

## Introduction

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Before the burst of the economic bubble in the early 1990s, the Japanese way of organizing labor within firms attracted considerable attention outside Japan. This interest was driven by two facts. First, the Japanese labor market emerged from the two oil shocks of the 1970s with a remarkably low unemployment rate, partly because of its allegedly flexible wage system.<sup>1</sup> Second, Japanese human resource management (HRM) practices were considered as a key comparative advantage in the remarkable performance of many export oriented Japanese industries (automobiles, electric appliances).<sup>2</sup>

With the prolonged economic downturn following the burst of the bubble, not only economic growth but also academic interest on Japan waned to some extent, and new questions started to emerge. Perhaps the most obvious is whether the Japanese way of organizing labor will survive the prolonged economic slowdown that is taking place, together with the rapid ageing of the Japanese labor force, or will Japan experience a rather dramatic structural change?<sup>3</sup>

The purpose of this book is to contribute to answering this question by looking at internal labor market (ILM), the typical way of organizing labor in large and medium-sized Japanese firms, and at their evolution during the past 20 years. Briefly, internal labor markets are employment systems characterized by four key features: (a) long-term employment relationships; (b) new hirings occurring at designated ports of entry; (c) allocation of labor after entry based mainly on internal promotion; (d) individual pay influenced by administrative rules and only partially affected by market forces.<sup>4</sup>

<sup>1</sup>See Ito (1992); Freeman and Weitzman (1987).

<sup>2</sup>See Womack, Jones and Roos (1991).

<sup>3</sup>See Nakatani (1996) for a view in favor of this latter hypothesis.

<sup>4</sup>See Doeringer and Piore (1970); Baker and Holmstrom (1995).

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## 2 Internal Labor Markets in Japan

Our focus is on such issues as promotion, recruitment, earnings profiles, and the evolution of wage and employment structures in large and medium-sized firms belonging to different industries. By so doing, we do not consider important topics and areas of research, including the large secondary sector composed mainly of small firms. Since the primary labor market that we analyze in this book is mainly a market for male labor suppliers, we also leave out the female labor market. Needless to say, a complete picture of recent developments in the Japanese aggregate labor market cannot ignore these important topics. Apart from the obvious reasons of space, one justification of our choice is that there is already important research that covers the ground not explored in this book (see for instance, Ito, 1992; Osawa, 1993; Ishikawa and Dejima, 1994; Yoshikawa, 1995; Tachibanaki, 1996).

Our approach is both theoretical and empirical, and the tools we use are those typical of modern economic analysis. This is not to say, the institutional context is not important. We do not subscribe, however, to the view, often heard in Japan, that the analysis of Japanese economic behavior requires the development of special analytical tools. Our approach has been much influenced by the important and path-breaking work on Japan by Masahiko Aoki and Kazuo Koike.

The book is organized in two parts. Part I (chapters 1–6) deals with different aspects of Japanese internal labor markets, including measurement issues, internal promotion, earnings profiles, and rent-sharing. Part II (chapters 7–10), focuses on recent changes and studies how the wage and employment structures of large and medium-sized Japanese firms have been affected by the slowdown in economic growth and by the ageing of the labor force. These important and long-lasting macroeconomic changes suggest that Japanese internal labor markets are also changing and that we may currently be observing the transition from the traditional to a new mode of organizing labor within large and medium-sized Japanese firms.

Part I includes two theoretical and four empirical chapters. In the introductory chapter (chapter 1), we use a very simple job-search environment, in the tradition of Diamond and Pissarides, to nest the concept of internal labor markets in a general equilibrium setup and to explore the relationship between productivity growth, labor turnover, unemployment, and the relative importance of internal labor markets. The model is built on a simple idea. In the presence of significant labor market frictions, firms can choose to fill skilled vacancies either by costly recruiting or by training and upgrading unskilled incumbents (internal promotion). This choice is influenced both by (exogenous) labor turnover and by (exogenous) productivity growth. For instance, when an economy

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grows faster, it is increasingly difficult to fill skilled vacancies from the market and internal upgrading becomes more important. When the economy slows down, training becomes an increasingly costly option, because of the higher number of skilled unemployed workers available in the market.

The predictions of the model are broadly consistent with a stylized characterization of the Japanese economy, featuring relatively high productivity growth, low turnover, low unemployment, and the widespread presence of internal labor markets. The model also implies that the slowdown in the rate of productivity growth experienced by the Japanese economy should over time reduce the relative importance of internal labor markets.

In chapter 1, we identify internal labor markets with the practice of internal training and promotion. In chapter 2, we look more closely at promotion, and develop a model of job allocation and investment in heterogeneous human capital in a two-layer corporate hierarchy. The model highlights the critical role played by the proximity of skills and by training in shaping the promotion policy and the hierarchical structure of firms. The higher the degree of proximity of skills, the higher the human capital complementarity among different jobs within a hierarchy. The degree of proximity depends not only upon technological conditions, but also upon the way jobs and training systems are designed.

We show that, depending on the degree of skill proximity, there can be two types of firm. In one type, skill proximity is relatively high, skill formation is predominantly internal, and involves a long, continuous accumulation process along promotion ladders where jobs with closely related skills are lined up in a progression. Experience within the hierarchy and along these promotion ladders is the most important determinant of promotion decisions. Promotion timing can be delayed substantially for some employees, hiring decisions are based upon stringent standards, and income distribution within the firm is fairly equal. Not surprisingly, these characteristics fit almost exactly the stylized facts about large Japanese firms, viewed as having a well developed system of internal labor markets.

In the other type of firm, skill proximity across tasks is relatively low, internal training is less common, and inter-firm mobility is higher than intra-firm mobility. Because of the relative independence of jobs, qualifications and innate talents at the start of the career largely determine job assignments. Internal promotions, if they occur at all, are concentrated in the early stages of a career and workers are highly specialized. The demarcation between upper and lower ranks in the hierarchy is also more clear-cut. Experience in lower ranks may be helpful to increase

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productivity in lower-ranked jobs but is not helpful to increase productivity in upper-ranked jobs. There are multiple ports of entry, with less demanding hiring standards and larger earnings differentials between upper- and lower-ranked jobs. All these characteristics are more commonly found among UK and US firms.

Chapter 3 inaugurates the empirical section by asking how can we measure the relative importance of internal labor markets in an economy. The distinction between internal and occupational labor markets (OLM) can be implemented empirically only with the development of informative indicators, that go beyond vague standard measures such as firm size and average seniority. In chapter 3 we develop an alternative indicator, based on the comparison between firm-specific and occupation-specific tenure, and apply it to Japanese occupational data. This measure is derived from human capital theory and is based on a very simple idea: if skills are developed mainly within firms, as suggested by internal labor market theory, firm-specific tenure (seniority) should be at least as important as occupation-specific tenure. On the other hand, if skills are developed mainly in the market, occupation-specific tenure should be more important than firm-specific tenure.

We find that a classification of the top and of the bottom 20 occupations based on the value taken by our indicator is in line with common economic sense. We also find that our measure is positively correlated with both average seniority and average firm size, but that these variables explain only about one-third of its total variation. Next, we test whether our measure of the degree of labor market internalization has information content by estimating Japanese wage–seniority profiles. It turns out that the slope of these profiles is positively correlated with our indicator. In particular, occupations with a higher degree of internalization have steeper earnings profiles, independently of firm size. Interestingly, we also find that the impact of a high value of internalization on the slope of wage–seniority profiles is larger among small and medium-sized firms. We consider this result as suggestive of the fact that internal labor markets extend beyond large firms. Apparently, it is not firm size alone that identifies the presence of these markets, but also the type of occupation. When an occupation is organized in internal labor markets, pay and HRM practices are affected both in large and in small and medium-sized firms.

Chapter 4 looks at earnings profiles, a key feature of internal labor markets. We start by noticing that standard estimates of earnings profiles ignore that, with unobserved heterogeneity, cross-section evidence need not reflect the “true” relationship between earnings and tenure. We then argue that the observation of the position filled by an employee in the

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firm hierarchy is informative both of her quality and of the quality of her match. Under some additional assumptions, this information can be used to construct an unbiased estimator of the effects of tenure on earnings growth.

We apply this simple idea to Japanese and British data, and find that tenure effects are less important than the effects estimated with the traditional approach used by Hashimoto and Raisian (1985). The difference, however, is small. Conditional effects, obtained by conditioning earnings on the hierarchical position or rank, make up a substantial part of the overall impact of tenure on earnings, especially for short-medium tenure spells and in large firms. While within-rank earnings growth is important earlier on in a career, between-rank earnings growth becomes more important as tenure increases, especially among small and medium-sized firms.

Interestingly, we find that both conditional and unconditional seniority premia are smaller in the United Kingdom than in Japan, and that the ratio of unconditional to conditional premia, measuring the importance of between-rank earnings growth, is higher in the former. This difference is particularly significant in the manufacturing sector, and confirms the common view that internal labor markets are less widespread in the United Kingdom than in Japan.

Chapter 5 presents the analysis of case studies illustrating the recruitment and promotion practices of large Japanese firms. In the absence of aggregate data, especially on promotion, personnel data trade off the advantage of being a detailed representation of HRM policies with the disadvantage of not being representative of the universe of large Japanese firms. Our analysis partly confirms, and partly casts some doubts, on the well known stylized facts about career development in large Japanese firms, including late selection in promotion and a strong preference for regular recruits. In one firm where we have data, we find both that irregular recruits are important and that there are multiple ports of entry and exits for such recruits.

In most of the firms studied in this chapter, firm-specific tenure matters for promotion. Merit, however, is also important, and in one case it is the key determinant. Importantly, the relevance of seniority in the promotion decision does not imply that the speed of promotion is equal. Conditional on tenure and education, our evidence suggests that “fast flyers” in lower ranks are more likely to fly faster to higher ranks. The presence of fast promotion tracks suggests that individual performance, given seniority and other individual characteristics, is likely also to play a decisive role in promotion in large Japanese firms operating internal labor markets.

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Chapter 6 investigates the interaction between competition within the firm and competition among firms in the labor market. This interaction is important because most of the arrangements discussed in this book cannot be implemented unless firms and employees are to some extent insulated from the discipline of the external labor market. Take, for example, the late selection approach to promotion investigated in chapter 5. Unless firms have an information advantage with respect to other firms over the quality of their employees, or there are frictions preventing employees from freely seeking their best employers, such a policy is clearly untenable. Given the fact that the large majority of white-collar workers in large Japanese firms tends to stay with one firm for an extended period of time, there is little doubt that firms do have at least some room to choose and design their employment and wage policy in order to meet specific needs and conditions. An important question is therefore to what extent these firms are insulated from the external labor market.

Our empirical analysis, based upon micro data, finds evidence that major Japanese firms and their employees are insulated from the pressure of the external labor market. In particular, workers of firms with higher price markups have both longer average tenure and higher average wages. At the same time, however, we find no evidence that the wage policy of firms, measured either by the slope of the wage–tenure profile or by the initial wage, significantly affects productivity, that is influenced instead negatively by price markups and positively by the presence of a main bank relationship. These results underline the importance of external monitoring and discipline mechanisms that induce firms to maintain production efficiency.

Part II of the book, focusing on changes in Japanese internal labor markets, begins with chapter 7, presenting a qualitative analysis of changes in the Japanese employment system. After describing the main changes underway, we argue that these changes differ in important ways from previous episodes, mainly because the management of major firms is hard pressed by the need to make organizations leaner, cost efficient, and more flexible. At the same time, however, there is also strong inertia in the current system, especially in the ranking system (*Shokuno Shikaku Seido*) that remains the basis of the employment relationship in most of these firms.

Chapter 8 turns to the data and looks at the evolution of wages and employment in large and medium-sized firms belonging to manufacturing, trade and distribution, and finance during the period 1976–96. To highlight the changes taking place in internal labor markets, we use data that distinguish employees by rank, or the position filled in the vertical hierarchy, and look both at relative wages (by rank) and at relative

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employment (spans of control). The main findings of the chapter can be summarized as follows:

- (1) With the deceleration of output and employment growth, there is evidence of a long-term decline in both relative wages and spans of control. Hence, there are relatively more individuals in higher ranks, but their relative wages are lower.
- (2) There is evidence of convergence in the wage and employment structure of large and medium-sized firms, indicating that these firms are becoming increasingly similar in terms of hierarchical structures and compensation systems.
- (3) Average age and tenure have increased over time, especially among medium-sized firms.
- (4) Both promotion rates and promotion premia declined in the 1990s, and average promotion age slightly increased.
- (5) Fluctuations in average promotion rates are positively correlated to fluctuations in five-year real sectoral output growth.

Slower growth has affected the career opportunities of young workers in large and medium-sized firms, but has not affected the average length of the employment relationship, which has actually increased, because also of the reduced intake of young workers and the limited turnover of older workers.

An important question is whether the slowdown in the rate of growth and the ageing of the labor force has affected the slope of earnings profiles and the (expected) returns to tenure. In chapter 9, we compare earnings profiles ten years apart, during 1980–4 and 1990–4, and show that (1) average tenure has increased more than average age: with small changes in educational attainment, previous labor market experience has declined, especially among medium-sized firms; (2) the returns to tenure, both conditional and unconditional, have declined in both large and medium-sized firms: the reduction has been sizeable, especially for longer tenure spells; (3) the returns to previous labor market experience have increased.

We argue in chapter 1 that sustained economic growth is key to the development of internal labor markets. By increasing the ratio of vacancies to unemployment, higher growth makes labor market matching relatively more difficult and encourages firms both to use internal upgrading and to establish long-term employment relationships by rewarding tenure. When growth slows down, however, the required skills can be more easily obtained from the labor market, and internal labor markets are partly replaced by occupational labor markets. At the same time, the progressive ageing of the labor force reduces the pool of young labor



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market entrants, who are expected to fill the lower rungs of promotion hierarchies in internal labor markets, thus increasing the relative wage of new entrants and making internal upgrading more costly compared to the market procurement of skilled employees.

As shown in chapter 2, labor market experience matters more in occupational labor markets, and tenure is more important in internal labor markets. The observed decline in the returns to tenure and the increase in the returns to labor market experience can thus be taken as indicating the increased importance of occupational labor markets among large and medium-sized firms, induced by the slowdown in the rate of economic growth and by the ageing of the Japanese labor force.

In chapter 10, the last chapter of this book, we explicitly relate the observed changes in the wage and employment structures of large and medium-sized firms with both long-run and short-run changes in the rate of economic growth. We start the chapter with a simple theoretical model that clarifies the interactions between economic growth and the structure of wages and employment in firms that organize labor in internal labor markets. Compared to the models in chapters 1 and 2, this model brings into the picture the important role of promotion in modern organizations, to provide incentives to employees when there is limited information about individual actions. The model predicts that a slowdown in the rate of growth that reduces employment growth in corporate hierarchies should also reduce rank-specific relative wages, promotion rates, and spans of control. These predictions are supported by our empirical analysis. We also show that alternative stories, such as skill-biased technical progress, cannot explain the observed joint occurrence of lower relative wages, lower spans of control and lower promotion rates.

We next look at the relationship between rank-specific relative wages and business cycle fluctuations, and find limited support in our data for the view that wages paid to workers in lower ranks or with shorter seniority spells are more responsive to short-term variations in output per head. Hence, there is no clear evidence that workers near the ports of entry of internal labor markets are less sheltered from business fluctuations. One possible explanation of this result is that we consider only regular workers, who belong to the employment core of large and medium-sized firms, and ignore both temporary workers and employees of small firms, who belong to the employment periphery and are more exposed to the consequences of business fluctuations. We find instead interesting differences among industries. In the manufacturing industry, real wages are pro-cyclical but the wage structure is a-cyclical. In the finance industry, wage differentials by rank vary with the ups and



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downs of the sectoral cycle; in this industry, it is the wages of employees with higher ranks that are more responsive to business fluctuations.

Going back to the question raised at the beginning of this introduction, this book has identified important features of Japanese internal labor markets and produced evidence that substantial changes involving all these features are taking place under the pressure of lower growth and of an ageing labor force. On the other hand, we also find evidence that the employment structure of medium-sized firms is converging towards that of large firms.

At the risk of simplifying things, the future of the Japanese employment relationship in the primary sector of the economy faces two rather distinct options. One is to more or less completely abandon the current employment system and move towards the more market oriented Anglo-Saxon system. The other is to minimize the costs of the current system – for instance, by eliminating age-related elements in individual pay and by reducing promotion probabilities for incumbent employees – and to maintain it in an important segment of large and medium-sized firms. Our evidence suggests that this second option represents the most likely scenario, and we come back to this in the epilog of the book.

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## **Part I**

# **Features of Japan's internal labor markets**

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