Pay, promotions, and performance

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PART 1

1 INTRODUCTION

Personnel economics as a relative young field of research offers many research opportunities with both theoretical and managerial relevance. This dissertation contributes to the field of personnel economics by means of four empirical essays. Before discussing the cohesion of the essays and their specific contribution, I first discuss the foundations and history of personnel economics.

1.1 History of Personnel Economics

As a research field, labor economics seeks to understand the functioning of the market for labor. However, until recently, labor economics was mainly focused on the supply side of the labor market. And, if the demand side of the labor market was studied, firms were regarded as simple entities that demand labor. Hence, classical labor economists disregarded all sorts of personnel issues such as hiring and firing, job assignments, rewards and performance measurement. The organizational effectiveness of the employment of the factor labor within firms was left to industrial psychologists and sociologists (Lazear, 1995). In fact, economists neglected to a large extent what goes on inside organizations until the early 1970s (Stiglitz, 1991).[1] However, the development of agency theory marked by the seminal studies of Ross in 1973 and Jensen and Meckling in 1976 induced some labor economists to dig into the black box of labor issues within the firm, and hence the research field of personnel economics was born.

Personnel economics is defined as “the field that uses incentive devices and economic analyses to think about human resources issues” (Lazear, 2000a). Personnel economics has primarily originated as a theoretical field and has developed rapidly over the past 30 years, but empirical studies in the field were lacking in the first years (Baker and Holmstrom, 1995), a rare exception being the study of Medoff and Abraham (1980). Since the studies by Lazear (1992) and Baker, Gibbs and Holmstrom (hereinafter BGH, 1994a & 1994b), empirical studies have started to develop too and the field can be said to be mature. The four essays of my dissertation will add to this growing quantity of empirical work.

From an economic perspective, the separation of ownership and control is a cornerstone of personnel economics. The conflict of interest that arises and the negative impact this will have on motivation and thus production are substantial, an observation that dates back to (at least) Adam Smith.[2] As Lazear (1995) mentions, traditional production theory provides no answer on how wages should be structured to motivate employees. The separation between ownership and control has been further developed and modeled by Berle and Means (1932), Ross (1973) and eventually developed into the renowned agency theory of

[1] Before the 1970s, there was a (small) stream of economics research that dealt with intra-organizational issues. Particularly well known is managerial economics, as it became known, with figureheads like Baumol, Coase, Marris, Simon and Williamson. Two examples are Simon (1951) and Williamson (1967).

[2] “The directors of such companies, however, being the managers rather of other people’s money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master’s honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company” (Smith, 1776, Book 5, Chapter 1, Part 3, Art. 1).

Jensen and Meckling (1976). Although this theory comes close to being a foundation for answering personnel questions from an economic perspective, it is still incomplete (Lazear, 1995).

Besides agency theory, one should also consider the theory of internal labor markets (ILMs), which has its origins in sociology, as a fundamental theory of personnel economics. The ILM can best be characterized as a market that is governed by administrative rules. Doeringer and Piore (1971, p.2) were first in describing the characteristics of the ILMs:

> *"The internal labor market, governed by administrative rules, is to be distinguished from the external labor market of conventional economic theory where pricing, allocating, and training decisions are controlled directly by economic variables. These two markets are interconnected, however, and movement between them occurs at certain job classifications, which constitute ports of entry and exit to and from the internal labor market. The remainder of the jobs within the internal market are filled by the promotion or transfer of workers who have already gained entry. Consequently, these jobs are shielded from the direct influences of competitive forces in the external market."*

Although the initial reception was not entirely positive (e.g. Flanagan, 1972), some economists (e.g. Tobin, 1972) as well as sociologists (see Althauser, 1989) picked up this work immediately. The importance of ILMs is, for example, marked by the tournament model, a model that indicates how internal job movements potentially solve the conflict of interests caused by the separation of ownership and control.

The combination of the notion that the separation of ownership and control incites agency problems and the growing interest in how ILMs are organized has led to the development of personnel economics.[3] Over the last decade, the number of publications that can be classified as being (related to) personnel economics has increased steadily. Figure 1.1 shows the growing interest in a field that currently takes up approximately 27 percent of labor economics in general.[4]

The next section presents the problem statement and the specific research questions of this dissertation.

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[3] Naturally, other theories have contributed to personnel economics as well. The most relevant theories, including the ones not mentioned thus far such as human capital theory, will be discussed in detail in Chapter 2.

[4] Using the Econlit database, part of EBSCO Host Research Databases, as a source, I classify J31 (Wage level and structure; wage differentials by skill, training, occupation, etc.), J41 (Contracts: specific human capital, matching models, efficiency wage models and internal labor markets) and M5 (personnel economics) as publications within the field of personnel economics. The M5 classification code was not available prior to the year 2000, which on its own is an indication of the growing interest in personnel economics. I list the number of publications classified as personnel economics relative to the total number of publications within Labor and Demographic Economics (the complete J-classification code and the M5 classification code) for the period 1994-2004. The line across Figure 1.1 depicts all publications (journal articles, as well as books, working papers, dissertations, etc.) available in the database. The, in total, 50,534 publications within labor economics include 9,410 publications that are classified as personnel economics within this 11-year period.

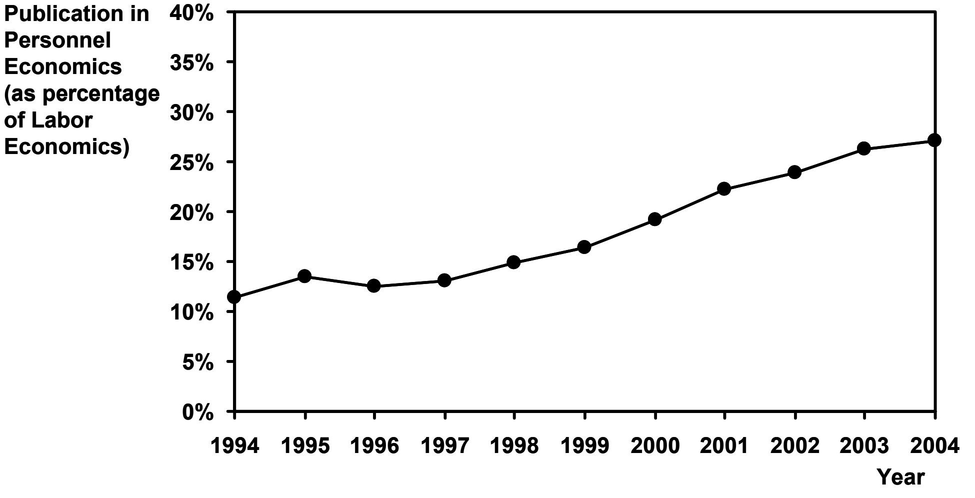

Figure 1.1: Publications per classification code (JEL)

1.2 Problem Statement and Scope

In this dissertation, I analyze how and to what extent the design of a compensation system, e.g. incentive compensation and the wage structure of the organizational hierarchy, can motivate employees to display value-creating behavior. This study is a combination of four separate essays in the field of personnel economics. The following problem statement is a common denominator of the four essays:

> *In what way do the design of a compensation system, the internal labor market, and external job mobility possibilities motivate workers?*

Figure 1.2 schematically depicts two organizations with different job levels and their corresponding wages. The four arrows represent four different research questions covered by the four separate essays that make up the problem statement. I briefly introduce the four questions that are central within the different chapters of Part 2. Together, they provide answers to the problem statement.

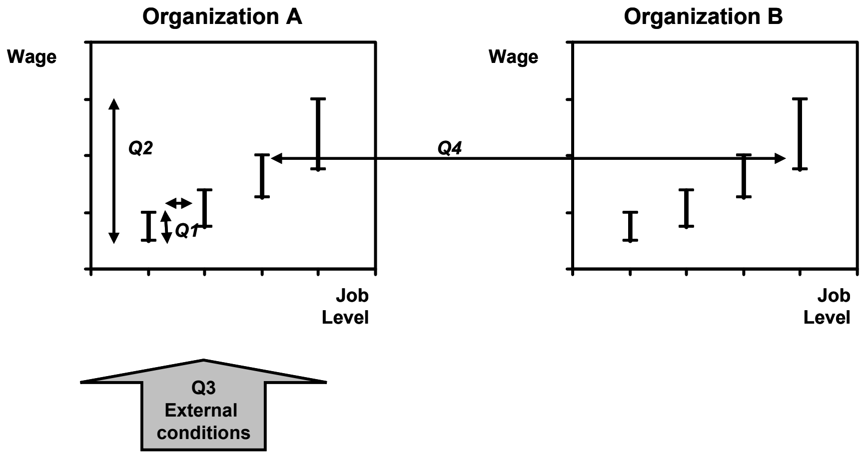

Figure 1.2: Outline of dissertation

1.2.1 Q1: What is the effect of performance measurement and compensation on motivation?

Chapter 3 deals with the first research question: "What is the effect of performance measurement and compensation on motivation?" In Figure 1.2, the arrow Q1 depicts the career dynamics that are central in this first study: wage differentials within a job level and promotion opportunities. A conceptual model building on economic and psychological theory is developed that interrelates the incentive effect of three components: namely, the monitoring and feedback system, monetary compensation, and promotions. To test this model, the relationships between the employees' perception of these components and their level of extrinsic and intrinsic motivation are measured empirically. Besides direct measures of extrinsic and intrinsic motivation, also analyzed is the effect of the model's components on overall work satisfaction, turnover intent, and sick leave. A single company serves as a research site, while a survey among the personnel delivers the necessary data. The results show a positive relationship between the perceived characteristics of the compensation system and extrinsic motivation. Promotion opportunities also affect intrinsic motivation, but this type of motivation is not affected by the design of the monetary compensation system.

1.2.2 Q2: To what extent do careers within an organization motivate employees?

The second research question, analyzed in Chapter 4, focuses explicitly on the hierarchy and wages per job level. The incentive effect of job movements within a firm is central (arrow Q2). Again, a single, but different, company is used to collect the data. From this company, three data sources are merged: namely, the collective labor agreement, the personnel files, and a survey among the workers. The analysis of the collective labor agreement and the personnel files shows that most incentives within this particular company are indeed caused by career concerns, making this company an appropriate setting to investigate the research question. The empirical analysis of the survey shows that this most important incentive device, i.e. career opportunities or promotion opportunities, is quite strong and triggers motivation, both extrinsic and intrinsic. The positive effect of promotion opportunities on extrinsic motivation is a key assumption of tournament theory, but has, as such, not yet been tested in economics. The positive effect of (a realized) promotion on intrinsic motivation has not yet been established either.

1.2.3 Q3: In what way are external conditions related to mobility within the firm?

The previous two research questions focused on the design of a compensation system within a single organization and how the motivation of individual workers is affected by this design. Chapter 5 covers the third research question (arrow Q3), focusing on the effect of external conditions on the ILM. By answering this question, the circumstances that allow the application of internal job mobility as a motivational instrument are analyzed. Whereas the literature regarding CEO-turnover has emphasized how firm characteristics in general and financial performance in particular influence hiring and turnover decisions, the potential impact of these factors on the complete ILM, including levels lower than the CEO, has not yet been analyzed. Four determinants are distinguished, i.e. firm size, firm growth, industry, and profitability. The relationship between these determinants and a specific stylized fact of ILMs, i.e. the employment of specific ports of entry and exit, is empirically investigated, using a multiple-firm approach based on Danish employer-employee matched data. The results show that these factors do indeed affect ports of entry and exit and should be taken into account when establishing the boundaries of ILMs.

1.2.4 Q4: Is there an optimal amount of job mobility between organizations for employees?

The fourth research question (arrow Q4) is studied in Chapter 6 and also investigates the boundaries of the ILM. While the previous research questions focus on those conditions that enable internal mobility, this research question takes job mobility (i.e. job movements between firms) as a starting point. Economic theories so far have supported the idea that efficiency and wages are increased, or in any case, not decreased, if agents achieve tenure as much as possible. Examples of such theories are the mover-stayer model, human capital theory and matching models. Job mobility in these theories leads to the loss of firm-specific human capital and thereby a wage reduction. Finding a better-matched job is used as an argument to explain why workers do switch from time to time. This study includes a novel rationale for job switching. It is proposed that workers are likely to learn new abilities after a switch, which they can combine with skills gathered in previous jobs. The coalescent human capital that is created can actually increase wages after a job switch. Matched employer-employee data from Denmark (see Chapter 5) are used to assess empirically the relationship between job mobility and the current wage level of employees. The results do indeed point towards a confirmation of the proposition that job switching might be beneficial for an employee’s wage level.

1.3 Relevance

The studies covered in this dissertation are of both academic and managerial relevance. The theoretical relevance is shown by discussing the added value of the findings to the field of personnel economics. The managerial relevance consists of implications for the (strategic) management of companies.

1.3.1 Theoretical relevance

As was pointed out, personnel economics has been a growing field of research. Mainly originating as a theoretical field, the need for empirical studies became obvious in the early 1990s and was expressed by Baker and Holmstrom (1995) in their study *Internal Labor Markets: Too Many Theories, Too Few Facts*. This call for more research has been used to motivate a stream of empirical studies (e.g. Hamilton and MacKinnon, 2001; Howlett, 2001; Grund, 2005; Lin, 2005; Kwon, 2006). However, the argument still remains valid to day as noted by Lin (2005).

Recently, empirical studies have contributed to the field by utilizing new sources of data that have become available. First of all, companies have electronically gathered useful personnel records, which are becoming more and more accessible for academics. Second, matched employer-employee data sets have been created by several, mostly Scandinavian, countries. These two sources of data form a solid basis to counteract the observation made by Baker and Holmstrom.

Additionally, studies in the field of personnel economics have now begun to integrate theories from the sociological and psychological literature (Fehr and Falk, 2002) in economic studies to explain employee motivation. For example, Frey (1997a) notes that, while economists have greatly neglected the psychological effects of compensation on intrinsic motivation, organizational psychologists have already analyzed the concept of motivation in more detail for many years. They have explored relationships with all sorts of external and internal conditions, both theoretically and empirically (Locke and Henne, 1986), although mostly experimentally. For (personnel) economists this incorporation of sociological and psychological literature offers new empirical research opportunities.

To recapitulate, personnel economics is a field that is attracting growing interest, but is still in need of more empirical studies and can also continuously benefit from other fields outside of economics. It is within these arguments that the academic relevance of this dissertation lies. All essays are of an empirical character and use either personnel records from a single company (Chapters 3 and 4) or matched employer-employee data (Chapters 5 and 6). Moreover, concepts such as intrinsic motivation (Chapters 3 and 4) and learning (Chapter 6) are introduced and their determinants are tested empirically.

1.3.2 Managerial relevance

Presumably, the growing public interest in compensation systems has been caused by the strong increase in CEO salaries, which have attracted a great deal of public attention. CEO remunerations, being tied to company stock price performance through stock options, have benefited from the bull market of the 1990s. Murphy (1999) formulates three factors that explain the interest in CEO compensation:

1. Since the 1980s, high CEO salaries have been associated with massive layoffs and restructuring programs.

2. Escalation in the level of compensation: real, total CEO compensation (including stock options) has nearly quadrupled in the U.S. in the period 1970-1996.

3. The bull market of the late 1990s (i.e. the Internet bubble) has led to soaring stock prices in general, to which CEO pay is increasingly tied.

Concerns about the rising CEO pay were already being expressed in this period. The corporate scandals of the early 2000s (e.g. Enron and Ahold) are viewed as an outcome of, among other factors, the excessive executive pay and should therefore be included as a fourth reason for the continuous attention to the topic of CEO pay.

> *"Certainly, no one could have predicted so many major corporate scandals involving so many different players (executives, directors, accountants, and analysts) ... Riding a greed-driven high, these beneficiaries of excess begin blurring the line between right and wrong, legal and illegal." (Business Week, June 2002)*[5]

The scrutiny of executive pay is important for personnel economics. Performance-based pay, which is the foundation of linking CEO pay to stock performance, has cascaded in the organization, which affects the compensation for all employees. And yet, little empirical work has been done on (incentive) compensation for *workers* (Prendergast, 1999). This is in sharp contrast with the growing public interest in performance-based pay. Performance contracts are implemented in many firms, and they are even being considered in the public sector (e.g. the police force and the Dutch educational system (CPB, 2003; CPB, 2004)). Indeed, a recent representative survey among Dutch companies by The Human Capital Group (2004) indicated that annual wage increases that used to be automatic have now become performance-related to an increasing extent: the latter's share increased from 40 percent in 2003 to 55 percent in 2004.

The increase in interest in performance-related pay is exemplified by means of a press search on the topic. A search in the Dutch journal *Het Financieele Dagblad* (the Dutch equivalent of the Wall Street Journal) on the terms "prestatie" and "beloning" ("performance" and "rewards", the Dutch translation for incentive compensation) was conducted for the years 1985 to 2004. The results in Figure 1.3 show the positive trend in the frequency with which these words were used in the journal.

The need for an increase in labor productivity (e.g. OECD, 2004) can be seen as one of the reasons for this policy change. An economic downturn can amplify such an effect, since workers will receive fewer incentives from promotion opportunities.[6] This trend reinforces the importance of a thorough understanding of the functional and dysfunctional effects of compensation systems, a topic which is specifically investigated in Chapter 3. In Chapter 4, I focus on the other source of incentives: promotions. It is important to understand the workings of this incentive tool and especially to what extent promotions and incentive compensation are substitutes. Chapter 5 identifies the characteristics of firms that are able to organize internal job movements and use promotions as an incentive tool. In Chapter 6 I investigate potential beneficial effects of job mobility, and thus what the advantages are of hiring outsiders. All in all, this provides new insights into what the differences are in the incentive effect of incentive compensation and promotions and into what situation either of the two instruments is more appropriate.

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[5] See Wee (2002).

[6] Dohmen (2003) argues that companies with a lower growth rate, for example caused by an economic downturn, are less able in organizing career paths for their employees.

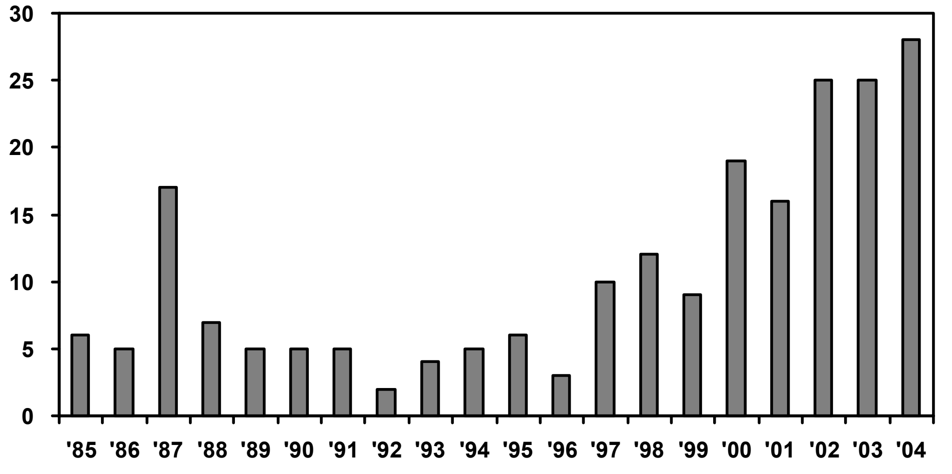

Figure 1.3: Articles using the words “Incentive” & “Compensation”

1.4 Outline of the Dissertation

The next chapter presents the theoretical background of the empirical studies covered in the chapters that follow. Part 2 contains four chapters, each dealing with a specific research question (see 1.2.). These chapters all start with an introduction and a discussion of some (additional) theory, then describe the methodology and data used for the specific empirical study, and finally present and discuss the results. The chapters in Part 2 are separate papers and will therefore include repetitions of theory discussed in previous sections. Part 3 discusses the conclusions. Chapter 7 presents the conclusions of the combined studies from a theoretical perspective, investigates the limitations, and generates suggestions for further research. The final chapter, Chapter 8, focuses on the identification of the managerial implications.