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Relative consumption, working time, and trade unions ☆

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HIGHLIGHTS

- Status concerns create incentives for excessive labour supply in competitive markets.
- Unions that cannot internalise this externality can still mitigate the distortion.
- The reason is that wages above the market clearing level require people to work less.
- Hence, trade unions can be welfare-enhancing if there are relative consumption effects.

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ABSTRACT

Status considerations with respect to consumption give rise to negative externalities because individuals do not take into account that their decisions affect the relative consumption position of others. Further, status concerns create incentives for excessive labour supply in competitive markets. We show that trade unions which are unable to internalise the externality can nevertheless mitigate the resulting distortion. The reason is that wages above the market clearing level are only feasible if people work less and, therefore, fewer hours than in a competitive market. Accordingly, the theoretical model establishes that trade unions can have a welfare-enhancing role in a world with relative consumption effects.

1. Introduction

Trade unions are often viewed as an impediment to efficiency because they drive a wedge between marginal productivity and the marginal rate of substitution between leisure and consumption. In this paper, we show that such a view may not be justified if consumption exhibits status effects. Such effects will exist if higher consumption on the part of a reference group negatively affects an individual, for a given level of the individual's own consumption. Since this negative externality is not taken into account when choosing labour supply and, hence, consumption individually, status effects create incentives for working time to be excessive (see, for example, Frank, 1985 and Schor, 1991 for a detailed illustration). However, market power of workers can reduce this distortion. This classic second-best argument also applies in the present context: we show that a small, firm-specific trade union, which is not able to internalise the consumption externality, will set wages in such a manner that working time falls to below the level prevailing in a competitive market. Therefore, trade unions mitigate the negative impact of status considerations with respect to consumption.

The theoretical analysis is based on two well-supported empirical observations. First, preference interdependencies are pervasive and strong (Solnick and Hemenway, 1998, 2005; Johansson-Stenman et al., 2002; Alpizar et al., 2005; Carlsson et al., 2007; Senik, 2008, Hillesheim and Mechtel, 2013, and Clark et al., 2008). Second, trade unions prefer reductions in working time and, historically, one of their central demands has

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been a cut in hours of work. Moreover, both weekly and annual working time decline with the strength of trade unions (Huberman and Minns, 2005; Alesina et al., 2005; Berger and Heylen, 2011).[1] Finally, there is a negative association between union membership and (regular) hours of work (Aidt and Tzannatos, 2002).

Accordingly, the present contribution is chiefly related to two strands of the literature which take these empirical observations as their point of departure. First, the effects of relative consumption on labour supply have primarily been discussed in relation to the impact and optimal structure of income taxation (see, for example, Duesenberry, 1949; Boskin and Sheshinski, 1978; Persson, 1995; Ireland, 1998; Corneo, 2002, or Dodds, 2012). In none of these contributions, however, do trade unions play a role. Second, models of collective bargaining rely on a wide variety of specifications relating hours and the number of employees to output. In models without overtime, either working hours are varied exogenously, while the trade union can set the wage (cf. Calmfors, 1985; Booth and Schiantarelli, 1987; Andrews and Simmons, 2001), or alternatively both wages and hours of work (Calmfors, 1985; Booth and Ravallion, 1993; Andrews and Simmons, 2001; FitzRoy et al., 2002; Kramarz et al., 2008; Wehke, 2009), with negotiations constituting a special case. Booth and Schiantarelli (1987) and Hart and Moutos (1991) also consider (sequential) negotiations with respect to hours, wages and employment. In none of these analyses are status effects incorporated.

A number of further studies link working time and trade union activity in the presence of leisure or consumption externalities. Hansen et al. (2012) enquire how coordination between various trade unions and the openness of the economy affect the difference between hours of work chosen individually and by unions. However, trade unions are, in contrast to the present contribution, assumed to be large and, thus, incorporate the leisure externality in their objective. In Oh et al. (2012), employers choose hours of work in a shirking model of efficiency wages. Their choice may differ from the working time preferred by employees because hours affect the gain from shirking. Further, relative consumption concerns affect the no-shirking constraint. Oh et al. (2012) demonstrate that a small trade union may indirectly raise working time because a wage increase above the competitive level makes the union better off but forces a firm to raise hours of work in order to prevent shirking. In partial contrast, Alesina et al. (2005) show that trade unions tend to reduce hours of work in the presence of shocks and argue that they thereby partially internalise the leisure externality, albeit unintentionally. Moreover, Frank (1985) claims that trade unions facilitate coordination among co-workers and may therefore mitigate the under-consumption of goods which have no status effects. Finally, Oswald (1979) considers a trade union characterised by a utility function that increases in the wage and employment levels of its own members and declines with the wage paid to members of other unions. However, working time per worker is fixed.

The remainder of the paper unfolds as follows. In Section 2, we specify the theoretical framework and derive the features characterising the optimal allocation and the competitive labour market outcome. We use a simple analytical framework based on a ratio comparisons model (Clark and Oswald, 1998) in order to succinctly establish the main effects of trade unions. Furthermore, in Section 3 we assume that workers who are identical ex-ante are also treated identically ex-post. In addition, a utilitarian (monopoly) trade union, which is firm-specific and, therefore, cannot internalise the status externality, sets wages, while the firm chooses working time. Assuming identical payoffs implies that no worker is unemployed and enables us to illustrate the potentially efficiency-enhancing impact of trade unions most clearly. In Section 4, we relax the full employment restriction and follow the main strand of the literature by assuming that the trade union sets wages and hours of work, while the firm determines employment. Such set-up also mirrors observable features of collective bargaining contracts which generally include provisions about wages and working conditions, but much less often employment. For both settings analysed in Sections 3 and 4, we compare the resulting working time with the competitive and welfare-maximising levels. In Section 5, we modify the assumption that utility from status is determined by the ratio of own consumption to the reference level. Instead, status utility depends on the difference between the two consumption levels. The analysis clarifies that the exact specification of preferences is without impact. Finally, Section 6 briefly summarises. The proofs and most calculations underlying the exposition in Section 5 are relegated to Appendix A.

2. Model

2.1. Preferences

There are two types of individuals i, $i = 1, 2$, who differ only with respect to their productivity. In particular, we assume that type 2 is the high-productivity individual. The number of individuals of each type n_i is very large, so that the actions of a single individual do not affect aggregate outcomes. Each individual has a time endowment t, $t > 0$; and working time is denoted by h_i, so that leisure equals $t - h_i$. We assume that utility u_i is increasing in individual consumption c_i and leisure $t - h_i$. Furthermore, the utility function is not type-specific and increasing in (cardinal) status. Status is determined by the ratio of consumption levels $c_i/\bar{c}$ (Clark and Oswald, 1998, but see Section 5), where $\bar{c}$ is the average level of consumption. Following, for example, Persson (1995) and Corneo (2002), we assume that utility is additive in its components, in order to avoid problems of non-uniqueness of the equilibrium and to clearly derive the effects of a trade union:

$$u_i = \ln c_i + \lambda \ln(t - h_i) + \rho \ln\left(\frac{c_i}{\bar{c}}\right) \tag{1}$$

The parameters λ, $\lambda > 0$ and ρ, $\rho \geq 0$, indicate the weight of leisure and status concerns, relative to the value of consumption. Empirical studies mentioned in Section 1 indicate that for many goods a considerable part of the utility from consumption results from comparing own consumption levels with those of others (Solnick and Hemenway, 1998, 2005; Johansson-Stenman et al., 2002, and Alpizar et al., 2005), implying that ρ is strictly positive. For leisure in contrast, the empirical evidence suggests that the comparison is not overly important. We, therefore, concentrate on the consumption externality in Eq. (1) for simplicity, but note in passing that our results will basically continue to apply also in the presence of leisure externalities as long as status concerns relating to leisure are relatively less pronounced than with respect to consumption (as, f. e., in Choudhary and Levine, 2006).

2.2. Production

There are two types of firms. Their respective numbers are given and both types produce the same commodity. Each firm employs only labour of one type. Therefore, a firm's type is given by i. For simplicity, we set the number of firms of each type equal to one. Consequently, the output of type i individuals equals $\alpha_i f(n_i E_i h_i)$, where E_i, $E_i \leq 1$, describes the employment ratio. The production function f is increasing, strictly concave ($f' > 0 > f''$) and satisfies $f(0) = 0$ and $f'(n_i E_i h_i) \to \infty$ for $n_i E_i h_i \to 0$. We suppose that the firm's labour demand function is weakly concave or not too convex, an assumption that is

[1] The findings presented in Table 9 in Huberman and Minns (2005) are not contained in a later, substantially revised version (Huberman and Minns, 2007). Moreover, the evidence suggesting a negative effect of trade unions on working time is not uncontroversial. Faggio and Nickell (2007) find that union density raises annual hours of work, but assert that this effect vanishes if the negative impact on earnings dispersion is taken into account. Causa (2009) observes a negative (positive) impact for males (females), while Burgoon and Baxandall (2004) report positive relationships between hours of work and union density. More recently, Oh et al. (2012) find either no correlation between working time and union density or a positive one for non-centralised collective bargaining regimes.