The Promotion of White-Collar Workers in Large French Firms

Yasuki AMEMIYA*

Abstract

This paper aims to clarify the characteristics of French white collar workers' labour markets by examining how higher positions, i.e. the professional/managerial posts (Cadres) and the senior managerial posts, are filled. The analysis shows that though there exist a variety of routes for promotion of white-collar workers, many of the managers are internally promoted except technical managers and managers in commercial sector.

Keywords : Promotion, White-Collar Workers, French Firms, Internal Labour Market

* Fellow, Faculty of Economics, Nagoya City University

I. INTRODUCTION

A wide range of contradicting views exist on the subject of white-collar workers' labour markets in European countries. Those researchers who lay stress on white-collar workers' firm-specific human capital assert that "in every country white-collar workers' internal promotion is the mainstream type in general." On the other hand, there are researchers who assert that white-collar workers pursue their career and their higher wages in external labour markets which are founded on general human capital. Thus its actual state has not been sufficiently clarified.

It is said that France is one of the countries where internal labour markets are well-developed.[1] One way to test the predominance of internal labour markets over external labour markets is to examine the link between earnings and length of service with current employer (hereafter referred to as tenure). International comparison of wage functions which was recently conducted shows that, in France, tenure does not have strong effect upon earnings compare to other industrial countries.[2] Moreover, the preceding researches which analysed the wage functions of French male workers demonstrates that the coefficient of tenure, particularly that of white-collar workers considerably lowered in the 1980s.[3]

However, it is well known that there are various kinds of estimation bias in the coefficient of tenure in wage functions. For example, the American empirical researches point out that coefficient of tenure which is seen in the cross-sectional data does not indicate the wage rise effect but is merely a statistical artifact.[4] Therefore, it would be premature to conclude from these preceding researches that internal labour markets are no more predominant in French white-collar labour market.

This paper aims to clarify the characteristics of French white-collar workers' labour markets by examining how higher positions, i.e. professional/managerial posts (Cadres) and senior managerial posts are filled.

Chapter 2 of this paper reviews the preceding researches on the white-collar workers' tenure and verifies by examining the proportions of tenure which labour markets, i.e.

1) Maurice, M., F. Seiller and J. J. Silvestre (1984)
2) Tachibanaki, T. (1998) ed.,
3) Beret, P. (1992)
4) Abraham, K. G. and H. S. Farber (1987), Altonji, J. G. and Shakotko (1987)

internal or external, is more advantageous for being promoted to professional / managerial posts. In section 1 and 2 of chapter 3, the analysis is narrowed to the group with 12 or more years of formal schooling (hereafter referred to as education) and analyses by logit model those workers who were promoted to professional/managerial posts during the 5 years from 1988 to 1993 in manufacturing sector and tertiary sector respectively. Section 3 of chapter 3 analyses the promotion from professional/managerial posts to senior managerial posts. Chapter4 is the summary and conclusion of this paper.

2. WHITE-COLLAR WORKERS TENURE

This chapter reviews the preceding research on the white-collar workers' tenure. Koike (1991) who compared the workers' tenure in Japan and EC countries found out that although job hopping is more common in EC countries compared to Japan, quite a few workers do remain in one firm in Europe as well. Koike discovered that the European white collar-workers in particular remain in one firm longer than Japanese blue-collar workers of large firms. Based on these findings, Koike concludes that European white-collar workers are often promoted by "seniority" and "life-time employment" is quite common as well as " the mainstream type of promotion for white-collar workers is generally internal promotion both in Europe and Japan."

Table 1 is the structure of tenure of French male workers in manufacturing sector extracted from the Structure of Earnings in Industry1972 which Koike used. It is evident from this table that there are greater number of white-collar workers whose tenure is longer than that of blue-collar workers. However, in this data, it is possible that many of the bleu-collar workers are promoted to such positions as foreman and technician when they reach middle or advanced age and therefore are classified as white-collar workers. It is highly possible that the difference in tenure between white-collar workers and blue-collar workers arise from the difference in the age structure of white collar workers and blue-collar workers.

In order to control the age factor's influence, table 2 compares the proportions of tenure of blue-collar workers and white-collar workers who are between the age of 30 and 45. Looking at table 2 one could see that by controlling the age factor's effect to a certain degree the number falls sharply in the blue-collar worker's group with less than 5 years of tenure and white-collar worker's group with 20 or more years of tenure.

Table 1
The Structure of Tenure of French Male Workers in Manufacturing Sector
White-collar workers and Blue-collar workers

	Less than 2 years	2−4	5−9	10−19	more than 20 years
Blue-collar	25.7	23.2	19.2	19.8	12.1
White collar	13.0	17.1	19.3	27.1	23.5

Source: 1972 Structure of Earnings in Industry (EC)

Table 2
The Structure of Tenure of French Male Workers in Manufacturing Sector
White-collar workers and Blue-collar workers from 30 to 45 Years Old

	Less than 2 years	2−4	5−9	10−19	more than 20 years
Blue-collar	17.9	20.4	23.0	30.1	8.6
White collar	9.3	15.0	23.7	38.5	13.5

Source: 1972 Structure of Earnings in Industry (EC)

Therefore, one can conclude that the tenure of blue-collar workers and white-collar workers in tablel ware greatly influenced by the difference in age structure.

Next, let us examine separately the tenure of the white-collar workers who consist mainly of those who might be promoted from blue-collar to foreman (Maitrise) and those white-collar workers who are classified as professional/ managerial workers (Cadre). The data used here is La Structure des salaires dans l'industrie en 1972.

The age proportions of professional/ managerial workers and foreman are shown in table 3. However, one cannot see any significant difference in age proportions of the two groups. When one looks at table 4 which shows the proportion of the tenure of the two groups, i.e. professional/ managerial workers and foreman, more than half of the foremen served in one firm for more than 15 years but those foremen with tenure of less than 5 years account for slightly less than 20%. On the other hand, in the case of professional/ managerial workers, the tenure less than 5 years and more than 15 years account for one third of the total respectively. When white-collar worker's tenure is observed by separating the two groups, i.e. foremen and professional/ managerial workers, one could see that in the case of professional/ managerial workers, although many workers serve in one firm for relatively long years, there are quite a few workers who serve in one firm for relatively short years.

Professional/Managerial workers' tenure in the 1970s implies that there is one group

Table 3
The Structure of the Age in Manufacturing Sector in 1972
Professional/ managerial workers and Foreman

	−29	30−39	40−49	50−59	60−
Professional/ managerial workers	10%	28%	35%	19%	8%
Foreman	9%	28%	38%	19%	6%

Table 4
The Structure of Tenure in Manufacturing Sector in 1972
Professional/ managerial workers and Foreman

	−2	3−5	6−8	9−11	12−14	15−
Professional/ managerial workers	18%	14%	12%	11%	8%	37%
Foreman	10%	9%	10%	11%	10%	51%

Note: Establishments with 10 employees or more in manufacturing and civil engineering and construction industry.
Source: La Structure des salaires dans l'industrie en 1972, p.100

of workers who pursue their career in internal labour markets and there is another group of workers who develop their career in external labour markets as well. However, by the transformation of industrial structure and the trends toward more advanced education since the 1970s, the white-collar workers' labour markets might have undergone subtle changes. Therefore, the next chapter will examine the characteristics of white-collar's labour market in the 1990s by analysing the promotion to professional/managerial posts.

3. THE MODEL OF ANALYSIS AND THE RESULT

This chapter analyses the promotion to professional/ managerial posts by using the individual data of Formation et qualification professionnelle (FQP) which was conducted in May 1993 by Institut National Statistique et des Etudes Economiques (INSEE).[5] In this analysis, individual data of the following category of workers is used: those male French employees in private companies or state-owned companies who were between the age of 20 to 64 and were also working as full-time employees at least for one year without any interruption and on top of that made a declaration of their earnings in 1992.

5) This individual data was offered by INSEE on condition that the data be used for academic research purposes.

Table 5
Age, Tenure and Education of Workers Promoted to Professional/ Managerial Posts

	Promoted Workers	All Workers
Age	37.5 (7.47)	37.5 (8.06)
Tenure	11.1 (10.35)	12.70(8.56)
Education	14.88(2.08)	13.21(1.59)

Note: Standard Deviations are shown in parentheses.
Source: FQP1993

Therefore, female workers, civil servants, self-employed people, immigrant workers and part-time employees are not included in the analysis.

3-1 Analysis of Promotion to Professional/ Managerial Posts in Manufacturing Sector

The subject of analysis in this section is French male full-time employees working in manufacturing sector who had 12 or more years of education and had not yet promoted to the ranks of professional/ managerial posts as of 1988. Let us look at table 5 and examine the age, the tenure and the education of those workers who were promoted to professional/ managerial posts during the 5 years from 1988 to 1993. The average tenure of workers who were promoted is slightly shorter and the average year of education is slightly longer compared to those of the sample as a whole. On the other hand, there is almost no difference in the average age between sample as a whole and workers who were promoted. However, when one turns one's attention to the standard deviation of the age, the tenure and the education in parentheses of table 5, there is considerable dispersion in the age, the tenure and the education of those who were promoted. The cause of dispersion becomes apparent when the proportions of age and tenure are examined closely. It is because most of the workers who were promoted were either in their early 30s or late 40s and their tenure was either less than 5 years or 20 or more years. This means that even in the 1990s, workers who were promoted to professional / managerial posts in manufacturing sector can be classified roughly into two-groups: a group of internally promoted workers and a group of workers promoted from outside. Moreover, there are a group of workers who were promoted in their early 30s and a group of workers promoted in their late 40s.

Based on the characteristics observed above, the promotion to professional/ managerial posts in manufacturing sector will be analysed by logit model. The dependent variable

is promotion dummy variable in which workers who were promoted to professional/ managerial posts during the 5years since 1988 is 1 and workers who ware not promoted during the same period is 0. Explanatory variables are age, tenure and education. However, because promoted workers increase in two separate age groups, the age variable uses 4 terms and also because many of the promoted workers' tenure is either long or short, the tenure variable uses the first term and second term. And higher education is more advantageous to being promoted, the first term of education variable is used. The equation, dependent variable and explanatory variables are as follows:

$$PR=\beta_1 C+\beta_2 AG+\beta_3 AG^2+\beta_4 AG^3+\beta_5 AG^4+\beta_6 TENURE+\beta_7 TENURE^2+\beta_8 TENURE$$

PR: dummy variable in which workers who were promoted to professional/ managerial posts during the 5years since 1988 is 1 and workers who ware not promoted during the same period is 0.

C: Constant term

AG: Age

$TENURE$: Tenure

$EDCTN$: Education

$\beta_1 \sim \beta_8$: Parameters

Let us examine the result of analysis in table 6 which is aimed at large French firms with 500 or more employees. When one tests by likelihood ratio method whether the age and the tenure have an effect upon promotion to professional/ managerial posts, although it is not shown in the table, null hypothesis of age and null hypothesis of tenure are both rejected at the level of 1%. Next, when one examines each coefficient, the first and the third term of age variable are positive and second and fourth terms are negative. And all of the four terms of the age variable are significant at 5%. From these facts, one could conclude that biporarization of promotion age is statistically significant. In the case of tenure, the first term is negative and the second term is positive and both are significant at the level of 1%, which means that promotion significantly bipolarizes into a group of workers promoted from outside and a group of workers promoted internally. The education is significant at the level of 1% which means that longer education becomes more advantageous to being promoted. From these phenomena, one could conclude that the bipolarization of promotion which is seen in the age and the tenure is due to the fact that the ways workers are promoted are diverse even in within large

Table 6
Promotion to Professional/ Managerial Posts in Manufacturing Sector
Firms with 500 or more employees

Observations: 201

Variable	Coefficient	T-Statistic
C	−1397.284*	−1.966546
AG	148.4053**	1.980241
AG2	−5.869183**	−2.002860
AG3	0.101864**	2.024350
AG4	−0.000655**	−2.044957
TENURE	−0.423578**	−2.586925
TENURE2	0.015625***	2.832747
EDCTN	0.512651***	2.993559

Log likelihood −35.9
Obs with Dep=1 14
Obs with Dep=0 187
Fraction of correct predictions 0.92
*** Significant at 1% level. ** Significant at 5% level.
* Significant at 10% level.

manufacturing firms.

The probability of promotion to professional/ managerial posts in large manufacturing firms is strong when workers are either in their early 30s or on their late 40s, and is also strong when workers' tenure is either very short or very long. This suggests that groups with different attributes exist within workers who occupy the professional/ managerial posts in large manufacturing firms.

Let us consider here the primary factors which contribute to the diversity in the way workers are promoted to professional/ managerial posts by examining the personal data of workers. Table 7 is a summary of personal data of workers who were promoted to professional/ managerial posts during the 5 years from 1988 to 1993 and who belong to firms with 500 or more employees. The data is divided into two sections: personal data of workers who are less than 40 years old and personal data of workers who are 40 or more years old. Let us first look at the personal data of workers who were promoted when they were in their 30s which is summarised in table 7. The average age is 32.5, average years of education is 15.6 and the average annual income is 179.425 franc. And the types of job are sales representative, clerical work /management, R&D and maintenance. On the other hand, there are 6 workers who were promoted when they

were in their 40s. Their average age is 46.8, the average years of education is 13.8 and the average annual income is 185.875 franc. Those six workers were all managers in production department. The difference in the average years of education of workers in their 40s and workers in their 30s and the difference in the average income of workers in their 40s and 30s are not significant. Next, let us look at the personal data from the perspective of internal promotion and promotion from outside. In the case of workers who were promoted in their 30s, 3 workers out of 8 were promoted internally and 5 workers were promoted from outside. On the other hand, all of the six workers who were in their 40s were promoted internally. When one examines separately the personal data of internally promoted workers in their 30s and workers promoted from outside in their 30s, in the case of workers promoted internally, the average age is 33, the average year of education is 13.7 and the average annual income is 138.721 franc. In the case of workers promoted from outside, the average age is 32, the average years of education is 16.8 and the average annual income is 203.721 franc. When one tests if there is a difference in the education of internally promoted workers and workers promoted from outside, the null hypothesis of average years of education of both types of workers being equal is rejected at the significant level of 10%. Also, the null hypothesis of average annual income of workers promoted from inside and that of workers promoted from ourside being equal is rejected at the significant level of 1%. This means that those workers promoted from outside have significantly higher education and higher average annual income compared to workers internally promoted.

Based on the analysis of this section, if one asks for a reason why workers who were promoted to professional/ managerial posts in manufacturing sector diverge into two groups, i.e. a group of workers in their early 30s and a group of workers in their late 40s, one could conclude that it is because different systems of promotion exist in production department and other departments respectively. This implies that firm-specific human capital which can only be acquired through long tenure is demanded for production managers. On the other hand, in the case of workers who were promoted in their 30s, there are both internal promotion and promotion from outside. Many of the workers who were promoted to professional/ managerial posts from outside were technicians who obtained advanced education. They had longer years of education and their earnings were higher compared to internally promoted workers.

Table 7
Personal Data of Promoted Workers
Firms with 500 or more employees

Less than 40 years

Age	Education	Promotion	Tenure	Department	Earnings
37	14	Internal	14	Sales	120.000
31	12	Internal	9	Computer	141.164
32	15	Internal	11	Administration	155.000
35	21	External	4	R&D	174.000
29	17	External	2	Sales	192.000
30	17	External	4	R&D	200.000
33	14	External	4	Maintenance	203.235
33	15	External	2	Sales	250.000

More than 40 Years

Age	Education	Promotion	Tenure	Department	Earnings
46	13	Internal	23	Transport	140.000
49	15	Internal	28	Prdctn Cntrl	154.000
46	15	Internal	4*	Production	166.000
46	12	Internal	28	Production	166.252
48	15	Internal	26	Production	209.000
46	13	Internal	27	Production	280.000

Note: *indicates tenure after transfer within the current firm.
Source: FQP1993

3-2 Analysis of Promotion to Professional/ Managerial Posts in Tertiary Sector

This section analyses the structure of promotion to professional/ managerial posts in tertiary sector. The selection criterion of sample is the same as the manufacturing sector. Table 8 shows the average age, the average tenure and average year of education of workers who were promoted to professional/ managerial posts during the 5 years from 1988 to 1993. Promoted workers average age is slightly higher and their average years of education is slightly longer but their average tenure is slightly shorter compared to the sample as a whole. Incidentally, compared to promoted workers in manufacturing sector, promoted workers in tertiary sector have slightly higher age and the tenure and the years of education are slightly shorter. When one observes the age proportion of promoted workers, more than 80% of promoted workers are in their 30s and 40s and about half of the promoted workers tenure is less than 5 years.

Table 8
Age, Tenure and Education of Workers Promoted to Professional/ Managerial Posts

	Promoted Workers	All Workers
Age	39.2(7.5)	37.2(8.0)
Tenure	10.2(9.3)	11.6(8.4)
Education	14.5(2.1)	13.3(1.7)

Note: Standard Deviations are shown in parentheses.
Source: FQP1993

Table 9
Promotion to Professional/ Managerial Posts in Tertiary Sector Firms with 500 or more employees

Observations: 160

Variable	Coefficient	T-Statistic
C	−31.25400**	−2.262966
AG	1.498210**	2.128720
AG2	−0.017867**	−2.031053
TENURE	−0.239823	−1.617871
TENURE2	0.007132	1.335053
EDCTN	−0.027961	−0.155058

Log likelihood −36.06851
Obs with Dep=1 11
Obs with Dep=0 149
Fraction of correct predictions 0.93
** Significant at 5% level.

Based on the characteristics which were observed above, the promotion to professional / managerial posts will be analysed by logit model. Explanatory variables are the same as before except that the age variable has only two terms in stead of four.

Let us look at the result of analysis of large firms with 500 or more employees. When one tests by likelihood ratio method whether the age and the tenure have an effect upon the promotion to professional/ managerial posts, although it is not shown in the table, the null hypothesis of age is rejected at the level of 5% and the null hypothesis of tenure is not rejected. When one examines each coefficient in table 9, the coefficient of the first term and second term of age is significant at the level of 5% and 10% respectively. From the value of the first term and second term, one could find out that probability of promotion reaches its highest level when workers are in their early 40s. On the other hand, the coefficients of tenure variables are not significant. Moreover,

Table 10
Personal Data of Promoted Workers
Firms with 500 or more employees

Age	Education	Promotion	Tenure	Industries	Earnings
37	13	External	5	Commerce	103.200
40	12	External	4	Commerce	115.000
36	15	Internal	13	Service	120.000
35	17	External	2	Commerce	138.000
39	12	Internal	18	Transport	144.000
51	13	Internal	28	Transport	153.655
44	12	Internal	18	Commerce	156.000
49	12	Internal	28	Transport	163.000
33	15	Internal	8	Commerce	168.000
38	14	Internal	16	Service	180.000
37	14	Internal	6*	Finance	250.000

Note: * indicates tenure after transfer within the current firm.
Source: FQP1993

the coefficient of education is not significant either.

Table 10 shows the personal data of eleven promoted workers of large firms in tertiary sector. The average age of the promoted workers is 39.9, the average years of education is 13.5 and the average annual income is 153.714 franc. Out of the eleven workers, eight workers were internally promoted and three workers were promoted from outside. When one compares the age, the years of education and the wage of internally promoted workers and those who were promoted from outside, the average age is 40.9, the average years of education is 13.4 and average annual income is 166.832 franc in the case of internally promoted workers and the average age is 37.3, the average years of education is 14 and the average annual income is 118.733 franc in the case of workers promoted from outside.

When one tests the difference in the average age, average years of education and average annual income between the two groups, i.e. internally promoted workers and workers promoted from outside, one can not see any significant difference in the case of the average age and education but the null hypothesis that the average annual income of the two groups are equal is rejected at the significant level of 5%. In tertiary sector the average annual income of workers promoted from outside is significantly lower than that of the internally promoted workers. This result is contrary to that of manufactur-

Table 11
Age, Tenure and Education of Workers Promoted to Senior Manager

	Promoted Workers	All professional/ Managerial workers
Age	40.2 (6.0)	44.9 (7.8)
Tenure	8.8 (7.0)	13.1 (9.6)
Education	16.7 (3.0)	16.1 (2.6)

Note: Standard Deviations are shown in parentheses.
Source: FQP1993

ing sector. When one looks at promoted workers by industry, workers who were promoted from outside are confined to commercial sector.

3-3 Analysis of Promotion to Senior Management Posts (head of a department)

This section analyses the workers who were promoted from professional/ managerial posts to heads of a department. The subject of the analysis is a group of male regular employees who had 12 or more years of education and had already been ranked as professional/ managerial posts as of 1988.

Firstly, let us look at the average age, the average tenure and the average years of education of workers who were promoted. The promoted workers' average age and average tenure are slightly lower compared to those of the sample as a whole but one cannot see any large difference in the years of education of promoted workers and that of the sample as a whole. Secondly, although it is not shown in table 11, when one observes the age and the proportion of tenure, about 60% of the promoted workers were promoted between the age of 35 and 44 and slightly more than 90% of the promoted workers tenure is either less than 5 years or between 10 years and 20.

Here, promotion to senior manager will be analysed by logit model which uses age, tenure, education and technical dummy as explanatory variables. The analysis is conducted for all of the industries as well as tertiary sector. Those samples of workers who work for firms with less than 10 employees are excluded from the analysis. As far as the promoted workers' tenure is concerned, there are two different periods where concentration of promoted workers can be seen i. e. less than 5 years and between 10 and 20 years, and also the number of promoted workers decreases when their tenure is more than 20 years. Therefore, three terms for tenure variable are used in the analysis.

The technical dummy is added to the explanatory variables and by doing so whether the probability of promotion from technical workers to senior managers is different from that of non technical workers to senior manager is verified. The equation, dependent variable and explanatory variables are as follows.

$$PR=\beta_1 C+\beta_2 AG+\beta_3 AG^2+\beta_4 TENURE+\beta_5 TENURE^2+\beta_6 TENURE^3+\beta_7 EDCTN+\beta_8 CS38+\beta_9 NN$$

PR: dummy variable in which workers who were promoted to senior manager during 5 years since 1988 is 1 and workers who ware not promoted during the same period is 0.

C: Constant term

AG: Age

TENURE: Tenure

EDCTN: Education

*CS*38: technical dummy in which technical workers (ingénieur) are 1
non technical workers are 0

NN: firm size dummy; workers who work for firms with 500 or more employees are 1 workers who work for firms less than 500 employees are 0.

$\beta_1 \sim \beta_9$: Parameters

Firstly, when one tests by likelihood ratio method whether the explanatory variables of age and tenure have an effect upon the promotion to senior manager, although it is not shown in the table, the null hypothesis of age is not rejected and the null hypothesis of tenure is rejected at the level 10%. Secondly, when one examines each coefficient shown in table 12, all the three terms of the coefficient of tenure and the technical dummy are all significant at the level of 5%. The first term of tenure is negative, its second term is positive and its third term is negative. This means that the promotion to senior manager can be divided into two groups, i.e. those workers who were promoted from outside and those workers internally promoted. The fact that the third term of tenure is significantly negative implies that promotion to senior manager become gradually disadvantageous when the tenure exceeds a certain number of years. The technical dummy variable shows that the probability of promotion of technical workers is significant-

Table 12
Promotion to Senior Manager
Whole Sector

Observations: 225

Variable	Coefficient	T-Statistic
C	−10.85105	−0.760647
AG	0.501606	0.728260
AG2	−0.006796	−0.814185
TENURE	−0.890651**	−2.097887
TENURE2	0.099848**	2.094841
TENURE3	−0.002942**	−2.053253
EDCTN	0.073050	0.624005
CS38	−2.505677**	−2.287622
NN	0.471336	0.668319

Log likelihood	−38.43245
Obs with Dep=1	13
Obs with Dep=0	212
Fraction of correct predictions	0.94

** Significant at 5% level

ly lower compared to that of non technical workers. On the other hand, both the coefficient of age and the coefficient of education are not significant.

Next, let us examine the result of analysis in tertiary sector. When one tests by likelihood ratio method whether the age and the tenure have an effect upon the promotion to senior manager, although it is not shown in the table, the null hypothesis of age is rejected at the level of 5%. On the other hand, the null hypothesis of tenure is not rejected. When one examines the significance of each coefficient, the first and second terms of age variable are significant. This means that there is a concentration of promotion to senior manager at a certain age bracket. The first and second terms of tenure are both significant at the level of 10%. On the other hand, the third term of tenure coefficient and the technical dummy are negative but not significant.

Table 14 shows the personal data of workers who were promoted to senior manager in large firms during the five years from 1988 to 1993. Let us consider the characteristics of workers who were promoted to senior manager. Out of 9 workers who were promoted to senior managers, one worker is in manufacturing sector, one worker is in civil engineering and construction and 7 workers are in tertiary sector. Their average age is 41.1, average years of education is 16.7 and the average annual income is 338.889 franc. Out

Table 13
Promotion to Senior Manager
Tertiary Sector

Observations: 133

Variable	Coefficient	T-Statistic
C	−53.45969*	−1.757963
AG	2.596377*	1.723404
AG2	−0.033199*	−1.763425
TENURE	−0.906200*	−1.752796
TENURE2	0.093382*	1.694870
TENURE3	−0.002503	−1.580061
EDCTN	0.138100	0.938649
CS38	−1.666748	−1393141
NN	1.070129	1.127222

Log likelihood	−24.56325
Obs with Dep=1	9
Obs with Dep=0	124
Fraction of correct predictions	0.93

* Significant at 10% level

of 9 promoted workers, 6 workers were internally promoted and 3 workers were promoted from outside. In the case of internally promoted workers, the average age is 40.8, the average years of education is 16.8 and the average annual income is 319.666. On the other hand, in the case of workers promoted from outside, the average age is 41.7, the average years of education is 16.6 and average annual income is 377.333. One cannot discern any significant difference between internally promoted workers and workers promoted from outside regarding the average age, the average years of education and average income. As far as workers who were promoted from outside are concerned, two workers are in wholesale business, one is a technical manager in civil engineering and construction industry. Similarly to the workers who are promoted to professional/ managerial posts from outside, they are either technical manager or manager in commercial sector. These phenomena imply that for technical workers there exist external labour markets where general human capital is highly valued. Moreover, according to OECD (1993), the tenure by industry has borderless commonness and in any OECD countries tenure is shorter in civil engineering and construction industry and commerce compared to manufacturing sector. This section's analysis implies that in commercial sector, even in the case of large firms, external labour markets are quite dominant.

Table 14
Personal Data of Workers Promoted to Senior Manager
Firms with 500 or more Employees

Age	Education	Promotion	Tenure	Industries	Function	Earnings
34	16	Internal	11	Manufacturing	Administrator	168.000
38	17	Internal	13	Finance	Administrator	240.000
41	12	Internal	17	Transport	Engineer	250.000
39	12	Internal	16	Commerce	Administrator	300.000
34	15	External	3	Commerce	Administrator	328.000
38	18	External	2	Commerce	Administrator	384.000
53	17	External	3	Construction	Engineer	420.000
50	23	Internal	21	Service	Administrator	450.000
43	21	Internal	13	Service	Administrator	510.000

Source: FQP1993

Lastly, let us examine the difference in the average age and the average years of education of workers promoted to professional/ managerial posts and those promoted to senior managers in large firms in tertiary sector. The average age of workers promoted to professional/ managerial posts is 39.9 and that of workers promoted to senior manager is 41.1 and therefore there is no significant difference between the two groups. On the other hand, the average year of education of workers promoted to professional/ managerial posts is 13.5 and that of workers promoted to senior manager is 16.7. and the null hypothesis that the years of education of two groups being equal is rejected at the significant level of 5%. This means that there is no continuity between those who are promoted to professional/ managerial posts and those who are promoted to senior managers.

4. SUMMARY OF THE ANALYSIS AND CONCLUSION

In this section the result of the analysis is summarised. In manufacturing sector, workers who are promoted to professional/ managerial posts bipolarize into two groups concerning both the age and the tenure. This bipolarization in age and in tenure at which workers are promoted implies that in large firms in manufacturing sector, different kinds of promotion systems exist and workers with different attributes are promoted to professional/ managerial posts.

Workers who were promoted in their 30s can be divided into those who are internally promoted and those who are promoted from outside. Many of the workers who were promoted from outside are engaged in R&D and sales department and they received more advanced education and earn higher wages than internally promoted workers. On the other hand, workers who were promoted when they were in their 40s were all internally promoted and they all belong to production department.

If one interprets the above phenomena from human capital point of view, one could surmise that for professional/ managerial posts in production department, firm-specific human capital is highly valued and in R&D and in sales department, general human capital is highly valued. One could also surmise from the supply and demand point of view, that the job hoppers in technical workers could move under a favourable conditions due to the labour shortage of technical workers occurred in the 1980s.[6] On the other hand, in large firm in tertiary sector, the number of workers who were promoted from outside is smaller than workers who were internally promoted and they earn lower wages compared to internally promoted workers. All of the workers who were promoted from outside are in commercial sector. In large firms in tertiary sector, internally promoted workers are greater in number and are also at an advantageous position regarding wages compared to workers promoted from outside.

As far as promotion to senior managers is concerned, there are both workers promoted from outside and workers internally promoted. However, workers promoted from outside are confined to technical managers in civil engineering and construction industry and managers in commercial sector. This phenomenon coincides with that of manufacturing sector where those who ware promoted to professional/ managerial posts from outside were technical workers and that of tertiary sector where many of the workers were promoted to professional/ managerial posts from outside are commercial sector. These analysis suggests that for technical workers there exist external labour markets where general human capital is highly valued and also that in commercial sector the mechanism of external labour markets is dominant at a wide range of sphere including even the managers of large firms.

If one characterises the white-collar workers labour markets in France based on these analysis, one could say that though there exist a variety of routes for promotion of white-collar workers, many of the managers are still internally promoted if one excludes

6) Grandjean, C. (1987)

technical workers and managers in commercial sector. In the late 1980s, the white-collar workers coefficient of tenure in wage functions became negative. However, this phenomenon might be caused by the labour shortage of technical workers in the 1980s. The promotion analysis shows that the promotion of white-collar workers in large French firms remains centred around internal labour markets.

References

Abraham, K. G. and H. S. Farber (1987) "Job duration, Seniority, and Earnings," *American Economic Review*, Vol. 77, No. 3, pp. 278-297

Altonji, J. G. and R. A. Shakotko (1987) "Do Wages Rise with Job Seniority?" *Review of Economic Studies*, Vol. 54, No. 3, pp. 437-459

Beret, P. (1992) "Salairés et marches internes: Quelques évolution récentes en France," *Economie Appliquée*, Vol. XLV, No. 2, pp. 5-22

Doeringer, P. B. and M. Piore (1971) *Internal Labor Market and Manpower Analysis*, Heath

Eyraud, F. (1990) "Comparaison internationale des systèmes de classifications," *CFDT AUJOUR'HUI*, No. 99, pp. 15-12

Glaude, M. (1986) "Ancienneté, expérience et théorie dualiste du marché du travail: une etude sur donnees individuelles," Economie Appliquee, Vol. XXXIX, No. 4, pp. 847-876

Glaude, M. and J. P. Jarousse (1988) "L'horizon des jeunes salariés dans leur Entreprise," *Economie et Statistique*, No. 211, pp. 23-41

Glaude, M. (1989) "Salaires et carrières des ingénieurs diplômés," *Economie et Statistique*, No. 221, pp. 33-46

Grandjean, C. (1987) "L'individualisation des salaires," *Travail et Emploi*, No. 32, pp. 17-29

Jarousse, J. P. and A, Mingat (1986) "Un réexamen du modèle de gains de Mincer," *Revue é*conomique, No. 6, pp. 999-1029

Jarousse, J. P. (1988) "Mobilité professionnelle et représentation du fonctionnement du marché du travail," *Economie Appliquée*, Vol. XLI, No. 3, pp. 503-522

Koike, K. (1991) *Shigoto no Keizaigaku*, Toyo Keizai Shinpousha

Lheritier, J. L. (1992) "Les determinants du salaire," *Economie et Statistique*, No. 257, pp. 9-20

Lollivier, S. (1989) "Les salaires par qualification," *Economie et Statistique*, No. 221, pp. 23-31

Mallet, L. (1993) "L'evolution des politiques de promotion interne des cadres," *Revue française de gestion*, No. 94, pp. 38-48

Maurice, M., F. Sellier and J. J. Silvestre (1984) "The Search of a Societal Effect in the Production of Company Hierarchy: A Comparaison of France and Germany," in Osterman, P. ed, *Internal Labor Market*, The MIT Press

Maurin, E. (1991) "La rigidité de l'offre de carrières entretient les déséquilibres du marché du travail," *Economie et Statistique*, No. 249, pp. 89-100

Medoff, J. L. and K. J. Abraham (1980) "Experience, Performance and Earnings," *Quarterly Journal of Economics*, Vol. 95, No. 4, pp. 703-736

Nohara, H. (1995) "Les salaires en France et au Japon," *Travail et Emploi*, No. 62, pp. 59-71

Nohara, H. (1996) "Diversité nationale dans le mode d'articulation entre le système éducatif et le système productif: Comparaison France-Japon," *Bulletin de la société franco-japonaise de Gestion, No. 13, pp. 25-48*