Efficiency and behavioral considerations in labor negotiations ☆

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ABSTRACT

Experimental literature has shown that social preferences influence how individuals bargain and make sharing decisions. It usually considers situations in which individuals negotiate on a single issue. This paper explores a different environment and reports on an experiment based on a non-cooperative game in which the choice of the bargaining agenda is endogenous. We find that firms reveal a strong preference for single-issue bargaining although the subgame perfect equilibrium predicts the choice of the multi-issue bargaining. In multi-issue bargaining unions offer smaller relative payoff shares to firms than in single-issue bargaining and this leads to a higher conflict rate than in a single-issue bargaining. Social preferences and a concern for relative payoffs support this preference for a restricted bargaining agenda but they induce a loss of efficiency.

1. Introduction

A huge economic literature on the ultimatum bargaining game (Güth, 1995; Güth, Schmittberger, & Schwarze, 1982; Murnighan, 2008; Oosterbeek, Sloof, & van de Kuilen, 2004; Roth, 1995) has shown that the first mover in this game exploits his strategic advantage to some degree but that the distribution of payoffs between the two parties is on average less asymmetric than theory predicts. It has also been found that the probability for disagreement increases in the relative payoff share demanded by the first mover. Theories of social preferences explain these findings by the individuals' concern for fairness

and their degree of inequity aversion (Bolton & Ockenfels, 2000; Fehr & Schmidt, 1999). Interestingly, Charness and Rabin (2002) provides an alternative theory of social preferences in which people care about efficiency (see also experimental evidence in Engelmann & Strobel (2004). We explore the hypothesis that social preferences may play a role not only in the bargaining behavior of the players but also in the choice of the bargaining agenda, i.e. the issues on which players have to bargain. We study whether social preferences are aligned with a search for higher efficiency in the determination of this bargaining agenda. Labor negotiations offer a natural setting for studying this question.

The canonical models of labor negotiations typically oppose two main approaches of the bargaining agenda (Booth, 1995): the "right-to-manage" model in which the firm bargains with its union about wage but retains the right to determine employment (Nickell & Andrews, 1983) and the "efficient bargaining" model that assumes that both, wage and employment, are bargained simultaneously (McDonald & Solow, 1981). The larger bargaining agenda reaches higher efficiency through a higher employment level. In a more general context, early experiments on bilateral monopoly have tested alternative bargaining models and concluded that the outcome of the joint negotiation is very close to the Pareto optimal solution whereas bargaining under price leadership leads to outcomes that are no longer efficient because of a tendency toward a contract providing an equal share of maximum joint profits (Fouraker & Siegel, 1963; Fouraker, Siegel, & Harnett, 1962; Siegel & Fouraker, 1960). This literature did not intend, however, to endogenize the choice of the bargaining agenda. A more recent strand in economic theory has developed bargaining agenda games (see Fershtman, 1990). In these games the agenda may be determined endogenously for example through a prior bargaining over the agenda (Conlin & Furusawa, 2000; Inderst, 2000). Games with endogenous agendas oppose issue-by-issue vs. bundle-bargaining (Lang & Rosenthal, 2001; Younghwan & Serrano, 2004). These models have not been empirically tested, as far as we know.

The aim of this paper is to investigate some of the reasons explaining the preference of firms for either a bundle-bargaining agenda or a restricted bargaining agenda in labor negotiations with their union by means of a controlled laboratory experiment. To do this we introduce a non-cooperative bargaining model that we test experimentally in the laboratory.

In our game, firms select the bargaining agenda and bargain with unions according to one of two rules: a single-issue agenda (SIA) or a multi-issue agenda (MIA) in which two issues are negotiated simultaneously and which corresponds to the efficient bargaining model. The firm has full discretion over the agenda and the union has the whole bargaining power. The game may be seen as a non-cooperative implementation of the classical "efficient bargaining versus right-to-manage" framework. A chance move determines the profitability of the bargain for the firm. In SIA the firm may choose employment upon realization of the chance move. While this may seem advantageous, rational and risk-neutral players should still prefer MIA. By varying the probabilities of the bad state of nature in two experimental treatments, we vary the implicit cost of choosing SIA in order to investigate how agenda choice varies with this cost. The game-theoretic solution – which assumes rational and selfish behavior – states that the firm should choose the multi-issue bargaining agenda in both treatments. While the multi-issue bargaining agenda is more efficient and profitable for the firm, it also provides the firm with a lower relative share of joint profits than the single-issue agenda. Though this should not matter from a purely rational and selfish perspective, we know from the huge literature on ultimatum bargaining experiments that people have social preferences that lead them to deviate from the theoretical predictions.

Our experimental results show that firms choose the single-issue bargaining agenda in 70% of the cases although employment, profit and efficiency are larger under multi-issue bargaining than under single-issue bargaining. This preference for a restricted bargaining agenda is in contrast with the theoretical prediction. The choice of bargaining agenda reacts to the fact that unions demand a larger relative payoff share in MIA than in SIA although they claim for a lower level of employment (but a higher wage) than predicted. Since at the same time unions demand lower wages than predicted in single-issue bargaining, SIA is actually more attractive to firms relative to MIA than predicted. Indeed, SIA increases significantly both the firms' absolute payoffs and their relative share of joint payoffs and therefore, disagreement is less frequent. Eventually, the efficiency gains in MIA are smaller than theoretically predicted. Our findings support the importance of social preferences in the choice of the bargaining agenda and do not support a strong concern for efficiency.

The remainder of this paper is organized as follows. Section 2 presents the theoretical model underlying the experimental design. Section 3 provides details on the experimental procedures. Section 4 reports the data and statistical analyses. Section 5 discusses the results and concludes.

2. Model and experimental design

2.1. A stochastic model of the firm–union bargaining

In this section we describe the basic structure of the bargaining game, our experimental design and the theoretical predictions. Consider a firm and a union with N members of which $n \leqslant N$ may be employed. Firm and union care about wage w and employment n, which may be determined according to one of two possible agendas to be chosen by the firm: the single-issue bargaining agenda ("SIA") or the multi-issue bargaining agenda ("MIA"). In case of SIA, firm and union bargain about w. After a wage settlement, the firm freely chooses n. In case of MIA, firm and union bargain about the bundle (w and n) at the same time. Suppose that the union's utility function $u(w,n)$ and the firm's profit function $\pi(w,n)$ are as follows:

$$u(w,n) = nw^{\beta} + (N-n)\bar{u} \tag{1}$$