of JNR and NTT could be related to problems associated with natural monopolies and development externalities, public ownership of JTS would seem to be related to the protection of an agriculture industry and securing a valuable and stable revenue source for the government over and above the revenue earned by taxing cigarettes. A brief explanation is given of

Table 1: Okinawa Electric: Shareholders and Lenders

	1992	1993	1994	1995	1996
Governor of Okinawa	4.96	4.96	4.96	4.96	4.96
Bank of Ryukyu	4.76	4.80	4.80	4.80	4.80
	0.14	0.14	0.14	0.11	0.08
Bank of Okinawa	4.77	4.77	4.77	4.77	4.77
	0.14	0.14	0.14	0.11	0.09
Employees Stockholding Assoc.	2.84	2.88	3.01	3.25	3.57
Kokuba Gumi	3.28	3.41	3.28	3.28	3.28
IBJ	3.19	3.19	3.19	3.19	3.19
	2.26	2.05	1.87	1.54	1.34
Nippon Life	2.95	2.95	2.95	2.95	2.95
Daiichi Life	2.95	2.95	2.95	2.95	2.95
Okinawa Kaiho Bank	2.30	2.30	2.30	2.30	2.30
Daido Accident					2.19
Ota Norio	2.17		2.17	2.17	
Chase (London)	2.23				
SHARES (100s)			14728	14728	14875
LOANS (billion yen)	144	188.7	222.1	242.1	244.4

Source : Toyo Keizai Shinbunsha, *Kigyo keiretsu soran*, various issues.

Note : For each entity, the top entry for each year is its share holding as a percentage of the issued shares and the lower entry is its loan share as a percentage of the loans outstandling.

some of the key features of the privatization of each of the five enterprises.

Japan Airlines (JAL)

Japan Airlines was fully privatised in November 1987 when the government sold its 34.54% shareholding in the company (see Table 2). Uekusa (1994a) suggests that privatization of JAL aimed at raising the internal organizational efficiency of the enterprise by reforming labour-management relations, eliminating the politicization of upper management appointments, and eliminating the politicization of regulation. Prior to 1986, JAL was the sole Japanese airline authorized to carry passengers on international routes. With the exception of All Nippon Airways (ANA) being per-

Table 2: Japan Airlines: Shareholders and Lenders

	1985	1986	1987	1988	1989
Ministry of Finance	35.37	34.54	34.54	0.00	0.00
Tokio Marine & Fire Insur.	2.77	2.71	2.71	3.13	2.98
Osano Kenji	2.27	2.22			
Dowa Accident Insurance	2.55	2.49	2.49	2.72	2.59
Industrial Bank of Japan	1.79	1.80	1.80	2.76	2.68
	26.61	29.52	21.93	12.77	15.78
Yasuda Accident Insur.	2.22	2.16	2.16	2.41	2.30
Employees Shareholders Assoc	2.00	1.61	1.32	1.22	1.22
Daiichi Kangyo Bank	1.22	1.25	1.25	1.91	1.86
	12.14	11.33	7.15	6.93	3.25
Kinki Nihon Railway	1.07	1.05	1.05	1.26	1.21
Hankyu Railway	1.05	1.03	1.03	1.10	
Nichido Accident Insur.	1.28	1.26	1.26	1.37	1.31
Sumitomo Accident Insur.	1.40	1.36	1.37	1.50	1.43
Fukoku Life Insur.	1.67	1.63	1.63	2.37	2.33
Nippon Group Insur.	1.70	1.56	1.43	2.39	2.38
Kokusai Kogyo			1.97	2.12	2.01
Nippon Life Insur.			0.97	2.20	2.24
			3.90	2.62	
SHARES (100s)	135977	139246	139246	139246	156484
LOANS (¥billions)	79.3	90.1	140	202.2	208.8

Note : see notes for Table 1.

Source : Toyo Keizai Shinbunsha, *Kigyo Keiretsu Soran*, various issues.

mitted to operate on some international routes in 1986, most deregulation in the airlines industry comes after the privatization of JAL. Currently, the entry of new carriers into the domestic market and the expansion of services by existing carriers is heavily restricted. Competition on international routes has forced significant changes in fares on these routes. Despite the appearance of a very heavily regulated fare structure for domestic travel, Anderson (1996) suggests that, in practice, fares are far less regulated and there is far more competition than is often thought. However, actual fares are still quite high compared to US fares (see Anderson (1996)), and average prices and costs of domestic airline services in Japan are higher than the average of 19 country sample of nineteen advanced countries (see EPA (1995, p.75)). Capacity constraints at Haneda, Narita and Itami represent a significant barrier to expansion of services using these airports. Over the period 1977 to 1996, the number of employees in JAL has been relatively stable around the 20-21 thousand mark despite a significant expansion of its operations.

Japan Tobacco (JT)

The Japan Tobacco & Salt Public Corporation was established in June 1949 with the sole right to produce tobacco (and salt) in Japan. It was converted to a stock company, Japan Tobacco (JT), in April 1985 but maintained its monopoly on the domestic production of tobacco. Given the well-known comparative disadvantage that Japan has in the production of agricultural goods, it is unlikely that tobacco is any different. In fact, Uekusa (1994a, p. 320) suggests that the relative price of domestic produced to foreign produced tobacco is something like three to one, and that revenue from the tobacco operations of JTS was used to provide a substantial cross-subsidization of its salt-related activities. The value of this 'monopoly' is not altogether obvious since imports of tobacco have been permitted from around the time of privatization and imports have a market share over 10%. Contrary to the usual case where shareholders are likely to suffer with deregulation, an elimination of the requirement that JT purchase all the expensive domestic tobacco would likely to be a great benefit to existing shareholders. In addition, there has been some relaxation of the regulations governing the distribution and retailing of tobacco products. The aims of the new stock company include 'promoting the healthy development of the Japanese tobacco industry and securing a stable source of fiscal revenue' (see Administrative Management Agency (1992, p. 168)). The labour force of the company has been significantly reduced over time from 40,699 in 1981, 36,959 in 1985, 27,833 in 1989 to 24,150 in 1992 suggesting that significant management improvements have occurred in the process of preparing for stock exchange listing. Since listing, the total number of employees of the company seems to have stabilized at around 23,000. In October 1994, the government offered one third of the shares in the company for sale to the public but only actually succeeded in selling about 60% of those shares. Despite this failure to sell all the shares on offer, the sale raised 566.9 billion yen in revenue far in excess of the forecast revenue of 278.8 billion yen expected from selling all the shares on offer. Currently, the Minister of Finance holds 80.88% of the

Table 3: Japan Tobacco: Shareholders and Lenders

	1994	1995	1996
Minister of Finance	100	81.88	80.88
Employees Stockholding Assoc.		0.46	0.66
Mitsubishi Trust Bank		0.24	0.44
Sumitomo Trust Bank		0.24	0.32
Toyo Shintaku Bank		0.21	0.28
Fuji Bank		0.21	0.45
		0.16	
Daiichi Kangyo Bank		0.20	0.44
Daiichi Life Insurance		0.18	0.39
Industrial Bank of Japan		0.18	0.28
Norin Chukin		0.18	
		0.25	
Sakura Bank			0.23
Nippon Life Insurance			
			26.11
SHARES (100s)	2000	2000	2000
LOANS (¥billion)		11.7	11.5

Note : see notes for Table 1.
Source : Toyo Keizai Shinbunsha, *Kigyo Keiretsu Soran*, various issues.

outstanding shares in the company (see Table 3).

Akioka (1993a) provides a very interesting attempt to measure the impact of privatization (in the form of the conversion of a public corp oration into a stock company [corporatisation]) on firm behaviour by estimating a translog cost function for Japan Tobacco that covers both the pre-privatization and post-privatization regimes. His sample of annual data runs from 1955 to 1989 giving a total of 45 observations but importantly excludes the period when the shares were sold. Akioka (1993a) attempts to determine if the corporatisation in 1985 brought about any significant reduction in corporate costs by testing the significance of a zero-one dummy in the translog cost function. No statistically significant reduction in costs is observed (one equation suggests costs rise and another suggests costs fall but neither effect is statistically significant at any reasonable significance level). It should be noted that: no allowance is made for possible technical innovation in the tobacco processing that may have affected costs; only the cost function (but not the share equations for the input factors) was estimated; and if the company is in fact minimizing costs after corporatisation and not just before then it is possible that not just total costs but the usage of factor inputs, labour, capital and tobacco leaf, may have been affected.

Japan National Railways (JNR)

JNR's poor managerial performance prior to its corporatisation is usually attributed to: the lack of incentives for efficient management, strong labour unions, JNR's huge size, political intervention and regulation (see Fukui (1992), Uekusa (1994a) and Takeuchi et al. (1997)). JNR was making very large annual losses around 2 trillion yen/year and had a huge accumulated debt of over 20 trillion yen. Most lines were running at a loss.

The corporatisation of the JNR in April 1987 involved splitting the public corporation into nine entities: six passenger railway companies each operating in particular geographic regions, a freight company operating nation-wide, the Shinkansen Holding Organization, and the JNR Settlement Corporation. The six regional companies are JR East, JR West, JR Hokkaido, JR Shikoku Railway, JR Tokai and JR Kyushu. The JNR Settlement Corporation originally held all the shares in the other companies, together with surplus real estate and a major portion of JNR's debt. To date, only shares in East Japan, West Japan and JR Tokai have been listed on the stock exchange in October 1993, October 1996 and October 1997, respectively. The initial share issues for East Japan and West Japan raised 732.2 billion yen and 480.0 billion, respectively. Although the initial issue of West Japan was intended to dispose of 85% of the outstanding shares with an anticipated revenue of 6-700 billion yen, only 63% of the shares outstanding were actually sold. All revenue from these share sales is to be used to reduce the outstanding liabilities of the JNR Settlement Corporation estimated at around 28 trillion yen! The Settlement Corporation still holds 37.94 of the shares in East Japan (see Table 4) and 37% of the shares in West Japan. Proceeds of sales of surplus land held by the Settlement Corporation are also to be used to payoff the existing liabilities of the Corporation. Any reasonable estimate of the value of the assets held by the Settlement Corporation suggests they fall significantly below the outstanding liabilities of the Corporation. Significant reductions have been achieved in the total work force of the JNR group which is consistent with Fukui's (1992) detailed study of the JNR privatization experience indicating significant improvements in managerial efficiency occurred prior to 1992. EPA surveys consistently find that train fares are higher in Japan than in the United States (see Asahi Shinbun (1996)). Political interference with respect to the investment plans are still an important problem as is illustrated by recent decisions regarding the construction of new shinkansen lines.

Nippon Telephone and Telegraph (NTT)

Takano (1992) suggests that the following factors were important in leading to the privatization of NTT: sizeable government deficits; the realization of universal telephone services; significant technical innovation; and management inefficiency (see also Uekusa (1994a)). NTT was converted into a stock company in April 1985 and listed on the stock exchange in

Table 4: East Japan Railway: Shareholders and Lenders

	1993	1994	1995	1996
JNR Settlement Corp.	100	39.43	38.25	37.94
Employees Stockholding Assoc.		1.73	2.45	2.82
Mitsubishi Trust Bank		0.97	1.71	2.52
		4.53	3.87	3.77
Industrial Bank of Japan			1.50	1.50
		5.02	4.94	5.02
Fuji Bank		1.50	1.50	1.50
		4.71	4.75	4.93
Daiichi Kangyo Bank		0.75	1.50	1.55
		4.67	4.71	4.93
Mitsubishi Bank		0.65	1.50	1.50
		4.55	4.59	4.93
Sanwa Bank			1.25	1.50
		3.81	3.84	4.03
Mitsubishi Trust Tokkin		0.60	1.14	
Mitsui Trust Bank		0.71	0.91	1.09
		4.06	3.84	3.77
Daiichi Life Insur.				1.12
		2.84	2.82	2.59
Yasuda Kinsen		0.65		
Sumitomo Life Insur.		0.54		
Sumitomo Trust Bank		0.54		
		1.60	1.45	1.33
Japan Development Bank				
		24.68	26.90	27.80
SHARES (100s)		4000	4000	4000
LOANS (¥billion)		1232	1275	1349

Note : see notes for Table 1.
Source : Toyo Keizai Shinbunsha, *Kigyo Keiretsu Soran*, various issues.

February 1987. Three sales of government held shares over the period 1986-8 raised a total of 10 trillion yen in revenue that was primarily used to reduce the outstanding amount of government bonds. The sales have reduced the government's share holdings to 65.53% (see Table 5). At the same time or later, some competition was introduced for long distance, local and cellular services so that now in addition to NTT, there are 3 long distance operators, 16 local service operators, and 90 mobile service operators (see EPA (1996a, p. 366)). Consumers have benefited greatly as a result of significant real reductions in rates for long distance, mobile, and international services. One common criticism of the NTT privatization is the failure to undertake a rebalancing of rates for local calls vis-a-vis long distance calls (see, for example, Takano (1992)). The EPA (1996a, p. 368) estimates that the combination of

Table 5: NTT: Shareholders and Lenders

	1986	1987	1988	1989	1990	1992	1994	1995	1996
Minister of Finance	100.00	91.54	77.53	67.46	66.25	65.78	65.62	65.59	65.53
Sumitomo Life Insurance		0.16	0.33	0.46	0.46	0.47	0.46	0.43	0.34
				2.54		3.54			
Sumitomo Trust Bank		0.14	0.40	0.56	0.36	0.41	0.34	0.38	0.45
		1.34	1.87	1.79	2.40	2.84	1.93	1.31	0.71
Toyo Trust Bank		0.14	0.35	0.57	0.47	0.33	0.22	0.29	0.29
		0.87	1.21	1.15	1.54	1.71	1.04	0.69	0.21
Chuo Trust Bank		0.13	0.28	0.32				0.32	0.32
Yasuda Trust Bank		0.11	0.36	0.43			0.23		
		1.08	1.55	1.46	1.85	2.05	1.22	0.77	1.09
Mitsubishi Trust Bank		0.10	0.56	0.71	0.53	0.69	0.51	0.56	0.52
		1.37	1.78	1.60	2.24	3.26	2.65	2.06	2.62
Yasuda Trust Kinsen		0.10							
Mitsui Trust Bank		0.09	0.25			0.29	0.30	0.30	0.27
		5.96	3.23	2.93	3.37	3.04	0.98	0.90	0.71
Employees Shareholding Assoc.		0.08		0.36	0.51	0.82	0.97	0.97	1.02
Nippon Life Insurance			0.28	0.51	0.54	0.53	0.53	0.53	0.53
		7.84	5.31	5.20	5.57	5.65	6.92	6.18	6.38
Export-Import Bank									
		7.89	2.40				7.13	11.76	11.91
Japan Securities Settlement			0.46		0.30				
Daiichi Life Insurance				0.50	0.50	0.50	0.47	0.47	0.46
				3.90		5.10			
Norin Chukin					0.48	0.37			
					4.87		3.31	2.42	1.93
SHARES (100s)	15600	15600	15600	15600	15600	15600	15600	15600	15912
LOANS (¥billion)		172	566	681	801	868	715	736	915

Note : see notes for Table 1.

Source : Toyo Keizai Shinbunsha, *Kigyo Keiretsu Soran*,various issues.

corporatisation, deregulation and competition have also led to significant increases in both capital and labour productivity in NTT (see also Takano (1992)). A notional 'break up' of NTT into two regional local carriers covering East Japan and West Japan has recently announced.

While Uekusa (1994a) argues that the privatization of NTT (and other public corporations) has been extremely successful in making NTT more efficient, Lincoln (1996, p. 250) suggests that NTT is still a 'quagmire of inefficiency'. The significantly higher cost of long distance phone calls and the base rate for cellular phones in Japan compared to the United States and the United Kingdom found in a recent EPA survey is suggestive of there being further room for efficiency improvement (see Asahi Shinbun (1996)). Baily (1993) also suggests that productivity in the Japanese telecommunications significantly lags behind that in the United States.

Okinawa Electric (OE)

An investigation of Okinawa Electric highlights many of the interrelated aspects of economic regulation, amakudari, privatization, and rationalization of government institutions. The American occupation of Okinawa from the end of World War II until May 1972 makes the history of Okinawa Electric quite different from the history of the other nine major power companies that were all established in the early 1950s. Geography is also important in two ways: Okinawa is physically separated from the rest of Japan; and Okinawa is itself made up of 40 or so islands that are also physically separated by quite significant distances. Given the obligation imposed by Article 18 of the Electric Power Business Law on a power utility to provide electricity to all users in its area (see Kishimoto (1994)), this geography affects the extent to which it is possible for Okinawa Electric to reap the economies of scale that are suggested to exist in electric power generation (see Jorgenson (1986, pp. 1893-1897) and Sing (1987)). It also necessarily means there is a significant degree of cross subsidization by users on the main island of Okinawa of those users in outlying islands where electricity generation is typically performed on a loss running basis. Okinawa's current total electricity supply capability of 1720 mW is one third the size of its next smallest company, Hokkaido Electric, and one nineteenth the size of the largest company, Tokyo Electric. In addition, it reserve capability (= supply capability - maximum August demand) to maximum August demand at 24.2% is more than double any of the other power utilities (see Agency of Natural Resources and Energy (1996)). Unlike the other power utilities which have access to the national power grid and so can utilize excess capacity in other parts of the country, Okinawa Electric has no such possibilities[1].

On the return of Okinawa to Japan, three options were considered for the generation of power that was previously performed by Ryukyu Electric: the establishment of a publicly owned company that would essentially take over completely the functions and responsibilities of Ryukyu Electric; the merging of Ryukyu Electric with Kyushu Electric; and the merging of Ryukyu Electric with Tokyo Electric. The first option was adopted.

Okinawa Electric was established as a stock company on 15 May 1972, the day of Okinawa's return to Japan, with capital provided by the Minister of Finance and the Governor of Okinawa Prefecture, and those two individuals as the only shareholders. In 1976, separate electricity transmission companies were acquired and absorbed into Okinawa Electric making it the sole electric power utility in Okinawa. In 1988, most of the shares in the company were sold to the public and shares were listed on the over-the-counter market (see Suzuki (1987, pp. 138-139) for a discussion of this market). In February 1992, Okinawa Electric's shares were listed on the second board of the Tokyo Stock Exchange.

Following a similar approach to Akioka's (1993a) analysis of the impact of corporati-

1. Okinawa Electric is also engaged in research and development on new energy sources like solar and wind power at its facilities on Miyakojima.

sation on Japan Tobacco, Akioka (1993b) attempts to determine if the full public sell off of the shares in Okinawa Electric in 1988 had any influence on the company's cost structure. While there is evidence that costs did fall to some extent after full privatization, the reduction is not found to be statistically significant. There is also some evidence that economies of scale in power generation are observed after privatization but not before.

Given the OECD's recent recommendation that regulatory reform of the power industry include the separation of generation and transmission of electricity, Akioka's (1993b) findings about Okinawa Electric's acquisition and absorption of the main electricity transmission companies in Okinawa in 1976 are particularly relevant. He finds that there is, not surprisingly, an increase in Okinawa Electric's costs but does not examine whether they are less than or greater than the costs of Okinawa Electric and the transmission companies separately.

Common Themes

With the exception of Okinawa Electric, the sale of shares in each of the other four stock companies has created an extremely number of shareholders in each company. At March 1996, NTT had 1,569,988 shareholders, East Japan had 418,255 shareholders, JAL had 161,632 shareholders and JT had 118,344 shareholders. Okinawa Electric only has 7105 shareholders. In terms of shareholder control, it is to be expected that shareholder control was much firmer in the pre-privatised days where in fact there was only one shareholder. In the post privatization days where there are many shareholders which presumably leads to weaker shareholder control over managers, the managers probably have a much freer hand in the running of the company.

The conventional story about firm financing in Japan centres on the main bank which puts together a de facto loan syndicate for a firm. The main bank is typically the largest lender to the firm, the largest shareholder among the banks, and for large firms plays an important role in assisting firms when they get into distress (see Aoki and Patrick (1994)). Japan does not have an active takeover market and the external share market does not appear to provide a strong discipline on management of firms, although there is evidence that managerial remuneration and turnover is related to the financial state of the firm (see Kaplan (1994) and Kaplan and Minton (1994)).

Tables 1-5 provide details of the top shareholders (and their loan shares) in Okinawa Electric, Japan Airlines, Japan Tobacco, East Japan Railway and NTT, respectively. East Japan Railway is probably the closest to the 'main bank' firm pattern with five city banks among the top ten shareholders and the ordering of loan shares closely following the ordering of their shareholdings (Table 4). Japan Airlines would also appear to follow the standard main bank story with the Industrial Bank of Japan being the largest shareholder and the largest lender among the banks (Table 2). Other bank loans apart from Dai-ichi Kangyo are relatively small and JAL seems to have a very diversified pattern of borrowing. It is worth noting that JAL's amount of loans outstanding increased significantly in the year of complete privatization. Despite Japan Tobacco having next to no bank lending, three city banks and the Industrial Bank of Japan appear among its top ten shareholders (Table 3). Although Fuji Bank, Daiichi Kangyo Bank and Sumitomo have shares of NTT's loans of 5%, 5% and 4%, respectively, neither they nor any other city bank appear among the top ten shareholders of NTT (Table 5). NTT also has a very diversified pattern of borrowing and NTT's borrowings have increased massively in the post-privatization era. It is interesting that the two entities with either a minority government holding or no government holding, East Japan and JAL, appear to be the closest to the standard pattern for 'main bank' style firms.

Okinawa Electric is quite different in several respects. First, it has very strong regional ties as among its top ten shareholders six of the agents are Okinawa (the Governor); the Banks of Okinawa and Ryukyu; the Employees Stock Holding Association; Kokuba Gumi, the largest construction company in Okinawa; and Okinawa Kaiho (see Table 1). While these regional associations of shareholders can be observed for some of the other electric power utilities, they do not appear to be quite so strong[2]. Second, Okinawa Electric is listed on the second board (and was initially listed on the over-the-counter market) whereas all the others were initially listed on the first board of the Tokyo Stock Exchange so the extent to which the stock market provides a disciplining mechanism on manager behaviour may differ significantly. Third, unlike most Japanese companies, the principal source of funds for Okinawa Electric is the Okinawa Development Finance Corporation, a government finance agency under the auspices of the Okinawa Development Agency[3]. Reliance on 'policy determined' loans can create problems when, for example, because business is good the power company does not wish to increase its loans from the Finance Corporation but the Finance Corporation in its budget has already allocated funds for that purpose. One of the main bank's tasks is to monitor its customers. It would be interesting to analyse how the monitoring and screening performed

2. For example, the City of Kobe is the third largest shareholder in Kansai Electric; the Foundation to Promote Yamaguchi Prefecture and the Bank of Hiroshima are, respectively, the top and number eight shareholders in Chugoku Electric; Toyama Prefecture, Hokuriku Bank and Hokkoku Bank appear among the top ten shareholders in Hokuriku Electric; the One Hundred and Fourteenth Bank, Iyo Bank and Kochi Prefecture appear among the top ten shareholders in Shikoku Electric; the Bank of Fukuoka appears among the top ten shareholders in Kyushu Electric; and Hokkaido Takushoku Bank appears among the top ten shareholders in Hokkaido Electric.

3. The Okinawa Development Finance Corporation was established on 15 May 1972 for the purpose of supplying long-term capital to develop industry in Okinawa, and the provision of funds for housing, people engaged in forestries, fishing and agriculture, small businesses, and environmental sanitation. It can provide supplementary funds for investments made by financial institutions or do the lending directly itself. From the standpoint of administrative reform, it is interesting to note that the Okinawa Development Finance Corporation undertakes in Okinawa the tasks that require six finance institutions in the rest of Japan (excluding Hokkaido and northern Japan where there is a similar institution, the Hokkaido Tohoku Development Finance Corporation): the Japan Development Bank, the People's Finance Corporation, the Housing Loan Corporation, the Agriculture, Forestry and Fisheries Finance Corporation, the Small Business Finance, and the Environmental Sanitation Business Finance Corporation (see Administrative Management Agency (1992, p. 128-129)). This suggests the strong possibility of the existence of economies of scope across these six institutions. While the average prefectural per capita income in Okinawa, 2.1 million yen in 1993, is clearly the lowest of all prefectures, is this Okinawa Development Finance Corporation the best way to provide funds to lift the average standard of living? Funds provided by the Corporation to Okinawa Electric are at subsidized rates. About ninety percent of the Finance Corporations Funds come from the Trust Fund Bureau Account and the rest come from postal life assurance and annuity funds (Suzuki (1987, p. 289, Table 5.27)). The majority of funds for the Trust Fund Bureau come from the Postal Savings system (see Suzuki (1987, p. 277, Table 5.22)).

by these government finance corporations compare with the monitoring and screening of private financial institutions. The funds that power utilities typically require are for long-term investment and for this purpose they need sources of long term funds. Here, Okinawa Electric is in a quite different position to the rest of electric power utilities especially since it is only listed on the second board of the Tokyo Stock Exchange. According to the Japan Bond Rating Association, while the nine large electric power utilities all have AAA long-term credit ratings in 1995 and all seven power companies with commercial paper (CP) ratings have the top A1+ rating, Okinawa Electric is not eligible to issue either long term bonds or CPs.

My reading of the evidence for JAL, JNR and NTT is that the overall package of corporatisation, deregulation and the introduction of competition has led to significant improvements in managerial efficiency and benefits to consumers even if there is still some way to go. However, I wonder about the extent of efficiency gains that arise from the share sell-offs particularly for two entities, JT and NTT, when the government retains significant majority holdings. Neither the share market nor the financial system are likely to provide strong incentives for improvements in managerial efficiency in these cases and there is (probably) no real threat of bankruptcy.

4. Amakudari

Amakudari (descent from heaven) refers to the practice of Japanese government officials aged between 50 and 60 moving to high positions in industry (or in public corporations established by the National government under special laws) following their (possibly forced early) retirement. As this practice has been perceived as one indicator of close ties between the regulated firms in the private sector and the regulating agency, it has been the focus of a great deal of public attention recently after the scandal with AIDS infected blood products involving the Ministry of Health and Welfare and Green Cross, the Jusen bad loans problem that eventually required a large infusion of public funds, and a bribery scandal involving a former Ministry of Transport official after his retirement to become head of the Kansai International Airport Corporation. It is important to consider the potential costs and benefits of this practice to several different groups; the dispatching ministry and the employees in that ministry; the recipient firm and the employees in that firm; other firms in the same industry; and society as a whole. The research done to date typically focuses on one particular group only. One important missing element in arguments about amakudari to date is what are the incentive mechanisms facing the dispatched individual to work in the dispatching ministry's interest; the recipient firm's interest, or their own interest. A similar issue arises in relation to dispatches of directors from main banks to private firms.

The National Public Service Law provides that, in principle, government employees are not permitted to be re-employed by a private profit making company for a two year period after their retirement from their ministry or agency if they had close relationships with the company in the five years prior to their

Table 6: Amakudari Approved by the National Personnel Agency

Board of Audit	1
National Police Agency	4
Hokkaido Development Agency	4
Economic Planning Agency	1
Science and Technology Agency	2
Environment Agency	1
Defence Facilities Administration Agency	2
Ministry of Justice	2
Ministry of Finance	59
National Tax Agency	6
Ministry of Education	9
Ministry of Health and Welfare	4
Ministry of Agriculture, Fisheries & Forestry	16
Food Agency	1
Forestry Agency	1
Fisheries Agency	3
Ministry of International Trade and Industry	17
Natural Resources and Energy Agency	1
Patents Agency	4
Ministry of Transport	11
Maritime Safety Agency	9
Meterological Agency	1
Ministry of Posts and Telecommunications	12
Ministry of Construction	16
Ministry of Home Affairs	1
Total	189

Sorce : Toyo Keizai (1996), *Seikai-kancho jinjii roku* (*Personnel Record of the Political World and Bureaucracy*), Tokyo.

Note : These Amakudari refer to cases in 1995 where the reemployment is with a profit making enterprise and requires the approval of the National Personnel Authority under article 103 (3) of the the National Public Service Law.

retirement. Re-employment with such firms is possible if the National Personnel Authority approves and this approval needs to be obtained on a case by case basis. Table 6 provides details of amakudari in 1995 to profit making enterprises where the approval of the National Personnel Authority was given. A significant number of the Ministry of Finance amakudari are to Shinkin banks. Of the 17 MITI amakudari, three went to energy related companies, Kansai Electric (as an adviser [komon]), Tokyo Electric (as a an adviser to their Technical Development Headquarters), and Daito Gas (as a managing director).

The fixed final retirement age of 60 (five years before the pension age of 65), the role of seniority in promotions and the declining number of positions as officials rise up the ladder make it inevitable that there will be a large number of elite bureaucrats who require jobs outside their Ministry. Recent academic research on amakudari has focused on both demand and supply side factors associated with this practice (see Fujiwara and Iemori (1994), Iemori and Fujiwara (1994), Inoki (1995), and Schaede (1995)).

Amakudari can be observed still in each of the privatised entities discussed in section 3. The current board of JAL has one retired employee from each of the Ministry of Posts and Telecommunications, the Ministry of Transport, and the Management and Coordination Agency. Three members of the board of Japan Tobacco are former Ministry of Finance employees. Three members of the board of East Japan are former bureaucrats from the Ministry of Transport and one is from the National Police Agency. Four members of the board of NTT are former bureaucrats from the Ministry of Posts and Telecommunications, one is from the Ministry of Finance, and one is from the Audit Board. Again Okinawa Electric is interesting because it has amakudari from both the national and prefectural governments. For example, currently the chairman of the company is a former vice-governor of Okinawa and the president of the company comes from MITI (see Toyo Keizai (1997, p. 574)). According to the company's annual report for fiscal year 1988, there were fourteen members of the board with three former vice-governors as chairman, president and director [concurrently with being vice-governor], and one executive director from MITI who had previously had four years experience with the Okinawa Development Agency.

Inoki (1995) emphasizes the importance of amakudari as an incentive mechanism that promotes effort by bureaucrats and competition among bureaucrats in the dispatching ministry. Since the amakudari is organised by the personnel office within the bureaucrat's ministry, Inoki treats it as a form of deferred compensation whose value is determined by on the job performance as well as by the status of the ministry. Inoki's empirical study deals only with amakudari to public corporations and finds that the higher the final post in the ministry, the better the amakudari position in the public corporation and the longer the amakudari stay in that public corporation. By increasing the expected value of a stay in the Ministry, Inoki suggests amakudari provides a mechanism to attract better quality workers into the ministry. However, this argument cuts two ways. In the company or public corporation that accepts the amakudari the incentive story works in the reverse direction. That is, by filling one position with an outsider the opportunity cost is that an insider cannot be promoted, so this may affect the personnel competition within the accepting firm and the quality of workers attracted into the firm. This argument obviously extends to cases of "amakudari" like transfers for private firms where the parent company transfers a worker to a senior position in a subsidiary. How important the suggested competition effects and intake effects in either the ministry or the recipient firm is an important but as yet uninvestigated empirical question. A back of the envelope calculation of the expected present value of a salary differential to be earnt in 30 or so years time suggests it is likely to be small; and subject to a great deal of uncertainty. As a result, it is probably safe to conjecture that the effects of the existence of the amakudari on intake quality into a ministry are likely to be relatively small.

On the other hand, Schaede (1995) focuses on the 'demand' for amakudari by private business and the importance of regulation through non-codified administrative guidance. The importance of the former bureaucrats for the recipient firm is suggested to be in their ability to obtain favourable firm-specific administrative guidance and to gain information that will provide a firm-specific edge in intra-industry competition. Schaede finds that the industries that hire the most amakudari are those that are the subject of external constraints like trade agreements controlled by the ministry in charge of the industry. Evidence is provided that industries subject to a specific industry law, for example, investment banking and insurance, do not show a pattern of hiring former bureaucrats. One particularly interesting result is that the number of amakudari to large firms has increased over the last decade despite the general trend towards deregulation and the conventional wisdom that administrative guidance is becoming less important over time (particularly with the passing of the Administrative Procedures Act in 1994). Even though there has been no government ownership in JAL since November 1987, the presence of an amakudari from the Ministry of Transport is consistent with Schaede's hypothesis given the importance of the Ministry of Transport in determining expansions of domestic services.

Schaede (1995) does not explicitly examine energy related amakudari. An examination of the Almanac of Firm Groups in 1997 (see Toyo Keizai Shinbunsha (1997)) indicates that of the ten electric power companies, seven companies (Tokyo Electric, Chubu Electric, Hokuriku Electric, Tohoku Electric, Shikoku Electric, Hokkaido Electric and Okinawa Electric) have amakudari on their boards of directors from MITI, the ministry with direct re sponsibility for them. Typically these amakudari are in very important positions, one is president (shacho) and four are vice-president (fukushacho). In addition, the vice-president of Kansai Electric is an amakudari from JETRO, an institution under MITI's influence. Kyushu Electric has one amakudari from the People's Finance Corporation (Kokumin kinyu koko, an agency under the auspices of MOF). The electric power industry would appear to fit in very nicely with Schaede's (1995) story given MITI's role in rate setting and the licensing／approval provisions relating to new power stations, etc. for individual power companies. Of the nine major gas companies listed in the Tokyo Stock Exchange (Tokyo Gas, Osaka Gas, Toho Gas, Hokkaido Gas, Hiroshima Gas, Saibu Gas, Hokuriku Gas, Keiyo Gas and Chubu Gas), five have amakudari from MITI and one has an amakudari from the Japan Development Bank (Keiyo Gas).

Examining the private railway companies reveals that for the seventeen companies listed on the first board of the Tokyo Stock Exchange seven either have an amakudari directly from the Ministry of Transport or an agency under the Ministry of Transport's jurisdiction, like the former JR, the Railway Construction Public Corporation or the Teito Rapid Transit Authority. In fact, Tobu and Seibu have two such amakudari; in the case of Tobu one of them is as President. In other companies, there are also amakudari from the National Police Agency (perhaps as a countermeasure against gangster influence), the Ministry of Construction, the Bank of Japan, the Forestry Agency, and the Ministry of Finance. In total, nine of the seventeen companies have amakudari with Fuji Kyuko having three. Looking at the privatised firms taken up in section 3, a similar examination of firms in the same industry reveals that ANA has three amakudari, one each from the Japan Development Bank, The Ministry of Transport and the Ministry of Posts and Telecommunications. The two most recently established long distance telephone companies are DDI and Japan Telecom. DDI has amakudari from the Ministry of Posts and Telecommunications (president), MITI (executive director [senmu], and their competitive rival NTT! Japan Telecom also has an amakudari from Ministry of Posts and Telecommunications (executive director), JR, JR East, JR Shikoku, JR Tokai, JR Hokkaido, and their competitive rival NTT!

Fujiwara and Iemori (1994) and Iemori and Fujiwara (1994) suggest a number of (not necessarily mutually exclusive) demand and supply explanations for the amakudari phenomena: (a) as a mechanism to overcome some of the differences between private sector and public sector salaries and retirement ages [conditions hypothesis]; (b) in a regulated environment, a failure to accept a retired government official may result in unfavourable administrative treatment later [threat of penalty hypothesis]; (c) the skills that the bureaucrats acquire during their time in a Ministry are of value themselves to the private firms [ability hypothesis]; (d) the amakudari may provide a signal about the safety of the private firm (particularly in the financial industry)[rescue hypothesis]; and (e) amakudari may provide a means for the bureaucracy to monitor private firms and obtain more truthful information [monitoring hypothesis]. Fujiwara and Iemori's statistical analysis of amakudari from the Ministry of Finance to two groups of financial institutions, second tier regional banks and Shinkin banks, provides no evidence to reject any of the five hypotheses. Hoshi (1997) also highlights the communication and intervention possibilities made available by the existence of the amakudari system

Implicit in Inoki's (1995) hypothesis is the assumption that salary conditions in public corporations are significantly better than what could be achieved by the bureaucrat by going directly to a private company. Taking this as given, his evidence suggests that announced plans to eliminate or rationalize government corporations by reducing the expected life time benefit of becoming a public servant, could, in the long-term, alter the quality of public servants and reduce the supply of individuals wanting to become public servants. Schaede's (1995) evidence suggests that deregulation restricting or eliminating administrative guidance (or the elimination of voluntary export arrangements) would significantly affect the demand from private sector firms for amakudari. The elimination or rationalization of government corporations would also increase the supply ex-bureaucrats going directly to firms. Both these supply and demand factors are likely to reduce the conditions offered by private sector firms to former bureaucrats, and reduce the life-time rewards to future potential bureaucrats. In the longer-term, this could dramatically alter the quality of individuals in the public service.

5. Conclusion

Significant deregulation has occurred in many areas in Japan already and there are areas like public utilities, lotteries and pachinko parlours where further deregulation could bring about significant benefits. This paper has sought to raise questions about: the size of the macroeconomic impact of deregulation; the relative size of the resource flows generated by 'natural restructuring' compared to deregulation; and the efficiency benefits of sales of stock in government corporations.

APPENDIX: ABOLITION OF TOKUSEKIHO

Tokusekiho was a law that required firms wishing to import crude oil and petroleum products to obtain a licence from the Minister of International Trade and Industry and to have facilities for storing crude oil for a minimum specified period to avoid disruption to the domestic market if foreign supplies were cut for some reason. The law was abolished from 1 April 1996. Newspaper reports often suggest that recent falls in gasoline prices are due to abolition of the Tokusekiho. Prices of gasoline, oil and kerosene over the period from January 1993 to early 1997 are displayed in Figure 1. From the Figure, it can be seen that over the period April 1994 to March 1997 gasoline prices have been trending downwards whereas the price of crude oil, the primary input to gasoline production, has been rising. This suggests there is something else (like the abolition of the Tokusekiho) that explains the downward movement of gasoline prices.

To examine whether the abolition had any effect on the price of gasoline a simple demand and supply model was postulated. The demand for gasoline products is assumed to be given by

$$QD_t = a_1 + a_2PG_t / P_t + a_3PE_t / P_t + a_4Y_t / P_t + u_t \quad (1),$$

where QD_t is the per capita demand for gasoline, PG_t is the price of gasoline, P_t is the general price level, PE_t is the price of an energy substitute, Y_t is nominal per capita income and u_t is a disturbance. On the supply side, assume that the supply for gasoline products is given by

$$QS_t = b_1 + b_2PG_t / P_t + b_3W_t / P_t + b_4R_t / P_t + b_5PO_t / P_t + v_t \quad (2)$$

where QS_t is the per capita supply for gasoline, W_t is the wage rate, R_t is the cost of capital, PO_t is the price of crude oil, and v_t is a disturbance. Assuming demand equals supply and solving for the reduced form of PG_t / P_t gives

$$PG_t / P_t = c_1 + c_2PO_t / P_t + c_3PE_t / P_t + c_4Y_t / Pt + c_5W_t / P_t + c_6R_t / P_t + w_t \quad (3)$$

where w_t is a disturbance. Given the expected signs of the parameters are $a_2 < 0$ (downward sloping demand curve), $b_2 > 0$ (upward sloping supply curve), $b_5 < 0$ (increasing input prices lead to lower output), and $c_2 = b_5 / (a_2 - b_2)$, it is expected that $c_2 > 0$. That is, rises in the prices of inputs can be expected to lead to rises in the final price of gasoline products. Figure 1 indicates that oil prices and gasoline prices have been moving in opposite directions since April 1994.

Estimates of (3) using data over the period January 1993 to February 1997 consistently produced equations where, contrary to

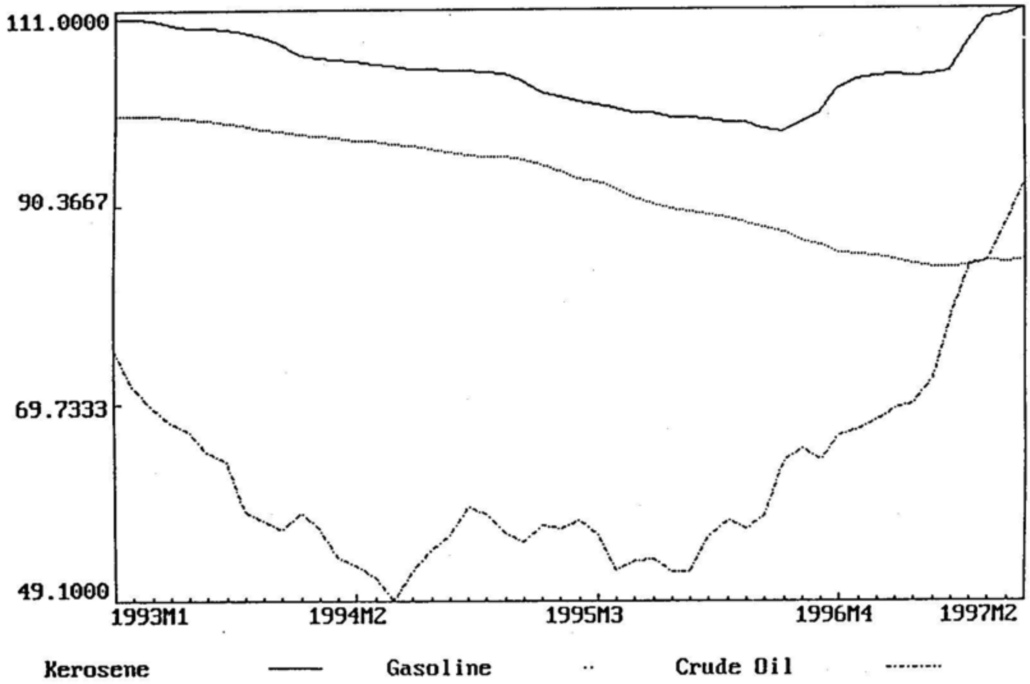

Figure 1: Time Series Behaviour of Gasoline, Kerosene and Crude Oil Prices

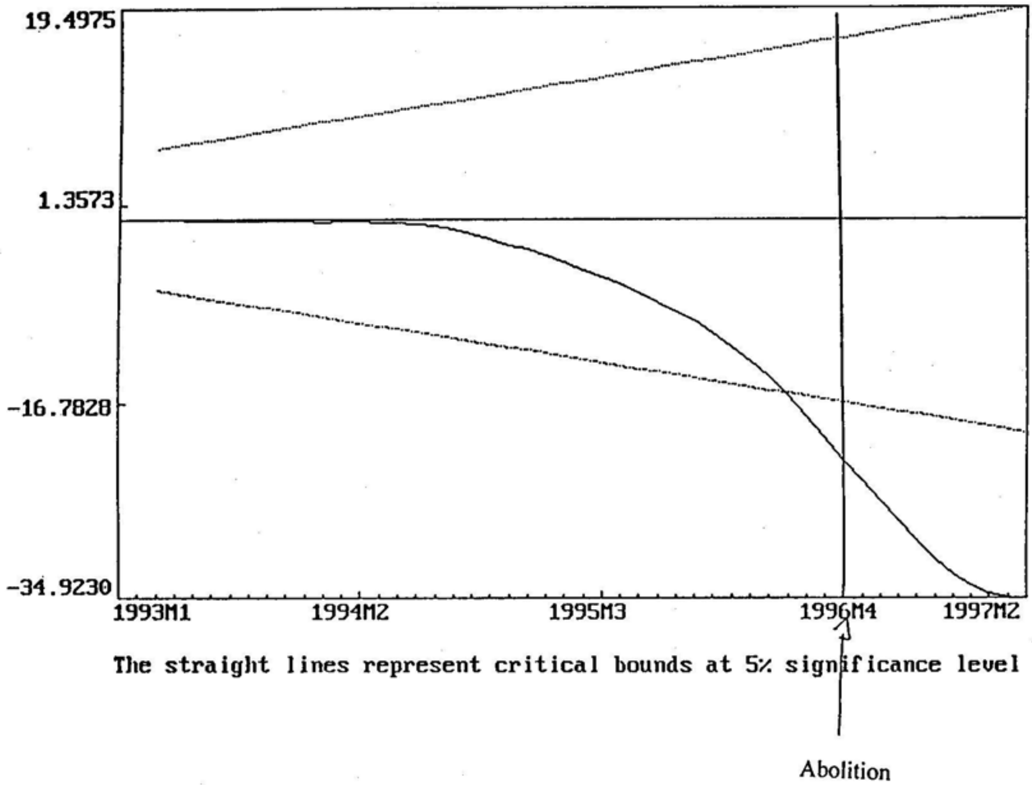

Figure 2: CUSUM Test of Reduced Form Equation for Gasoline Prices

expectations, the estimated c_2 was positive. Figure 2 provides the results from a CUSUM test for a representative equation that suggests a strong possibility of a structural change in the estimated equation ((3)). Although the structural change appears to predate the actual abolition of the law, given that there was plenty of notice about abolition of the law, it is possible that importing firms changed their importing behaviour prior to the actual abolition of the law.

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