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Long-term work contracts versus sequential spot markets: experimental evidence on firm-specific investment

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Abstract

The length of work contracts may be irrelevant for firm-specific investment if rational behavior generates endogenous job security. In an experiment, we implement such a situation and study actual investment behavior. In contrast to the game-theoretic prediction, we find reduced investment in case of short-term contracting compared to long-term contracting. This is due to nonequilibrium behavior that generates a substantial risk of unemployment if contracts are short-term. Since the effect of nonequilibrium behavior differs between institutions, the length of contract is in fact relevant for firm-specific investment.

JEL classification: C91; D82; J41
Keywords: Principal agent; Experiment; Specific human capital

1. Introduction

Investments into firm-specific skills of workers are costly and induce uncertain future returns, which are lost if the work contract terminates. Consequently, neither the employer nor the worker might be willing to invest in the first place. This is a version of the well-known hold-up problem: As returns on relation-specific investments are lost if one party terminates the relationship, the other party reduces investment.[1]

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[1] For a general description of the hold-up problem, see, e.g., Milgrom and Roberts (1992, p.136 ff).

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Consider the case where it is the worker who undertakes the relevant investment, for example he learns to operate a particular machine or develops a good relationship with colleagues or clients. In these instances, the hold-up problem can be avoided by the provision of job security, e.g., through a long-term work contract. Job security is also influenced by explicit dismissal rules as well as social norms such as "no discharge without cause", governing termination of many employment relations in the U.S. While job security may increase efficiency due to larger investments into firm-specific human capital,[2] it may also lead to lower work effort of employees ("shirking").[3] Furthermore, there might be situations where job security does not solve the investment problem[4] or where the same level of investment may be achieved by sequential short-term contracts. The latter holds if the employer (the principal) benefits from the worker's firm-specific investment via rent sharing.[5] MacLeod and Malcomson (1989) demonstrate that an implicit contract providing job security for the worker is self-enforcing if the rent from the relationship is large enough. This suggests that job security may be irrelevant for firm-specific investments and that the design of labor market institutions may be guided solely by other considerations (e.g., to reduce shirking).

However, these conclusions derive from theoretical models that rely on perfectly rational individuals. If actual behavior differs from theoretically assumed behavior, the conclusions may be invalid. Specifically, labor market institutions may differ systematically with respect to nonequilibrium behavior and economic policy analyses should take this into account. Our study is based on these intuitive arguments. Within a laboratory experiment, we investigate and compare the effectiveness of long-term contracts and sequential short-term contracts in inducing firm-specific investment. The experimental game is designed such that with perfectly rational agents, both types of contracts provide the same investment incentives. But they differ with respect to nonequilibrium choices. Nonequilibrium choices increase the risk of unemployment when the contract is short term. We show that this risk is substantial, but it is not large enough to solely account for the observed underinvestment. The data rather suggest that players hold too pessimistic beliefs about the risk of unemployment, which reduces investment incentives even further.

Job security has also been investigated using cross-country data. Most studies focus on the influence of employment protection legislation on unemployment and turnover.[6] Very few studies consider the impact of (endogenous) job security on firm productivity[7],

[2] For instance, Rock and Wachter (1996) stress this point with respect to the rule "no discharge without cause".

[3] A theoretical model based on the disciplining effect of unemployment is, e.g., Shapiro and Stiglitz (1984).

[4] See Lazear (1988) for a model along these lines.

[5] See Becker (1964) for a discussion of human capital formation and rent sharing.

[6] Lazear (1990) reports negative effects of job security provisions on employment. On the other hand, theoretical and data analysis as well as simulations by Bertola (1990) and Bentolila and Bertola (1990) suggest that employment need not be lower on average in countries with strict employment protection and dismissal rules. Even evidence regarding turnover under different regimes is not clear. Boeri (1999) finds more turnover in countries with strong firing restrictions than in less-regulated countries, which he explains by job-to-job changes.

[7] For a study on productivity effects, see Ichniowski et al. (1997). They find that job security in combination with a whole cluster of complementary human resource management practices (such as incentive pay, teams, training, etc.) increases productivity in the steel industry.