

TENURE IN THE DUTCH ECONOMY
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Abstract

The essential concept discussed in this paper is tenure, which is defined as the time workers stay with their current employer. Actual tenure is the time a worker presently has been working in the same firm. Of interest, however, is also how long employees eventually remain with their current employer. Data on the Dutch economy are used to examine the difference between these actual tenure and eventual tenure rates. These results are compared with those on other countries, especially the United States and Japan. It appears that although the average job tenure in the Dutch economy is rather low, a considerable part of the current workers ultimately develops long tenure. For instance about 10% of the workers currently has a tenure of 20 years or more, while almost 30% will ultimately develop tenures of 20 years or more.

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§ 1. Introduction

In discussions concerning the Dutch labour market its rigidity is frequently mentioned as an impediment to economic growth. One refers to the rigidity of the wage structure, the minor importance of flexible labour contracts or the relative immobility of labour. As a reaction to this public discussion a research field developed concentrating on topics as labour mobility (Mekkelholt and Hartog, 1989), the relation between wage incentives and mobility (Hartog et al., 1987), and the flow of labour in and out of employment, unemployment, and the labour force (Theeuwes et al., 1988).

Although the topic discussed below is clearly related, the purpose of this paper is more restricted. Without discussing the optimal level of mobility it is asked how long workers stay within an organization. This question originated in research into the internal labour market, which is defined as 'an administrative unit such as a manufacturing plant within which the pricing and allocation of labour is governed by a set of rules and procedures' (Doeringer and Piore, 1971). Many characteristics, for instance career opportunities, high wages, stable employment, and development of skills, are adhered to the internal labour market. Long tenure also appears as an important feature as it is noted that workers on internal labour markets develop long term employment relations. In this respect tenure is defined as the time workers stay within one firm, irrespective of their job changes.² To summarize the reasons why workers spend a large part of their working life with the same employer is beyond the purpose of this paper.³ Instead we are interested in estimating the time workers are expected to stay employed at the same firm.

Job tenure data from household surveys, such as the OSA survey used in this paper, provide information on actual tenure of workers, instead of completed job tenure (Salant, 1977). However, the completed job tenure can be calculated from these survey data by hazard function methods, which

² Although it would be better to use firm tenure instead of job tenure, since this research refers to the time workers stay at the same firm regardless of job changes inside the firm, the term job tenure will be used, as is common practice in this research area.

³ Reasons for the existence of long term labour relations can be found in human capital theory, screening theory and contract theory (see Bellmann and Schasse, 1990). For a summary of theories on internal labour markets see: De Grip (1985), Creedy and Whitfield (1988) and Wolfs (1988).

estimate the probability that a worker leaves the firm within a specified period. A less complex method, using more severe assumptions, is presented by Hall (1982), and will be used here to calculate the completed job duration distribution for the Dutch economy.

The paper is set up as follows. In Section 2 some results on the Dutch actual tenure distribution are presented, and compared to tenure distributions for other countries. In Section 3 a method to estimate the eventual job tenure distribution from survey data is examined. This measure is applied in Section 4 to find the distribution of eventual tenure for the Dutch economy. A comparison between these results and those for the U.S. is made. A discussion and conclusions are found in Section 5.

§ 2. Some characteristic data on actual tenure

A study on tenure rates for several countries was performed by the Organization for Economic Cooperation and Development (OECD, 1984). Some results are summarized in Table 1. These are restricted to those of Japan, the United States, Germany, France and the Netherlands. Japan is presented because it is known for its unique labour market, characterized by extremely high tenure rates and life time employment. The United States, depicted as an economy with a relatively high number of short term jobs, is presented as a contrast. Further, some European countries are presented to compare the Dutch figures with those of its neighbouring countries.

tenure	U.S. 1983	Japan 1982	France 1978	Germany 1972	Netherlands 1972
0-5	54.2	33.2	37.5	49.0	49.7
5-10	18.6	18.8	27.9	17.5	18.2
10-20	17.3	26.1	21.9	21.9	19.1
>20	9.9	21.9	13.2	11.6	13.0
average	7.2	11.7	8.8	8.5	8.2

Table 1: Distribution of tenure for five countries, in years (Source: OECD, 1984).⁴

⁴ The average tenure was calculated by taking the midpoint of each closed interval (and 27.5 for the open interval >20 years). Furthermore, the data on Japan and the United States had slightly different intervals: 0 to 4.5 years, 4.5 to 9.5 years, 9.5 to 19.5 years, and more than 19.5 years. The data on the United States refer to all employed persons and are

Although there are differences in the methods and definitions used in gathering the data (see note 4), that might influence the results, some remarks can be made. The tenure distributions over different categories for these five economies confirm the general descriptions of the Japanese and the U.S. labour market. Japan and the U.S. are relative opposite cases. Japan has the highest average tenure (11.7 years) and the U.S. the lowest (7.2 years). Further, almost 50% of the Japanese tenure rates exceed 10 years, while that number for the U.S. is only 27%. In the U.S. 54% of the tenure rates are below 5 years, while Japan has 33% of the workers in jobs which currently last less than 5 years. The European countries are intermediate cases between the U.S. and the Japanese economy. The differences in tenure rates between these European countries are less pronounced. The French economy has relatively high tenure rates, and the Dutch and the German economy are much alike. The median number of years is for the U.S. just below 5 years, for Japan about 10 years, for Germany and the Netherlands just above 5 years, and for France 7.75 years.

Tenure rates for the Dutch labour market can be further examined. The OECD data are collected in 1972. More recent figures can be calculated from a survey by the Organization for Strategic Labour Market Research (OSA) in 1985. This concerns a household-survey containing data on 4020 individuals of 16 years and older. Of these, 2292 persons are classified as a worker at the interview moment. Investigations have shown that the OSA data are fairly representative for the Dutch labour market (OSA 1987). In Table 2 the OECD data are compared to these more recent OSA data.⁵ Comparison of the distribution of the two surveys shows some differences. Especially the group with actual tenure between 5 and 10 years is larger in the OSA data (26%

collected by household surveys. Although the data on Japan are also collected by household surveys, they exclude agricultural employment. The European data are collected by the Statistical Office of the European Communities (Eurostat) from a sample of firms with 10 or more employees. They refer to all manual and non-manual workers in mining and quarrying, manufacturing, building, and civil engineer sectors. The service sector is included for France, not for Germany and the Netherlands. Furthermore, we mention that the data for European countries refer to employees, while the data on Japan and the United States include self employed (and unpaid helpers).

⁵ Since the OECD data exclude self employed the OSA data are also restricted to employees.

versus 18%), while the group workers with jobs already lasting 20 years is smaller in this set (10% versus 13%).

The Netherlands		
Tenure	OECD	OSA
<2	25.2	23.4
<5	49.7	42.9
5-10	18.2	26.1
10-20	19.1	21.2
15-20	6.7	7.8
>20	13.0	9.7

Table 2: Dutch tenure distribution in 1972 (from OECD 1984) and in 1985 (own calculations from OSA survey).

Several differences between these data sets might account for the resulting tenure distributions, but their ultimate effect is not clear. First, the service sector is included in the OSA data, while it is excluded in the OECD surveys. Second, the same applies to small firms with less than 10 employees, which are not part of the OECD data. Third, there is a 13 year span between the OECD data and the OSA data, covering a turbulent economic period, which might have affected the tenure distribution. And fourth, there is a difference in the way the data are collected. The data from the OECD are gathered by visiting firms, the OSA data come from household surveys.

tenure	Japan: 1982	United States: OECD 1983	NL OSA 1985
<1 year	9.8	27.3	15.9
<2 years	21.2	38.5	23.4
<5 years	33.2	54.2	42.9
1-5 years	23.3	26.9	26.9
5-10 years	18.8	18.6	26.1
10-20 years	26.1	17.3	21.2
10-15 years	15.7	10.9	13.4
15-20 years	10.4	6.4	7.8
>20 years	21.9	9.9	9.7

Table 3: Actual tenures for the U.S., Japan, and the Netherlands.
Source: OECD (1984), Hall (1982), OSA (own calculations).

In Table 3 the Dutch tenure distribution from the OSA survey, instead of that from the OECD data, is compared to those of the U.S. and Japan. This comparison might be preferable because the period in which the data are

gathered corresponds better, and because all three surveys are household surveys, which include the service sector, as well as small firms. The conclusion remains the same: the Dutch labour market is an intermediate case between the Japanese life time employment labour market and the U.S. 'hamburger' economy. Except for workers with tenures of 5-10 years all percentages lie between those of the U.S. and of Japan. Further, the share of workers with a tenure of 20 years or more is almost the same in the Dutch and the U.S. labour market; about 10%. The question however is how long workers can be expected to stay on the job.

§ 3. The problem with actual tenure: alternative tenure measures

As is emphasized in Section 1 the extent of eventual tenure is examined in this paper. More specific the eventual tenure distribution of those already working at a moment in time (in our case 1985) is called for. To use the age-analogy of Salant: we are not interested in the average age of a population but in the life expectancy of those currently living (Salant, 1977). It is interesting to note that with respect to tenure the former can be quite low, indicating short tenure spells for an economy, while the latter is high, indicating long tenure spells. In such an economy the average job tenure is low, while still a considerable part of the workers is in a job with long tenure. Such results are found for the U.S. (Akerlof and Main, 1981) and for Britain (Main 1981).

Our purpose is to compare the distribution of eventual tenure to the actual tenure distribution. Since eventual tenure cannot be measured directly it must be estimated by using some assumptions. Hall (1982) presents a method to estimate the probability that a worker of a given age and with a given tenure (referred to as an age-tenure category) will remain at the same firm for some time. In fact two methods are distinguished. One uses data of subsequent surveys, while the other is based on data of only one survey. In this paper the latter approach, which also appears in Hashimoto and Raisian (1985), Addison and Castro (1987), Carter (1988), Bellmann (1986), and Bellmann and Schasse (1990), is used.

Two concepts are essential to the method of Hall: eventual tenure and the retention rate. To use the terminology of Hall eventual tenure is the sum of actual tenure plus additional tenure. Additional tenure can be computed by the retention rate, which gives the probability that a worker retains in his current job for a number of years. More formally, suppose

that of the total population B the number of workers is N . N consists of L age groups from $i=1, \dots, L$, and of T tenure groups, with $j=1, 2, \dots, T$. A group aged (i) with tenure (j) is referred to as an age-tenure group. The k year retention rate is the probability that someone with age i and tenure j (age-tenure group ij) will remain with the same employer for at least another k years. Hall argues that this probability can be approached by comparing different age-tenure groups. The probability that a worker, of age i and tenure j , has an additional tenure of at least k years, can be found by relating workers with i and j to those with $i+k, j+k$. So the k year retention rate is the probability that a worker with age i and tenure j has an additional tenure of at least k years. The formula for the k year retention rate is

$$P_{ijk} = (N_{i+k, j+k} / B_{i+k}) / (N_{ij} / B_i)$$

The probability for additional tenure is determined by the chance to be in an age-tenure group multiplied by the chance to find work. In this approach the basic assumptions are that the tenure distribution within an age group remains constant, and that the participation rate in each age group remains the same over time.

Eventual tenure is the time a worker can be expected to stay (including his actual tenure). Now, eventual tenure rates can be found by using the appropriate actual tenure and retention rates. For instance, for workers with actual tenure of 5-10 years the 15 year retention rate gives the eventual tenure rate of 20 years of that age-tenure group. This eventual tenure is the probability that workers in that group develop a tenure of at least 20 years. Accordingly, for workers with an actual tenure of 10-15 years this eventual tenure rate of remaining at least 20 years can be found from the 10 year retention rate.

These eventual tenure rates can be computed for each age-tenure group. Remark that from a given age-tenure group the probability of an eventual tenure of at least k years can be estimated. So if we also have the probability of at least $k+1$ years, the probability of exactly k years is found by subtracting these two eventual tenure rates. Thus for every age-tenure group the distribution over all eventual tenure categories can be calculated. In a final step the distribution of workers over the eventual tenure categories can be computed and compared to the actual tenure distribution.

§ 4. Job duration in the Netherlands

In this section we show how the method of Hall is used to calculate the distribution of eventual tenure. In Table 4 the eventual tenure rates of 15 years or more are given for workers of different age-tenure groups.

age	actual tenure		
	0-5	5-10	10-15
<20	4.3	-	-
20-25	13.4	28.9	-
25-30	17.5	43.8	97.4
30-35	28.7	32.9	82.6
35-40	33.4	37.9	65.3
40-45	29.5	35.7	82.9
45-50	-	34.8	46.5
50-55	-	-	53.3

Table 4: 15 year eventual tenure rates. For instance the probability of a worker of 20-25 years with an actual tenure of 5-10 years to remain on his job for at least 15 years is 28.9

As explained in the previous section the eventual tenure rate is found from the corresponding retention rates. Table 4 shows that the probability to remain on the job for 15 years or more increases with actual tenure. For the workers with the lowest actual tenure eventual tenure rates increase with age, until the age is about 40. An explanation for this finding is that older workers can be expected to leave the workforce within 15 years. In the higher actual tenure groups this tendency is less clear. A second finding is that very young workers, who are still in the period of 'job shopping', have low eventual tenure rates. Higher eventual tenure rates can be found for workers with high actual tenure. About more than one third of the workers who are in the firm for 5-10 years reach tenures of at least 15 years, while even a higher percentage (between of 46% and 97%) of those who are inside the firm for 10-15 years reach 15 years. So probabilities of developing long term employment in the Dutch economy are considerable.

Comparable 5 year, 10 year and 20 year eventual tenure rates can be computed. With these subsequent eventual tenure rates, which give the probability of remaining inside the firm for at least 20 years, 15 years, 10 years, and 5 years, probabilities to reach an eventual tenure between 0-5 years, between 5-10 years, between 10-15 years, between 15-20 years and of

more than 20 years can be computed for each age-tenure group. If, for example, the probabilities of workers aged 25-30 with actual tenure of only 0-5 years, to reach eventual tenure of at least 5, 10, 15 and 20 years are resp. 53.0%, 26.8%, 17.5% and 10.6%, the probabilities to reach exactly 0-5 years eventual tenure, 5-10, 10-15 15-20 and more than 20 can be found by subtracting these numbers. In this example they have 47% chance to have no additional tenure (100% minus 53%), 26.2% of additional tenure of 5-10 years (53.0% minus 26.8%), 9.3% for 10-15 years, 6.9% for additional 15-20 years, and 10.6% for more than 20 years.

Since our interest is in the distribution of eventual tenure of all workers each age-tenure group is redistributed according to the probabilities mentioned above.⁶ This redistribution of all workers gives an indication of the eventual tenure distribution. In Table 5 actual and eventual distributions for the U.S. economy can be found in column 1 and 2, and those for the Dutch economy in column 3 and 4. If an eventual tenure of 15 years and more is defined here as life time employment⁷ the percentage workers in the U.S. economy which will eventually have a life time job is 32%. The percentage of those already having a life time job is not even half as high, namely 14%. Although Hall from these figures draws the conclusion that the U.S. economy does not differ much from the Japanese economy, Hashimoto and Raisian oppose to this view (Hashimoto and Raisian, 1985). Although they admit that long term employment also appears for a considerable number of workers in the U.S. economy, they show that Japanese labour relations still are longer than American.

In column 3 and 4 comparable results can be found for the Netherlands (for more details see Wolfs, 1990, Appendix III). The share of life time employment has more than doubled, from 17.7% to 42.7%. While the actual percentage of life time jobs was only slightly higher in the Dutch economy,

⁶ As follows: suppose 37 workers younger than 20 have actual tenure of 0-5 years. Suppose their probabilities to remain in the current tenure group is 85%, to reach an eventual tenure of 5-10 years is 10%, and their chance to reach more than 10 years is only 5%. Then these 37 workers are redistributed over these three categories in the following way: $0.85 \times 37 = 31$ workers appear in the 0-5 eventual tenure category, $0.1 \times 37 = 4$ workers appear in the 5-10 category and $0.05 \times 37 = 2$ workers in the last category.

⁷ Several measures for long term, or life time contracts, are in use, such as 10 years or more (Bergeijk and De Grip, 1986; Hall, 1982), 15 years or more (Bellmann and Schasse, 1990; Hashimoto and Raisian, 1985), and 20 years or more (Carter, 1988; Hall, 1982).

compared to that of the U.S. (17% versus 14%), the percentage of lifetime jobs to be expected is considerably higher in the Netherlands (42% versus 32%). In fact, the percentages for all jobs expected to last at least 5 years are higher for the Dutch economy. The median eventual tenure is twice the actual tenure, both for the U.S. and for the Dutch economy. Nevertheless the median value for the Dutch economy is almost twice that of the U.S.

tenure group	United States		Netherlands	
	actual	eventual	actual	eventual
0-5	60.1	42.0	42.8	18.7
5-10	16.7	14.8	26.1	22.9
10-15	8.7	10.4	13.4	15.7
15-20	5.0	4.7	7.8	13.8
>20	9.5	27.9	9.9	28.8
median (years)	3.6	7.7	6.4	12.7

Table 5: Distributions of actual and eventual tenure. Source Hall (1982) for column (1) and (2) and own computations with OSA survey (1985) for column (3) and (4).

Our conclusion is that by looking at actual tenure data the importance of long term jobs is underestimated. Using the method by Hall to approximate eventual tenures shows that in the Dutch economy a considerable number of workers eventually will hold jobs for a large part of their working life. Although the same result applies to the U.S., our results suggest that long term jobs are more important in the Dutch economy, compared to the U.S..

§ 5. Discussion and conclusions

By taking account of eventual, instead of actual, tenure, the distribution shows that a large part of the jobs currently in progress will last a long time. If life time employment is defined as a job which lasts 15 years or more, about 17% of those currently employed have developed a life time employment relation. Nevertheless, over 42% of the current workers ultimately will have lifetime employment in the same firm. Our conclusion therefore is that, although the average job tenure in the Dutch economy is rather low, a considerable part of the current workers ultimately develops long tenure.

Whether this means that high tenure rates lead to suboptimal outcomes is unclear. To conclude from these figures that the labour market is rigid,

and thus inefficient, is premature. There is no reason to argue for more flexible labour relations on the basis of these results alone. Instead, we should ask whether higher mobility rates, c.q. lower tenure rates, should lead to more efficient outcomes. Therefore it is necessary to ask why workers stay within the firm for a long time. If long tenure is the result of rational microeconomic behaviour, it is hard to argue for more efficient macro economic outcomes by increasing mobility. Tenure rates deal with the micro economic underpinnings of macro economic phenomena, such as unemployment and low mobility rates. The essence is to find out why workers stay within the same firm. In this respect in Section 1 we referred to research into internal labour markets, which investigates under what conditions workers and employer develop long term employment relationships.

It must be noted, however, that the way of computing individual eventual tenure distributions, as discussed in this paper, only gives a crude approximation of the Dutch eventual tenure distribution. In fact the analysis is based on worker differences in age and actual tenure, while research into internal labour markets shows that other variables, such as education, gender, job satisfaction, full time or part time work, and relative wage level, also play an important role in determining whether a worker will remain on his job or leave the firm. If one is interested in the influence of such personal and job characteristics on the probability to leave the firm, other methods, such as the hazard function method, provide more reliable and detailed information. However, as mentioned in the first section the purpose of this paper was limited to studying the importance of long term jobs in the Dutch economy by estimating the eventual tenure distribution.

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