

# WORK AND PAY IN JAPAN

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Robert A. Hart  
and Seiichi Kawasaki



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# Contents

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<i>List of figures</i>	<i>page</i> viii
<i>List of tables</i>	x
<i>Preface</i>	xiii
1 Setting the scene	1
2 Labour market concepts	17
3 Industrial relations	34
4 Labour costs	62
5 The bonus system	79
6 Recruitment, training, promotion and retirement	95
7 Employment, productivity and costs over the business cycle	122
8 Small businesses, subcontracting and employment	138
9 Schooling and earnings	157
10 Work and pay in Japan and elsewhere	168
<i>References</i>	172
<i>Index</i>	184

# Figures

---

1.1 Hourly labour productivity in Japan, the Federal Republic of Germany and the United Kingdom, 1960–96	<i>page</i> 3
1.2 Unemployment rates in Europe, Japan and the United States, 1970–95	9
1.3 Participation rates in Europe, Japan and the United States, 1970–95	12
1.4 Composition of unemployment rates in Japan, the United States and the United Kingdom, 1960–96	15
2.1 Workers' returns to general training	19
2.2 Workers' returns to specific training	20
3.1 Union density by country, 1988	38
3.2 Union density by firm size: Japan and the United Kingdom	39
3.3 Union density, Japan, 1953–94	40
3.4 Union density by country, 1970–88	40
3.5 Spring wage increases, 1965–94	42
3.6 Productivity and wages, 1957–95	44
3.7 Annual wage increases and spring wage increases, 1965–95	45
3.8 Changes in annual wages (starting levels) by education, 1969–94	45
3.9 Wage changes by sex, 1960–95	46
3.10 Wage changes by firm size, 1960–95	46
3.11 Proportion of establishments with quality control circles, 1972–94	55
3.12 Days lost through industrial disputes per 1,000 employees, 1955–95	59
4.1 Non-wage labour costs by country: manufacturing industry, 1965–92	70
4.2 Population structure, Japan, 1960–2020	75
4.3 Proportion of population over 65 by country, 1900–2020	76
6.1 Career tree of a Japanese manufacturer	105
6.2 Career tree of a Japanese trading company	107
6.3 Career tree of a Japanese insurance company	108
6.4 Career tree of an American manufacturer	109

8.1 Employment by firm size: total industries, 1958–96	140
8.2 Employment by firm size: manufacturing industry, 1958–96	140
8.3 Wage level of small firms relative to large firms' level, 1958–96	142
8.4 How many times have subcontractors changed partners?	147
9.1 Earnings–age profiles by schooling, 1991	161
9.2 Earnings–experience profiles by schooling, males, 1991	162
9.3 Estimated earnings–tenure profiles by schooling, Cohort A	165
9.4 Estimated earnings–tenure profiles by cohort, university graduates	166

# Tables

---

1.1 Incidence of formal enterprise training and tenure by establishment size	<i>page</i> 6
1.2 Distribution of employment by enterprise tenure, 1991	7
1.3 Average tenure profiles by age and establishment size	8
3.1 Union density by industry	39
3.2 Explaining spring wage increases, 1965–95: OLS regression results	43
3.3 Average annual percentage wage increases by firm size and sex, 1954–95	47
3.4 Spring wage increases in major car companies, 1987–97	48
3.5 Proportion of establishments with joint consultation systems by industry	50
3.6 Proportion of establishments with joint consultation systems by firm size	51
3.7 Proportion of establishments with particular items on agenda of joint consultation	52
3.8 Proportion of firms with small-group activities by industry and firm size	54
3.9 Days lost through industrial disputes: five-year average per 1,000 employees	60
4.1 Labour costs in manufacturing industries, 1965–95	63
4.2 Changes in age, tenure and gender of employees, 1965 and 1991	64
4.3 Labour costs in total industries, 1973–95	66
4.4 Labour costs by industries, 1995	67
4.5 Labour costs by firm size: manufacturing, 1995	68
4.6 Matching labour cost items	69
4.7 Structure of labour costs in Europe, USA and Japan: all industries	71
4.8 Structure of labour costs in Europe, USA and Japan: manufacturing industry	71
4.9 Fringe benefits and unionisation, 1991: OLS regression results	74
5.1 Age groups and cohorts	89
5.2 Cohort wage equations	90

5.3 Cohort bonus equations	91
5.4 Bonus equation (experience – tenure) impacts	91
6.1 Recruitment costs in Japanese industry, 1991	99
6.2 Recruitment costs adjusted for turnover in Japanese industry, 1991	101
6.3 Recruitment costs by enterprise size in Japanese industry, 1991	103
6.4 Distribution of retirement ages, 1967–96	115
6.5 Retirement ages by firm size, 1967 and 1996	117
6.6 Retirement ages by industries, 1996	118
6.7 Economically active population ratio for males in age group 60–64 (active population/total population)	118
7.1 Quarterly adjustments of workers and hours	126
7.2 Excess total hours, 1970–91	127
8.1 Shares of small manufacturing firms: international comparisons	139
8.2 Wage differentials by firm size in Japan and the UK, 1996/7	143
8.3 Effect of six factors on wage differentials	143
8.4 Advantages and disadvantages of wage payments by firm size, 1988	144
9.1 Age groups and cohorts	164

# 1 Setting the scene

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We begin by highlighting a number of key Japanese work and pay issues. Several topics – such as wage and bonus payments, employment and working time – are dealt with in some depth in later chapters and so we merely draw attention to a number of salient features at this stage. Other areas – such as the length of jobs, unemployment and labour force participation – are discussed in detail here in order to serve as a useful backdrop to related points of interest at later stages. In common with most of the ensuing text, we discuss topics in a comparative international setting.

From an international perspective, interest in Japanese employment, remuneration and labour costs has stemmed, primarily, from perceived differences in organisation and performance compared to other major industrial economies. One theme of the book is to question the extent to which Japanese differences are real or apparent. Four examples are as follows. First, in chapter 3, we question the degree to which the Japanese enterprise union system is unique. Second, in chapter 5, we examine the cases for and against the claim that the bonus system constitutes a unique form of remuneration. Third, we consider in the present chapter whether Japanese post-war unemployment experience has been significantly different from elsewhere. Fourth, in the present chapter and elsewhere, we investigate whether job tenure and labour turnover and their relationships to wage growth have played a distinct role in Japan.

## 1.1 Economic growth and labour productivity

By OECD standards, Japan's economic growth performance taken over the whole of the post-war era has been remarkable. While the pattern of growth has not been even, the economy has experienced significantly longer periods of above-OECD-average compared to below-OECD-average real growth. The 'miracle' years occurred during the period from the early 1950s to 1973 when annual real GNP growth often exceeded 10 per cent and averaged about 9 per cent, well in excess of other OECD member countries.



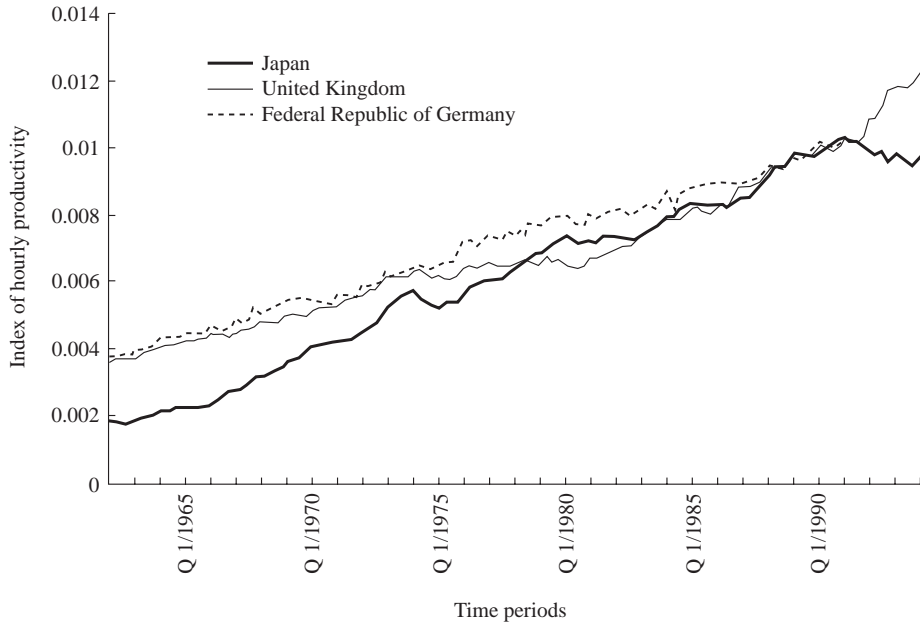
Recovery from the first OPEC supply shock in 1973/4 marked the beginning of a more modest era of real growth up to the late 1980s, yet it remained above the OECD average. More recently, the 1990s have witnessed a significant worsening of relative growth performance. The bubble of asset price inflation, that built from 1986, burst in 1989 with accompanying problems of dampened consumer spending, low investment in a high-risk environment, falling land prices and lack of confidence in financial markets. Argy and Stein (1997) present a useful discussion of these phases of economic activity.

During the 1950s and 1960s Japan's average growth rate of around 9 per cent compared to a rate of around 4 per cent in the United States. One way of determining the absolute and relative contributions of different productive factors to overall growth is the supply-side approach of decomposing production functions into each of the separate inputs.<sup>1</sup> At the aggregate level, the three important factor inputs are labour, capital and technological progress. These can each be further subdivided into: (i) *labour*: employment, hours, sex/age composition, education; (ii) *capital*: inventories, non-residential structures and equipment, dwellings, international assets; (iii) *technological progress*: knowledge, improved resource allocation, scale economies.

Compared to the United States in the 1950s and 1960s, Japan experienced a higher absolute contribution to its growth rate from each of the three aggregated factors as well as from most of their component parts (Denison and Chung, 1976). In relative terms, about 55 per cent of growth performance within Japan was attributable to technological progress, about 24 per cent to capital and about 21 per cent to labour. Respective relative contributions to growth in the United States were 48 per cent, 20 per cent and 32 per cent. Interestingly, the *absolute* contribution of employment within the labour factor was the same in each country although, given differences in national economic growth, it accounted for 13 per cent of Japan's and 29 per cent of the United States' growth. A key labour difference was hours of work which contributed to around 2 per cent of Japanese growth but had a *negative* 5 per cent effect on growth in the United States.

During the 1970s, Japan's average growth fell substantially, to around an average of about 4.8 per cent. Shinohara (1986) analyses factor contributions for this later period. The contribution of technological progress to growth fell substantially in absolute terms, though it was still over 50 per cent in relative terms. Labour's absolute contribution also fell but it also held up in relative terms. However, while the hours component of labour made a modest contribution in the earlier period, it had a slightly negative impact in the second period. Both the absolute and relative contributions of capital diminished in the later period.

The contribution of employment and hours, especially up to the early 1970s, would suggest that Japan's post-war hourly labour productivity has grown relatively strongly. This is certainly the case in relation to Europe, for example. Figure 1.1 compares the quarterly measure of hourly productivity in Japan with those of the Federal Republic of Germany (FRG) and the UK between 1960 and 1989 (FRG) and 1996 (UK). The period of rapid growth up until the early 1970s witnessed Japan's rate of productivity rise from roughly half those of the two European countries in 1960 to virtual parity by the late



**Fig. 1.1.** Hourly labour productivity in Japan, the Federal Republic of Germany and the United Kingdom, 1960–96. Data for Germany on a comparable basis are not available after 1989. (Source: OECD labour force statistics.)

1980s. Noticeably, however, Japan's productive performance has fallen back somewhat during its 1990s economic crisis.

At least with respect to major economic shocks, it would appear from figure 1.1 that Japanese labour productivity varies directly with the business cycle. For example, it dips quite noticeably after the 1973/4 OPEC supply shock and again after the burst bubble in the early 1990s. What accounts for this direction of reaction? This question is associated with two important and interrelated areas of comparative international labour market research involving Japan. The first of these involves an explanation of the observed productivity cycle. This concerns the view that Japan is *less* likely than other major economies to buffer against recessionary events by allowing its employment stock to vary in size. In this event, pro-cyclical hourly productivity may be associated with the fact that, during economic downturns and upturns, employment fluctuates less than proportionately to output because firms show high propensities respectively to hoard and dis-hoard labour. The second area of research is closely linked to cyclical productivity and is central to neoclassical labour and macro-economics. A central tenet of neoclassicists is that the optimising firm equates the ratios of marginal productivities of labour and capital to their respective marginal costs. In a short-run context, a propensity to hoard labour, for example, may prevent the realisation of such a goal on the employment front. This and other short-run influences may in turn induce systematic cyclical patterns in

price–cost mark-ups. Both these avenues of interest are investigated in some detail in chapter 7.

## **1.2 Wages, bonuses and non-wage costs**

Most Japanese workers receive the major part of their direct remuneration via two channels. First, and familiar to many workers in other countries, they are paid in the form of regular (usually monthly) wages. Secondly, they receive bonus payments which, typically, are paid twice a year. The bonus constitutes around one-fifth to one-quarter of total cash earnings. As we show in chapter 4, bonus payments in most other countries are very small by comparison. A few countries do have significant per-worker bonuses and other premiums. However, such payments (even the highest of these, such as in France and Germany) are less than half of Japanese bonuses when expressed as proportions of total labour costs.

Interest in the Japanese bonus system stems not merely from its uniqueness but also from the possibility that it may somehow be linked to the relatively strong Japanese economic performance in the post-war era. Bonuses in Japan have been variously argued to serve a number of economic roles. They may simply be regarded by the firm and its workforce as a component of total compensation that behaves in a largely indistinguishable manner from regular wages. Thus, the market forces of demand and supply for labour services may largely determine both forms of compensation. Bonuses alternatively may represent a form of efficiency wage by providing a reward for greater effort. By contrast, and at a general level, wages may reflect more systematic and structural elements of remuneration, such as seniority-based pay scales (the *Nenko* system), while bonuses are used to adjust total compensation to fluctuations in firms' economic experiences. In this event, we might expect that the bonus should display more flexibility than the wage. One school of thought in this respect regards bonuses as a form of profit-sharing between the firm and its workforce. Another holds that bonuses reflect shared returns to investments in firm-specific skills and know-how.

Beyond direct remuneration in the form of wages and bonuses, firms incur labour costs associated with statutory and private welfare provision, recruitment and training, severance compensation, and other forms of non-wage labour costs. There are a number of interesting differences between Japan and elsewhere in several items of these costs and these are highlighted and discussed in chapter 4.

## **1.3 Enterprise tenure and labour turnover<sup>2</sup>**

The length of stay by workers in given jobs is a crucial labour market subject area. Theoretical and empirical developments centred on this variable have important Japanese links. Relative to most major economies, higher proportions of Japanese male workers, at least up to the age of 55, enjoy long-tenure jobs. The contrast is particularly stark when length of tenure is compared with that in the United States, as in the following comparison of the period 1979–89 in Japan with 1983–91 in the United States.

[A]most 40 per cent of American men in the 37–40 age range had 0–4 years of tenure in 1983 and only about one in three of them is estimated to last another eight years with the firm. By contrast, only 17 per cent of Japanese men aged 35–39 had under 5 years of tenure in 1979, and almost half will go on with the firm for at least another ten years.

[A]most regardless of age or tenure, Japanese men are significantly more likely to be with the same employer ten years later. For example, among American men in their mid twenties just starting work in 1983, fewer than 25 per cent were still employed with the same firm eight years later. In contrast, over 50 per cent of Japanese men in their mid-twenties were still with their original employer ten years later. (*OECD Employment Outlook*, 1993)

A possible, although partial, explanation of the above differences, especially among younger workers, is that Japanese employers devote more effort and expenditure towards finding appropriate new recruits directly from schools and universities. This may result in good job matches being established at an early, formative, stage. In contrast, the United States may rely more on workers themselves sampling jobs in the early work years before finding good job matches through a process of trial and error (Topel and Ward, 1992). We deal with links between schooling, tenure and wage growth in chapter 9.

Another line of reasoning focuses on investments in firm-specific human capital skills and organisational know-how. Where significant investments take place, premature separations – due to quits or layoffs – may result in large turnover costs. Accordingly, bargaining parties may expend considerable effort in attempting to preserve the returns accruing to specific investments by minimising costly separations. Job tenure and specific investments would be expected, therefore, to be positively associated. Ideas in this area are developed in some detail in chapter 2 and examined empirically in several later chapters.

While hard facts on comparative international levels of per-worker human capital investment are lacking, circumstantial evidence would appear to support the case that Japan is high in the league table. Most comparative work has featured Japan and the United States. One type of supporting evidence is based on the incidence of formal enterprise training and tenure. Table 1.1 reveals that, for a range of enterprise sizes, the Japanese labour force enjoys (i) longer tenure, (ii) higher incidences of formal training, and (iii) lower percentages of workers with less than one year of tenure.<sup>3</sup> As we will see in chapters 2 and 5 and elsewhere, length of tenure is associated in the human capital literature with firm-specific investments in worker skills and know-how and, in turn, such investments impact on wage growth. Therefore, the comparative longevity of job tenure in Japan has much wider ramifications than purely employment-related questions.

The general picture portrayed in table 1.1 is confirmed in a wider context in table 1.2 which presents comparative European and United States data. These data reveal that, relative to the other countries, (i) a lower proportion of Japanese workers have tenure of one year or less, (ii) median tenure for Japanese men is relatively long, and (iii) average tenure for men and women is relatively long (the OECD unweighted average is 8.7 years).

At least from a human capital perspective, we might expect specific investments – and, therefore, length of tenure – to be greater in large than in small firms. At given pay levels,

Table 1.1. *Incidence of formal enterprise training and tenure by establishment size*

Establishment size	25–99 employees	100–499 employees	500–999 employees	1000+ employees
Japan 1989 <sup>a</sup>				
Percentage of employees who received formal company training	59.5	75.5	83.6	89.5
Average tenure (years)	8.9	← 10.2 →		13.7
Percentage of employees with less than one year tenure	11.2	← 8.4 →		5.1
United States 1991 <sup>b</sup>				
Percentage of employees who received:				
Formal company training	10.6	13.2	18.4	26.2
Any kind of training	34.5	41.9	47.7	52.2
Average tenure (years)	5.4	6.8	7.0	8.4
Percentage of employees with less than one year tenure	23.2	18.4	16.4	15.5

*Notes:*

<sup>a</sup> Enterprise size for training is 30–99, 100–499, 500–999 and 1000+ regular employees. Enterprise size for tenure is 10–99, 100–999 and 1000+ regular employees. Training incidence for establishments with 100–499 regular employees is an unweighted average of the incidence across the size groups 100–299 and 300–499.

<sup>b</sup> ‘Any kind of training’ refers to skill improvement through schooling, formal company training, informal on-the-job training and ‘other’. Data refer to all wage and salary workers.

Source: *OECD Employment Outlook*, 1993.

workers will be less likely to separate, and so investments will be better protected, if longer promotion ladders and a wider range of new employment opportunities exist. This might mean, from the firm’s viewpoint, that investment risks are reduced because longer investment amortisation periods are secured. Table 1.3 presents, for the years 1979 and 1989, tenure lengths by firm size, age and sex in Japan and the United States. Almost without exception, tenure is longer in large firms than in small ones for all age groups and for both sexes in the two countries. In line with the previous table, the figures reveal that, given firm size, tenure is longer for males and females in Japan than in the United States. Over the 1980s, female and male tenures in Japan appear generally to have grown, although confined to ages 35 and over in the case of large firms. By contrast, there is a dominant downward trend in male tenure in the United States at this time, while the female evidence is somewhat mixed.

Table 1.2 *Distribution of employment by enterprise tenure, 1991*

	France <sup>a</sup>	Germany <sup>b</sup>	Japan <sup>a</sup>	United Kingdom	United States
<i>Current tenure (percentages)</i>					
Total	100.0	100.0	100.0	100.0	100.0
Under 1 year	15.7	12.8	9.8	18.6	28.8
1 and under 2 years	10.7	10.3	16.1 <sup>b</sup>	12.4	11.6
2 and under 5 years	15.6	17.9	11.5 <sup>b</sup>	23.9	21.3
Under 5 years	42.0	41.0	37.4	54.8	61.7
5 and under 10 years	16.2	17.8	19.7	16.1	11.7
10 and under 20 years	25.6	24.5	23.6	19.3	17.8
20 years and over	15.8	16.7	19.3	9.6	8.8
Unknown	0.4	—	—	0.1	—
<i>Average tenure (years)</i>					
All persons	10.1	10.4	10.9	7.9	6.7
Men	10.6	12.1	12.5	9.2	7.5
Women	9.6	8.0	7.3	6.3	5.9
<i>Median tenure (years)</i>					
All persons	7.5	7.5	8.2	4.4	3.0
Men	7.9	9.5	10.1	5.3	3.5
Women	7.0	5.0	4.8	3.7	2.7

Notes:

<sup>a</sup> 1990

<sup>b</sup> 1 and under 3 years, and 3 and under 5 years.

Source: *OECD Employment Outlook*, 1993.

## 1.4 Unemployment, labour force participation and labour hoarding

A major stylised fact in the realm of international comparative labour markets is that post-war Japanese recorded unemployment has been consistently well below that of its major OECD competitors. This is illustrated in figure 1.2 which shows female and male Japanese unemployment rates between 1970 and 1995 together with comparable rates in the United States, France and Sweden. Unemployment rates at between 1 and 3 per cent in Japan compare with rates that are twice as large in the United States and, since the early 1980s, three to four times higher in France. Even Sweden, with one of the lowest post-war European unemployment records, has experienced rates during the 1990s that are three times higher than in Japan.

In fact the very poor unemployment performances of European countries compared with Japan are even more pronounced when the recent problem of long-term unemployment is taken into account. The *OECD Jobs Study* (Organisation for

Table 1.3. *Average tenure profiles by age and establishment size*  
 Private non-agricultural wage and salary employment, years

	1979		1989	
	Small firm	Large firm	Small firm	Large firm
Japan <sup>a,b</sup>				
<i>Age groups</i>				
<i>Men</i>				
20–24	2.5	3.8	2.5	2.8
25–34	5.8	9.0	5.9	8.2
35–44	10.2	16.3	10.6	18.2
45–54	11.7	23.2	14.5	25.3
55–64	10.3	18.7	13.2	25.3
<i>Women</i>				
20–24	2.4	3.4	2.4	2.9
25–34	4.6	7.2	5.1	7.5
35–44	6.4	8.7	7.6	11.7
45–54	8.4	12.9	10.3	14.9
55–64	10.1	12.6	12.3	17.2
United States <sup>a,c</sup>				
<i>Age groups</i>				
<i>Men</i>				
20–24	2.1	2.0	2.0	2.0
25–34	3.5	5.1	4.0	4.8
35–44	6.4	10.8	6.1	9.8
45–54	10.5	17.7	8.4	16.7
55–64	12.0	21.1	11.3	20.2
<i>Women</i>				
20–24	1.4	1.8	1.7	1.8
25–34	2.2	4.6	3.1	4.3
35–44	4.8	7.4	4.5	8.1
45–54	6.1	12.1	6.9	10.3
55–64	9.9	14.8	8.6	12.3

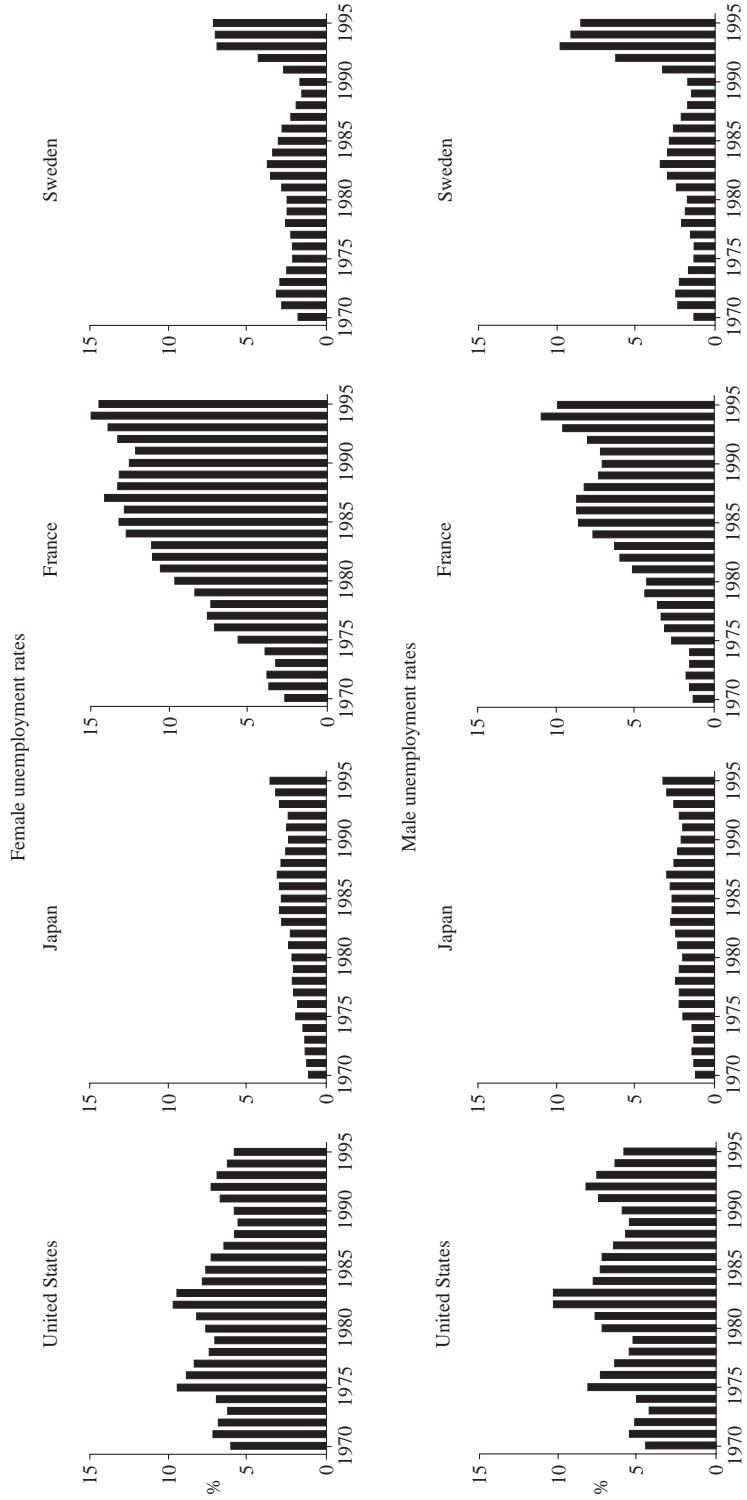
*Notes:*

<sup>a</sup> For Japan, a small firm has 10 to 99 and a large firm has 1000 or more employees. For the United States, a small firm has less than 100 and a large firm has 1000 or more employees.

<sup>b</sup> Data for both 1979 and 1989 are weighted averages of tenure by five-year age groups.

<sup>c</sup> Data for 1979 are unweighted averages of tenure by five-year age groups.

*Source: OECD Employment Outlook, 1993.*



**Fig. 1.2.** Unemployment rates in Europe, Japan and the United States, 1970–95. Unemployment rate = Unemployed aged 15–64/Labour force aged 15–64 × 100. (Source: Darby *et al.*, 1999.)



Economic Co-operation and Development, 1994) shows that, in 1992, more than 40 per cent of the unemployed in the European Community had been out of work for twelve months or more compared with a figure of only 15 per cent in Japan. Actually, North America shows even more resilience than Japan in this respect, with 11 per cent long-term unemployed in the same year.

Note further that, compared with the other countries, Japan displays less cyclical unemployment variation. Japan's relative low unemployment rates combined with their lack of cyclical variation appear to reflect an economy that has experienced reasonably sustained growth and employment stability. We have seen in the previous section, however, that Japan's growth after the early 1970s was neither even nor sustained. Further, while employment stability amongst males, especially in large firms, has been a post-war feature, it certainly does not represent the picture for the entire labour force. Prima facie, it would appear that recorded unemployment rates in Japan do not capture the complete picture of underutilised labour resources in the Japanese labour market. What is missing?

Let  $D$  and  $S$  stand for, respectively, the demand for and supply of labour. If  $N$  is employment and  $U$  is the recorded number of unemployed, then a conventional measure of excess labour supply may be written

$$\frac{D - S}{S} = f\left(\frac{N - (N + U)}{N + U}\right) = f\left(\frac{-U}{N + U}\right) \quad (1.1)$$

As emphasised by Taylor (1970), equation (1.1) is an inadequate measure of excess supply for two reasons.

In the first place, as discussed in chapter 7, it ignores the possibility that firms may hold underutilised units of labour among their *existing* workers. As product demand fluctuates, some firms may reveal a risk-averse propensity to hold on to existing labour stocks if turnover is costly owing to recruitment, training and redundancy costs. In this event, unemployed labour resources may be manifested through fluctuations in labour utilisation rates on firms' intensive margins rather than through changes in unemployment rates on extensive margins. This intensive margin phenomenon is referred to as labour hoarding. Let us assume that such hoarding does take place and let it be denoted by  $R$ .

In the second place, on the extensive margin, some workers may be effectively unemployed but not *recorded* as such. Under the so-called 'discouraged worker effect' some workers without a job may be reluctant to register as officially unemployed and seeking work because of extremely low expectations of employment opportunities. In effect, they cease to participate in the labour market and become 'hidden' unemployed because of their lack of registration. Such hidden unemployment is denoted by  $H$ .

Combining the notions of hoarded labour and hidden unemployment with conventional recorded unemployment produces a more general measure of excess labour supply, given by

$$\frac{D - S}{S} = g\left(\frac{(N - R) - (N + U + H)}{N + U + H}\right) = g\left(\frac{-(U + R + H)}{N + U + H}\right) \quad (1.2)$$

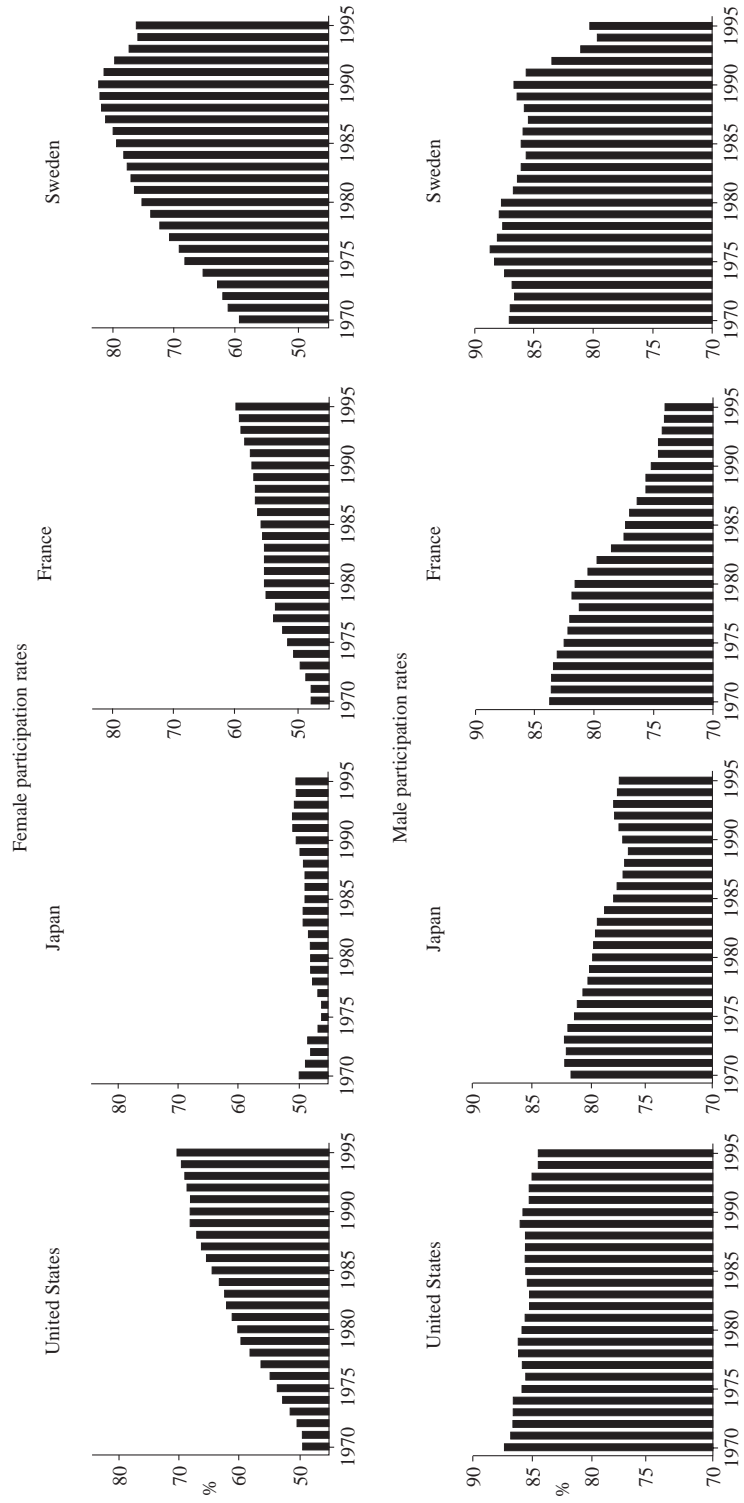
The two key questions in relation to (1.1) and (1.2) are whether we would expect the two additional measures of excess supply – hoarded labour and hidden unemployment – (i) to be quantitatively important on the Japanese labour market and (ii) to behave differently in Japan than in other major economies. Interestingly, the answer to the first of these questions is yes. Hoarding in Japan is relatively large in comparison with other major economies. Evidence of Japan's relatively high propensity to hoard labour is provided by several studies (e.g. Odagiri, 1992; Hart and Malley, 1996). One approach to explaining this behaviour is based on human capital considerations. Some evidence is presented later in this section. We leave deeper developments and discussion of relevant ideas to chapter 2 and return to more extensive empirical details on hoarding in chapter 7.

Hidden unemployment is linked to labour force participation. Figure 1.3 displays the level and trends in male and female labour force participation between 1970 and 1995 for the same four countries as in figure 1.2. In general, sustained rises in female participation over the period contrast with systematic falls in the male rates. Female participation rates in Japan are both lower and flatter than in the other three countries while the Japanese male rates are largely unexceptional compared with the European rates and lower than in the United States.

For present purposes, however, the major consideration is the degree to which falls in participation represent permanent downturns due to the discouraged worker effect.

Note in figure 1.3 that an exceptional reduction in female participation occurred after the first OPEC supply shock while a somewhat shallower fall took place in the more recent early 1990s recession. Aoki (1988) claims that in the earlier period, a fall in demand tended to discourage a large proportion of Japanese females from job search and so they retired early from the labour market. Estimates quoted by Aoki for 1978 show that the proportion of discouraged workers who were not in the labour force was 8.9 per cent in Japan and 1.4 per cent in the United States. These percentages compare with respective unemployment rates in the same year of 2.2 and 6.0 per cent.<sup>4</sup>

Darby *et al.* (1998) investigate the extent of 'hidden' unemployment for the four countries and over the period shown in figure 1.3, distinguishing between males and females as well as among age groups. In particular, they investigate the responses of participation rates to shocks in business sector GDP. In order to separate the discouraged worker effect from other reasons for not participating, their estimation approach attempts to distinguish two aspects of the participation decision. First, in line with several studies in this area (e.g. Pencavel, 1986), they distinguish between temporary and more sluggish participation responses to deviations from trend growth. Secondly, they test whether participation responses to upward fluctuations in the cycle are symmetric with those to downward fluctuations. Sluggish and asymmetric responsiveness would be expected to be closely linked to worker discouragement. In the latter respect, it might be anticipated that patterns of downward participation response will not correspond with upward movements. For example, workers near to retirement might regard decisions not to participate as irreversible. It may be difficult to persuade employers to reinvest in the human capital of older workers owing both to the erosion



**Fig. 1.3.** Participation rates in Europe, Japan and the United States, 1970–95. Participation rate = Labour force aged 15–64/Population aged 15–64 × 100. (Source: Darby *et al.*, 1998.)

of skills during non-participation and to short expected job ‘lifetimes’ over which to earn an investment return.

The study found that in Japan, France and the United States there is strong evidence of the discouraged worker effect. Such discouragement is predominantly a female phenomenon, especially among 45–54 year olds. Moreover, the Japanese evidence is more marked than in the other countries. The two oldest female groups – aged 45–54 and 55 + – exhibit significant asymmetric responses; participation adjustments to negative shocks are much larger than the adjustments to positive shocks. In the case of the 45–54 group, an estimated fall in participation given a downward shock contrasts with *no* adjustment for the upward direction. This work corroborates earlier findings of Tachibanaki and Sakurai (1991) that the discouraged worker effect is essentially a female phenomenon in Japan, with the added refinement that the brunt of such discouragement is borne by older females.

The foregoing evidence suggests that representing Japanese excess labour supply purely in terms of recorded unemployment, as in equation (1.1), may not only serve significantly to understate Japan’s unemployment position but also to misrepresent its comparative international standing with respect to excess labour supply. At a first approximation, it would seem to be more appropriate to describe excess supply in terms of equation (1.2) which incorporates the hoarded labour and hidden unemployment aspects of the problem. The following simple exercise is based on Taylor (1970) and borrows from the study of Darby *et al.* (1999). Thus, we adopt the so-called ‘trends-through-peaks’ methodology to obtain values of  $R$  (hoarding) and  $H$  (hidden unemployment) in equation (1.2).

In the case of hoarded labour, estimation proceeds as follows.

- Examine the time series of output per hour of employed workers and determine the peaks. These peaks are taken to represent maximum labour utilisation, with no labour hoarding taking place.
- Join the peaks by fitting linear segments. The fitted lines are taken to represent the full-employment output to labour ratio at time periods between the peaks.
- Hoarded labour at time  $t$  ( $R_t$ ) is taken as the ratio of actual output per hour to the estimated full-employment output per hour. It is expressed:

$$R_t = \left[ 1 - \frac{(Q/N)_t}{(Q/N)_t^*} \right] N_t \quad (1.3)$$

where  $Q$  = GNP and  $(Q/N)^*$  is the full employment/output ratio.

For estimates of hidden unemployment, the procedure is quite similar.

- Examine the time series to find the full-employment levels of participation. At the peaks, the labour force is assumed to have reached its full (short-term) level of participation.
- Obtain full participation non-peak estimates by, again, fitting linear segments to the peaks.
- Hidden unemployment at time  $t$  ( $H_t$ ) is given by the difference between actual participation and full employment participation, or

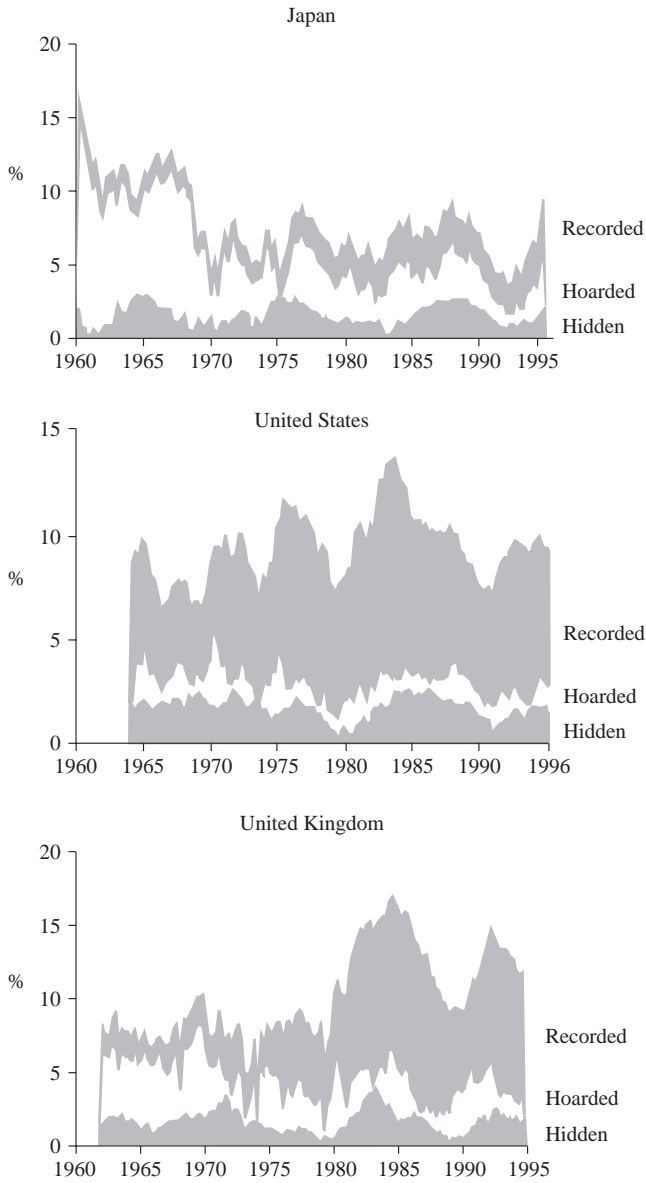
$$H_t = P \left[ \left( \frac{L}{P} \right)_t^* - \left( \frac{L}{P} \right)_t \right] \quad (1.4)$$

where  $P$  is all persons over the age of 16,  $L$  is the recorded labour force and  $(L/P)^*$  is the full-employment participation rate.<sup>5</sup>

Figure 1.4 shows the decomposition of unemployment rates into recorded, hoarded and hidden unemployment for Japan, the United States and the United Kingdom between 1960 and 1996. Hoarded and hidden unemployment estimates are based, respectively, on equations (1.3) and (1.4). In the first place, they emphasise the stylised fact that recorded unemployment in Japan is significantly lower than elsewhere. Secondly, hidden unemployment is shown to be of a reasonably similar magnitude in all three countries. Thirdly, hoarded unemployment in Japan is higher than in the United Kingdom and considerably higher than in the United States.<sup>6</sup> Adding these components together, transforms the relative unemployment positions. While Japan continues to enjoy the lowest unemployment rates, the differentials with the other countries – and especially the United States – narrow appreciably.

## Notes

- 1 Ito (1992) presents a simple introduction to the methodology involved as well as a review of the empirical findings.
- 2 Most of the empirical material contained in section 1.3 is obtained from a very interesting article in *OECD Employment Outlook* (Organisation for Economic Co-operation and Development, 1993).
- 3 The information in table 1.1 may be somewhat misleading in that it omits the length of labour market experience before entering the current firm or the extent to which the training required by firms involves firm-specific or general skills. Thus, if required training has large general elements, then US workers may have acquired much of the training in previous employment. In this event, table 1.1 would give a distorted picture.
- 4 Aoki (1988, pp. 172–3) goes on to state that ‘recent studies suggest that the effect of “discouragement” is becoming weaker and the phenomenon of “involuntary” part-time workers has become more common’. The extent to which part-time workers would prefer a full-time job or a longer part-time job also has a bearing on the measurement of excess labour supply. However, we do not consider this issue here except to note that Japan was not exceptional in experiencing in the 1980s a rise in part-time employment as a share of total employment. Canada, France, Germany and the United Kingdom were among countries that experienced larger rises (see Organisation for Economic Co-operation and Development, 1994).
- 5 We note that the measure of hidden unemployment here is only a first approximation. It does not distinguish carefully between workers who want to work but are discouraged from participation in the labour market and those who may choose not to participate for other reasons. For example, during tight labour market



**Fig. 1.4.** Composition of unemployment rates in Japan, the United States and the United Kingdom, 1960–96. To facilitate comparisons, the three measures of unemployment are expressed in straight-time hours equivalents. (Source: Darby *et al.*, 1998b.)

employment conditions at cyclical peaks, high wages and other non-wage benefits may induce higher participation. In troughs, by contrast, workers may voluntarily choose not to participate because they value non-work activities higher than available paid work. The adopted measure, therefore, probably overestimates the degree of hidden unemployment.

- 6 Japanese hoarded unemployment is especially pronounced in the 1960s and early 1970s. Tentatively, the OPEC shocks of the middle and late 1970s may have served to promote a more efficient utilisation of the labour stock compared with the earlier periods.