Torstein Veblen, Joan Robinson and George Stigler (probably) never met: Social Preferences, Monopsony, and Government Intervention

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Abstract

Wages and employment are lower in a monopsonistic labor market than in its competitive counterpart. Furthermore, a minimum wage or a subsidy may raise employment up to its first-best, competitive level. We analyze whether these important results still hold if workers have social preferences. First, we investigate how social comparisons affect wages and employment in monopsony. Second, we show that the undistorted, competitive outcome may no longer constitute the benchmark in the presence of social comparisons. Third, we derive a condition which guarantees that the monopsony distortion is exactly balanced by the impact of social comparisons and the first-best results without government intervention. Finally, we show that depending on the relative strength of the two distortions a minimum or maximum wage, respectively subsidy or tax, can be used to ensure this condition.

Keywords: social preferences, monopsony, government intervention, wage regulation

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1 Introduction

The standard textbook setting and the political advice utilizing such a fundamental but simple analytical framework is usually based on the notion that individual consumption and labor supply decisions are guided by own endowments. There is, however, ample evidence that questions this assumption because individual decisions are often and substantially influenced by relative or positional considerations (see, e.g., Neumark and Postlewaite, 1998; Bowles and Park, 2005; Frank, 2008; Park, 2010). Accordingly, an extensive literature has developed in which the impact of preferences featuring social comparisons on competitive labor market outcomes has been analysed. However, labor markets usually do not correspond to this setting and may more adequately be characterized as imperfectly competitive. In particular, it has been shown that a firm’s labor supply is not infinitely elastic, see, e.g., Nelson (1973) and Sullivan (1989) for pioneering work. These and also more recent finding ¹ suggest that monopsonies are a pertinent feature of many labor markets.

As is well known, in a monopsony there is insufficient employment, wages are lower than on a competitive market and employment and welfare can be raised by a minimum wage (see, e.g., Manning, 2003). In contrast, social comparisons featuring jealousy result in excessive employment in a competitive labor market, while wages will be higher than in the absence of such preferences. Moreover, welfare can be increased if labor supply is curtailed. Accordingly, relative or positional considerations can justify progressive income taxation in competitive markets (see, e.g., Persson, 1995; Ireland, 2001; Corneo, 2002; Aronsson and Johansson-Stenman, 2014, 2015).

Each topic on its own has a long tradition in economics. Torstein Veblen already asserted that “Relative success, tested by an invidious pecuniary comparison with other men, becomes the conventional end of action.” (Veblen, 1899, ch. 2: Pecuniary emulation, p. 24).² Monopsony and the effects of an upward sloping labor supply curve to the firm were analyzed by Joan Robinson in the 1930s (Robinson, 1933, ch. 18), and the (de)merits of minimum wages were discussed as early as in the 1940s by George Stigler (Stigler, 1946).

In this paper, we analyze what happens if the two distortions - monopsony and social comparisons - meet and what kind of government interventions might be called for. At first sight, one may conjecture that social comparisons enhance labor supply and contribute to an even lower wage than prevailing in a monopsony without such relative concerns. At the same

¹Azar et al. (2018) employ online vacancy posting and infer that about half of all labor markets in the United States are judged as highly concentrated according to the definition of the Federal Trade Commission in its merger guidelines. Moreover, the relevance of monopsonistic labor markets is likely to increase in the future, when the standard employment relation is increasingly being replaced by more flexible forms of contracts. For the extreme form of this flexibility, crowd-working, Dubé et al. (2018) estimate labor supply elasticities for one of the largest on-demand platforms of around 0.1.

²Other very early contributions to the role of social preferences for individual choices include Smith (1776, Book V, Ch. II, Part 2), Pigou (1903, p. 60), Keynes (1936, ch. 2) and also Marx (1977).
time, the increase in supply may counteract the decline in demand due to market power such that employment rises. On closer inspection, though, this conjecture appears to be premature. An increase in labor supply does not necessarily result in a downward shift of the monopsonist’s marginal cost curve. Whether it does so also depends on the wage elasticity of labor supply which may be affected by the nature of social comparisons, as well. The net impact of these changes determines how social comparisons and monopsony interact.

In our analysis, we find that the impact of social comparisons on wages and employment is ambiguous in monopsony. The direction of the effects largely depends on how social comparisons affect the labor supply elasticity to the firm directly, and indirectly through the induced changes of wages and employment. Interestingly, a social planner confronted with the two distortions, a monopsony and social comparisons, will not necessarily prefer an employment level that equals the one which occurs on a competitive market without social comparisons. Actually, she will only do so if workers marginal utility on own and reference consumption satisfy rather special properties. Furthermore, assuming that the social planner uses wages in order to achieve its desired employment level, we find that she will impose a minimum wage if the labor supply elasticity is sufficiently small, relative to the intensity of social comparisons. Otherwise, however, it would be optimal for a government that follows the social planner’s advice to set a maximum wage. Analogously to the wage regulation we can also determine optimal tax rates or subsidies to restore efficiency in the presence of the two distortions. Whether the tax rate is positive or negative, i.e. a subsidy, again depends on the magnitude of the labor supply elasticity relative to the strength of social comparisons.

While there is sweeping work on monopsonistic labor markets (Manning, 2003) and the interest on the effects of social preferences on market outcomes is rising quickly (see, among others, Persson, 1995; Ireland, 2001; Corneo, 2002; Liu and Turnovsky, 2005; Aronsson and Johansson-Stenman, 2008, 2014, 2015, 2018; Wendner and Goulder, 2008; Mujic and Frijters, 2015), our contribution sits well with a less developed literature that looks into market outcomes when two distortions meet. In the context of a monopsonistic labor market, it is acknowledged that employer market power may be counteracted by employee market power, i.e. trade unions, such that employment rises and an efficient outcome can be attained, see, e.g., Viscusi (1980), Oswald (1982), Kaufman (2004), or Boeri and Van Ours (2013, pp. 89). Desiraju and Sappington (2007) and von Siemens (2010; 2012) study the impact of social comparisons in a monopsony. Contrary to our contribution, they are interested in workers’ sorting behavior into particular jobs, and firms’ profits when workers have private information on their ability or social preferences. In our own previous work (Goerke and Neugart, 2017) we analyze social comparisons in oligopsony in which heterogeneous firms have limited market power and compete for the same pool of labor. We show for this framework, based on the set-up by Salop (1979), that a stronger prevalence of wage comparisons decreases wage inequality, shifts the functional income distribution in favor of the workers, and increases welfare. The underlying
mechanisms is that social comparisons of workers curtail the market power of firms. Consequently, low and high productivity firms both have to raise their wage offers which changes the allocation of workers between these two types of firms. Sandmo (1994) studies the effect of social comparisons in monopsony with a focus on a particular payment schedule of the firm. He finds that in the presence of externalities the monopsonist will equalize the effort-related wage component and a worker's marginal productivity and internalize the externality by adjusting the fixed income component.

Market power may not only originate on the demand side. Employees can also influence market outcomes. Goerke and Hillesheim (2013) show that in a labor market with firm-specific trade unions which represent individuals with preferences featuring social comparisons, labor demand and actual hours of work decline. The reason is that unions can internalize the impact of social comparisons that would otherwise have led to excessive work. In a series of papers, Mauleon and Vannetelbosch (2003; 2010) and Mauleon et al. (2014) have shown how a union's strike activity, whose members have social preferences, changes with the structure of the market on which the firm sells its products. Interactions of distortions of the social comparison type with some sort of market power are also studied outside of the labor market context. Woo (2011; 2016) shows that the prediction of over-consumption obtained for competitive settings may no longer arise in oligopoly or if there is monopolistic competition when status effects with respect to consumption goods are introduced. Similarly, Guo (2005) finds that the tax rate inducing first-best consumption may not be positive on account of the product market imperfection.

In the next section, we describe our analytical apparatus. In Section 3, we show how social comparisons affect the market outcome if the labor market is characterized by a monopsony, focusing on the case of jealousy. Subsequent to this positive analysis, we characterize optimal employment in the presence of two distortions: monopsony and social comparisons. We also show how wage regulations, via either minimum or maximum remuneration levels (Section 4.3), and taxes and subsidies (Section 4.4) can be employed to enforce the optimal employment level. After a discussion of our results under the assumption that it is not jealousy but rather admiration that constitutes the externality in Section 5, we conclude in Section 6.

2 The Model

2.1 General set-up

We consider a world in which a monopsonist employs a large number of individuals. These workers derive utility from their own consumption and exhibit social preferences as utility depends on a reference level of consumption, as well. From the perspective of an individual worker, this reference level of consumption is exogenous. The monopsonist, however, takes
into account that a wage change will not only alter consumption of each employee, but also the reference level. Therefore, the monopsonist correctly anticipates the labor supply effects of altering the wage. Such a situation will occur if the reference group of the monopsonist’s employees consists at least partly of colleagues within the firm.

Workers are paid a wage, \( w \), and supply an amount of labor, \( L \), resulting in labor income, \( wL \). In addition, profits of the monopsonist constitute income. This assumption ensures that all goods produced by the monopsonist can also be consumed by those agents considered in the model. Accordingly, the distribution of income is without impact on consumption levels. Each worker views the level of profit income as given. Workers are price-takers and, hence, cannot influence the wage, \( w \). In a similar vein, an individual’s labor supply choice will not change profits, \( \pi \). This assumption and the differential ability of the monopsonist and an individual worker to affect the reference level of consumption reflect the idea that the firm has market power, while the number of employees is so large that each individual’s actions have negligible effects on market outcomes.

2.2 Workers

Utility, \( U \), increases in the worker’s own consumption level, \( c \), at a strictly decreasing rate and declines in working time, \( L \), at a weakly increasing rate, such that \( U_c > 0 > U_{L}, U_{cc} \) and \( U_{LL} \leq 0 \) hold, where subscripts denote partial derivatives. Moreover, utility \( U \) depends on the reference level of consumption, \( c^r \):  

\[
U = U(c, c^r, L). 
\]  

Subsequently, we focus on the case of jealousy according to the definition by Dupor and Liu (2003), such that \( U_{c^r} < 0 \) holds. This helps us to streamline the exposition and to provide a clearer intuition for our results. Accordingly, our model is set up in such a way that the employment-reducing impact of monopsony power could be counteracted by the employment-enhancing effect of social comparisons (see, e.g., Frank, 1984; Schor, 1991; Dupor and Liu, 2003). Most of our findings also apply if individuals exhibit admiration (\( U_{c^r} > 0 \)), as we show in Section 5.

For simplicity, the utility function is separable in consumption and labor supply (\( U_{cL} = U_{c^rL} = 0 \)), see also, e. g., Persson (1995), Corneo (2002), or Goerke and Hillesheim (2013). The marginal rate of substitution between leisure and consumption, \( U_{L}/U_{c} \) will increase with the reference level of consumption, \( c^r \), if \( U_{cc} > 0 \) applies, which we subsequently assume to be the case. This is often referred to as Keeping-up-with-the-Joneses (KUJ) preferences (see Dupor and Liu (2003)).\(^3\) Furthermore, the direct positive impact of a general increase in consumption dominates the indirect one via reference consumption. This holds both for the

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\(^3\)Given the separability assumption (\( U_{cL} = 0 \)), jealousy and KUJ-preferences are equivalent.
utility level, $U$, (Dupor and Liu, 2003) and the marginal utility from consumption, $U_c$ (Liu and Turnovsky, 2005), implying that $U_c + U_cr > 0 > U_{cc} + U_{cc'}$ for $dc = dc' > 0$.

The utility impact of a change in the relevance of reference consumption is described by a parameter $\gamma$, $0 \leq \gamma$. If, for example, social preferences were of the additive type (Clark and Oswald, 1998), we could specify utility as $U(c - \gamma c', L)$. Accordingly, the signs of $U_\gamma$ and $U_{c'}$, as well of $U_{c\gamma}$ and $U_{cc'}$ coincide. The parameter $\gamma$ can either measure the intensity with which the monopsonist’s employees compare their consumption with that of a given reference group. Alternatively, $\gamma$ can indicate the extent to which the reference group is made up of individuals who are also employed by the monopsonist. For our subsequent analysis we prefer the former interpretation, in order to be able to determine all relevant variables within the model.

To simplify notation, we assume that the number of workers is fixed to unity. All workers are employed by the monopsonist and obtain the same income. The representative worker chooses working hours or labor supply, $L^*$, to maximize utility subject to the budget constraint, $c = wL + \pi$. Since each worker regards profits $\pi$ as fixed, the first-order condition for a utility maximum is:

$$\frac{dU}{dL} = U_c w + U_L = 0.$$  \hspace{1cm} (2)

Individual labor supply, $L^*$, is increasing in the own wage, $w$, if the substitution effect dominates the income effect, which we subsequently assume to be the case:

$$\frac{dL^*}{dw} = -\frac{\frac{d^2U}{dLdw}}{\frac{d^2U}{dL}} = \frac{-(U_c + U_{cc}wL)}{U_{cc}w^2 + U_{LL}} > 0.$$  \hspace{1cm} (3)

We next consider the consequences of a higher wage paid by the monopsonist on labor supply, that is, of an encompassing wage increase. In order to determine this impact, we have to incorporate not only the effect on own consumption, $\partial c / \partial w = L$, but also the repercussion on the reference level, $\partial c'/\partial w$, which will be positive if reference consumption is also partially financed by labor income. Moreover, since the wage increase will affect reference consumption, those individuals who constitute the reference group of the representative worker, will also adjust labor supply. Holding constant profits, the change in aggregate labor supply is determined by

$$U_c(c(wL), c'(w, L), \gamma)w + U_L(L) = 0.$$  \hspace{1cm} (4)

Totally differentiating the above expression for $c = wL + \pi$ yields the slope of the aggregate labor supply curve, denoted by $L(c, c', \gamma)$:
\[
\frac{dL(c(wL), c^r(w, L), \gamma)}{dw} = -\frac{d(U_c(c, c^r, \gamma) + U_L(L))}{dw} = -\frac{U_c + w(U_c c + U_{cc} \frac{\partial c^r}{\partial w})}{w(U_c w + U_{cc} \frac{\partial c^r}{\partial L} + U_{LL})}.
\] (5)

Given the assumptions that reference consumption \( c^r \) is also partially financed by labor income and, hence, increasing in \( w \), and that \( U_{cc} > 0 \), the numerator of (5) will surely be positive if the individual labor supply curve is upward-sloping \( (dL^*/dw > 0) \), as this implies \( U_c + U_{cc} w L > 0 \). Therefore, also the aggregate labor supply curve is upward-sloping for \( \partial c^r / \partial L \leq w \), as \( U_{cc} + U_{cc} < 0 \).

We can simplify expression (5) without affecting its qualitative features if we let reference consumption equal own consumption \( (c = c^r) \) and assume that the monopsonist takes into account that workers obtain profit income. Assuming, additionally, that (a) labor is the only input, (b) the firm can sell its entire production at a given price normalized to 1, (c) there are no costs other than wages, and denoting the production function by \( f(L) \), profits can be written as: \( \pi = f(L) - wL \). Therefore, consumption equals \( c = c^r = wL + \pi = wL + f(L) - wL = f(L) \). In addition, we have \( \partial c^r / \partial w = \partial c / \partial w = 0 \) and \( \partial c^r / \partial L = \partial c / \partial L = f'(L) \). The slope of the aggregate labor supply curve becomes
\[
L_w = -\frac{U_c}{w(U_c + U_{cc}) f'(L) + U_{LL}} > 0.
\] (6)

Hence, the aggregate labor supply curve only reflects the substitution effect of a wage increase but no income effect anymore. Moreover, an increase in the importance of reference consumption raises aggregate labor supply, such that \( L = L(w, \gamma) \):
\[
L_\gamma = -\frac{U_{cc}w}{w(U_c + U_{cc}) f'(L) + U_{LL}} > 0.
\] (7)

Note finally, that underemployment can be characterized by individuals working fewer hours, that is, achieving a lower value of \( L \), than desired at a wage which would equal the marginal value product of labor, \( f'(L) \).

### 2.3 The firm

The production function \( f(L) \), is characterized by standard properties, that is, \( f(0) = 0 \), \( f'(0) \rightarrow \infty \), and \( f' > 0, f'' < 0 \) for \( L > 0 \). The monopsonist maximizes profits by setting the wage, taking into account that a wage change affects aggregate labor supply (as defined in (6)). Hence, profits are given by:
\[
\pi = f(L(w, \gamma)) - wL(w, \gamma).
\] (8)
The first-order condition for a profit-maximizing choice can, using the definition of the (aggregate) wage elasticity of labor supply,

$$\epsilon(w, L(w, \gamma), \gamma) = L_w w / L > 0,$$

be expressed as:

$$\pi_w = f'(L)L_w - L - wL_w = \frac{L(w, \gamma)e(w, L(w, \gamma), \gamma)}{w} \left[ f'(L) - w \frac{1 + e(w, L(w, \gamma), \gamma)}{e(w, L(w, \gamma), \gamma)} \right] = 0. \quad (9)$$

The monopsonist will set a wage equal to the marginal product of labor, corrected by a factor that depends on the labor supply elasticity. The second-order condition is:

$$\pi_{ww} = L(w, \gamma)e(w, L(w, \gamma), \gamma).$$

$$\left[ f''(L)L_w - \frac{1 + e(w, L(w, \gamma), \gamma)}{e(w, L(w, \gamma), \gamma)} + \frac{w}{(e(w, L(w, \gamma), \gamma))^2} \frac{de(w, L(w, \gamma), \gamma)}{dw} \right] < 0. \quad (10)$$

The second-order derivative will surely be negative, given an upward-sloping aggregate labor supply curve, if the wage elasticity of labor supply weakly declines with the wage

$$\frac{de(w, L(w, \gamma), \gamma)}{dw} = \frac{\partial \epsilon}{\partial w} + \frac{\partial \epsilon}{\partial L} L_w \leq 0. \quad (11)$$

Once the wage has been determined, the employment level can be found by inserting the wage given by (9) into the specification of aggregate labor supply (4).

### 3 Positive Analysis

In this section we investigate how wages and employment change with the intensity of social comparisons of the KUJ-type. First, we derive and illustrate the findings for the general utility function, $U(c, c', L)$, looked at thus far. Subsequently, we consider two often used, more precise specifications of preferences in order to resolve some of the ambiguities which remain for the general formulation and to relate our predictions more closely to earlier contributions.

#### 3.1 A General Result

The wage and employment effects of a change in the strength of social preferences are summarized in the following proposition.

**Proposition 1.** Suppose, aggregate labor supply increases with the intensity of social comparisons ($L_\gamma > 0$) and the wage ($L_w > 0$):

(a) Sufficient conditions for the wage to decrease with the intensity of social comparisons are $\partial \epsilon / \partial \gamma \leq 0$ and $\partial \epsilon / \partial L \leq 0$.

(b) Sufficient conditions for labor supply and employment to increase with the intensity of social comparisons are that (1) the wage does not fall or (2) $\partial \epsilon / \partial \gamma \geq 0$ and $\partial \epsilon / \partial w \leq 0$. 

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Proof. The derivative of the first-order condition of the firm (9) with respect to the indicator, \( \gamma \), of the strength of social comparisons is:

\[
\pi_{w\gamma} = \frac{L(w, \gamma)\epsilon}{w} \left[ f''(L)L_{\gamma} + \frac{w}{\epsilon^2} \left( \frac{\partial \epsilon}{\partial \gamma} + \frac{\partial \epsilon}{\partial L}L_{\gamma} \right) \right].
\]  

(12)

Since labor supply rises with the intensity of social comparisons, the term in square brackets will surely be negative if the wage elasticity of labor supply rises neither with the strength of social comparisons nor with employment. This proves part (a).

As the firm’s first-order condition determines the wage, the resulting employment level can be derived using the labor supply curve \( L(w, \gamma) \). Its derivative with respect to \( \gamma \), taking into account wage repercussions, is:

\[
\frac{dL(w, \gamma)}{d\gamma} = L_{\gamma} + L_{w} \frac{dw}{d\gamma} = L_{\gamma} - L_{w} \pi_{w\gamma}. \]

(13)

If the wage rises, the employment effect is clearly positive. Substituting for the wage effect, we obtain:

\[
\frac{dL(w, \gamma)}{d\gamma} = L_{\gamma} - L_{w} \frac{f''(L)L_{\gamma} + \frac{w}{\epsilon^2} \left( \frac{\partial \epsilon}{\partial \gamma} + \frac{\partial \epsilon}{\partial L}L_{\gamma} \right)}{\frac{\partial \epsilon}{\partial \gamma} + \frac{\partial \epsilon}{\partial L}L_{\gamma} - \frac{1}{\epsilon} \frac{\partial \epsilon}{\partial w}}.
\]  

(14)

Since the denominator is negative due to the second-order condition on profit maximizing wages being fulfilled, the employment effect is unambiguously positive for \( \frac{\partial \epsilon}{\partial w} \leq 0 \) and \( \frac{\partial \epsilon}{\partial \gamma} \geq 0 \). This proves part (b).

We can explain the proposition graphically and thereby also provide intuition. Figure 1 contains the textbook illustration of a monopsony. The blue lines refer to the case without social comparisons. As is well known, the marginal cost curve for the monopsonist is situated above the labor supply curve it faces. The relative difference between the marginal product of labor and the wage of the worker is determined by the inverse of the labor supply elasticity to the firm, i.e., Pigou’s measure of exploitation (Boal and Ransom, 1997, p. 88).

Incorporating social comparisons has no impact on labor demand. If workers exhibit jealousy, the intensity of which is measured by the parameter \( \gamma \), the labor supply curve shifts downwards in the wage-employment space. The red line illustrates this effect in Figure 1. Moreover, the slope of the labor supply curve is likely to change (cf. eq. (6)). Accordingly, social comparisons affect the monopsonist’s marginal costs \( w(1 + \frac{1}{\epsilon}) \) through several channels. First, there is a direct effect on the wage. Second, social comparisons may directly alter the labor supply elasticity, \( \epsilon = \epsilon(\gamma) \). Third, the labor supply elasticity may change due to the induced wage and employment changes. The overall impact of social comparisons on the labor
Figure 1: Wages and employment in monopsony with social comparisons

Notes: S is labor supply and D labor demand. Blue lines refer to the case of a monopsony without social comparisons, red lines to a monopsony with social comparisons. Dashed lines are the marginal cost (MC) curves to the monopsonist of hiring one more unit of labor.

supply elasticity and the monopsonist’s marginal cost curve then determines the wage and employment consequences of social comparisons.

Equation (9) tells us under which conditions more social comparisons decrease the wage. Let us re-write the condition as \( w = f'(L) \frac{\epsilon}{1+\epsilon} \) and note that the right-hand side is increasing in \( \epsilon \). Suppose for a moment that the wage would equal the marginal product, i.e. labor supply was infinitely elastic. As social comparisons shift the supply curve outwards we move down the labor demand curve to get the new and now lower profit maximizing wage. In a monopsony the marginal cost to an employer equals the wage plus a (wage-dependent) mark-up which decreases with the labor supply elasticity. Thus, the monopsonist will only find it profitable to set a lower wage with social comparisons, than in their absence, if the change in the labor supply elasticity does not undo the decrease in wages. For this to hold, \( \epsilon \) should not increase via a direct effect of \( \gamma \) or an indirect impact via a higher \( L \) (or lower \( w \)) by too much.

The ambiguous employment effect of social comparisons then follows from considering two countervailing forces: The shift in the labor supply curve and variations in the labor supply elasticity. The downward shift increases labor supply and employment at a given level of marginal costs. If the changes in marginal costs are such that the monopsonist sets a higher wage than in the absence of social comparisons, labor supply and employment will rise because also a move to the right along the supply curve occurs. If, however, the wage declines, we can only be certain that employment rises if the marginal costs of employment do not increase. This will surely be the case if the labor supply elasticity does not fall.
3.2 Specific utility functions

Due to reasons of tractability and for being able to derive clear-cut predictions, the analysis of the effects of social preferences in various economic contexts mostly starts from the definition of a specific utility function (Grodner et al., 2011). Hence, there is no lack of candidates that we could look into. We will exemplify our more general result on the effects of social comparisons on employment and wages in monopsony with two specific utility function. In a largely received contribution Dupor and Liu (2003) define a flexible specification of preferences

\[ U(c, c', L) = \frac{1}{1-\beta} \left( \left( \frac{c^\rho - \gamma (c')^\rho}{1-\gamma} \right)^{1/\rho} \right)^{1-\beta} - AL \]  

(15)

where \( A, \beta > 0, -\infty < \rho \leq 1, \) and \( 0 < \gamma < 1 \). This formulation assumes separability between the disutility from supplying labor and the utility from consumption and also warrants the other assumption underlying our analysis, such as that \( U_c > 0 > U_L, U_{cc}, U_{cc} \) and \( U_{LL} \leq 0 \). Moreover, it hosts special cases. In particular, it reduces to a specification for which consumption is defined in absolute differences for \( \rho = 1 \) (see also Ljungqvist and Uhlig, 2000). This will be our first example. In addition, it can be transferred into a Cobb-Douglas utility function where consumption is defined in relative terms. As our second example, we will analyze such a specification in relative terms using a specific form suggested by Gali (1994).

Our choice of these two utility function is also motivated by an ongoing discussion on whether social preferences should be modeled in relative or absolute terms (see, inter alia, Persson, 1995; Clark and Oswald, 1998; Choudhary and Levine, 2006; Pérez-Asenjo, 2011; Goerke and Hillesheim, 2013; Mujcic and Frijters, 2013). Thus, we have an example for each case. Moreover, we continue to assume symmetry \( c = c' \) and specify a Cobb-Douglas production function, \( f(L) = L^m, 0 < m < 1 \).

**Example 1 - Absolute consumption differences** Setting \( \rho = 1 \), we get from (15)

\[ U(c, c', L) = \frac{1}{1-\beta} \left( \frac{c - \gamma c'}{1-\gamma} \right)^{-\beta} - AL. \]  

(16)

Since individual workers regard reference consumption as given, the first-order condition for a utility maximum is:

\[ \frac{dU}{dL} = \left( \frac{c - \gamma c'}{1-\gamma} \right)^{-\beta} \frac{1}{1-\gamma} w - A = 0. \]  

(17)

Given the assumptions stated above \( (c = wL + \pi = L^m) \), aggregate labor supply is defined by:

\[ L^{-m\beta} \frac{1}{1-\gamma} w - A = 0. \]  

(18)
With $dL/dw = L/(m\beta w) > 0$ the labor supply elasticity to the monopsonist becomes:

$$\epsilon = \frac{dL}{dw} \frac{w}{L} = \frac{1}{m\beta}. \quad (19)$$

We can also verify that the aggregate labor supply curve shifts downwards in the wage-employment space with more intense social comparisons ($L\gamma > 0$). As $\epsilon_{\gamma} = \epsilon_{L} = \epsilon_{w} = 0$, it follows from Proposition (1) that employment increases in the prevalence of social comparisons, while wages decline. Therefore, social comparisons counteract the employment effects of a monopsony and aggravate the wage consequences.

**Example 2 - Relative consumption differences** The utility function defined in relative terms and suggested by Gali (1994) writes

$$U(L) = \frac{1}{1 - \beta} \left( \frac{c}{(c^r)\gamma} \right)^{1-\beta} - AL \quad (20)$$

for which we assume $\beta > 1$ in order to ensure KUJ preferences.\(^4\) In addition, $\gamma(1-\beta) + \beta > 0$ guarantees that the labor supply curve to the monopsonist is upward-sloping and the existence of equilibrium (Dupor and Liu, 2003).

Differentiation of (20) yields the first-order condition of the worker’s labor supply as

$$U_L = \frac{w}{c^\beta} - A (c^r)\gamma^{(1-\beta)} = 0. \quad (21)$$

Aggregate labor supply to the monopsonist (for $c = c^r = L^m$) follows from

$$z \equiv w - AL^{m(\gamma(1-\beta)+\beta)} = 0. \quad (22)$$

Inserting $dL/dw > 0$ into the labor supply elasticity to the firm gives

$$\epsilon = \frac{dL/L}{dw/w} = \frac{1}{m(\gamma(1-\beta)+\beta)}. \quad (23)$$

Proposition 1 starts from the assumption that labor supply shifts outwards with $\gamma$. This will be the case if $z_{\gamma} > 0$, that is $L > 1$. As $\beta > 1$ and $\gamma(1-\beta) + \beta > 0$, it holds that $\partial\epsilon/\partial\gamma > 0$ and employment unambiguously increases in the intensity of social comparisons.

The wage effect, however, does not straightforwardly follow. The wage is determined by the first-order condition

$$b \equiv mL^{m-1} - w \frac{1 + \epsilon}{\epsilon} = 0. \quad (24)$$

\(^4\)If one lets $\rho \to 0$ for the utility function in (15), as suggested by Dupor and Liu (2003), one gets

$$\frac{1}{1-\beta} \left( \frac{c}{(c^r)\gamma} \right)^{1-\beta}. \quad \text{This expression deviates from (20) with respect to the exponent of the relative consumption term.}$$
Taking total differentials of $z$ and $b$ and applying Cramer’s rule we get

$$\frac{dw}{d\gamma} = \frac{-z\gamma b_L + b_L z_L}{z_w b_L - b_w z_L}. \quad (25)$$

It holds that $z_w b_L - b_w z_L < 0$. The sign of the numerator is ambiguous. It, however, becomes negative if $m \to 1$, i.e. the production function becomes less concave and, consequently, the labor demand curve flatter in the wage-employment space (see the Appendix for a more detailed exposition). Therefore, a given change in marginal costs results in a greater expansion of labor demand, such that the wage increase required to match this expansion by an increase in supply needs to be greater than if the labor demand curve were steeper. In consequence, both the employment and the wage effect of more intensive social comparisons are positive. This shows that social comparisons counteract the negative employment effects of monopsonistic market power and that this may also be true with regard to wages.

The analysis of two specific utility functions clarifies that preferences which induce lower wages in a competitive setting need not necessarily have the same consequences in an imperfectly competitive market. Furthermore, Goerke and Neugart (2017) show for a Salop (1979)-type oligopsonistic labor market that wages rise with the intensity of social comparisons which are characterized by $U_c' < 0$. Accordingly, the wage response to social comparisons also depends on the precise nature of the labor market imperfection.

## 4 Normative Analysis

In this section we move beyond the confines of a positive analysis in which we have compared two market outcomes. We inquire whether and under which conditions the two distortions - monopsony and preferences featuring social comparisons - balance out.

### 4.1 Objective function of social planner

Suppose the social planner maximizes a weighted sum of individual utility and profits ($W$), and that all individuals are treated equally, such that $c = c'$. Furthermore, let us assume that all goods which are produced also have to be consumed, implying that $f(L) = c$, and that individuals have to be able to afford the consumption quantity, $c$, such that $c = wL + T$ and $\pi = f(L) - wL - T$, where $T$ represents a lump-sum transfer. Given these restrictions, the maximization of a weighted sum of utility and profits is equivalent to the maximization of utility, $U = U(f(L), f(L), L)$. This is the case because any pre-transfer profits need to be handed over to consumers to ensure $c = f(L)$.  

4.2 Optimal versus undistorted market outcome

The setting we analyze is featuring two distortions: Market power by the employer and a consumption externality due to social comparisons. In order to answer the question under which conditions the two deviations from a first-best situation balance out, we need to determine an according benchmark. The subsequent Proposition states the condition which has to be fulfilled such that the outcome in a competitive market without any distortions represents this point of reference. Denote the marginal utility from consumption in the absence (presence) of social comparisons by $U_c(\gamma = 0)$ ($U_c(\gamma \neq 0)$). We then have:

**Proposition 2.** A social planner confronted with two distortions, a monopsony and social comparisons, will only set an employment level that equals the one that results in a competitive market without distortions if $\frac{U_c(\gamma = 0) - U_c(\gamma \neq 0)}{U_{cr}} = 1$.

**Proof.** Maximizing $W = U(c, c', L)$ with respect to $L$, taking into account that, first, all workers are treated identically and, second, consume the same amount ($c = c'$) and, third, receive all profits, such that $c = f(L)$, yields as first-order condition in the presence of social comparisons:

$$\frac{dW}{dL_{\gamma \neq 0}} = (U_c(\gamma \neq 0) + U_{cr})f'(L) + U_L(L) = 0.$$ (26)

Denote the resulting employment level by $L_{opt,\gamma \neq 0}$. The second-order condition holds, given the assumptions with regard to utility and production function, $f''(L), U_{cc}, U_{c'r} < 0$, $U_{LL} \leq 0$.

In the absence of any distortions, the outcome in a competitive market will be Pareto-efficient. If, in addition, there are no distributional effects of the market outcome on welfare, as it is the case in the present setting, the employment level resulting in a competitive market without distortions is equivalent to the social planner’s choice, assuming $\gamma = 0$. Hence, we can determine the market outcome in the absence of distortions by maximizing welfare for $\gamma = 0$. The resulting employment level, $L_{opt,\gamma = 0}$, is determined by:

$$\frac{dW}{dL_{\gamma = 0}} = U_c(\gamma = 0)f'(L) + U_L(L) = 0.$$ (27)

Since $U_L(L)$ and $f'(L)$ are the same for a given employment level, the social planner’s choice in the presence of social comparisons and the outcome in a competitive market in the absence of social comparisons will coincide ($L_{opt,\gamma \neq 0} = L_{opt,\gamma = 0}$), if $(U_c(\gamma \neq 0) + U_{cr} = U_c(\gamma = 0)$. If $U_c(\gamma \neq 0) + U_{cr} > U_c(\gamma = 0)$ holds, $L_{opt,\gamma \neq 0}$ will exceed $L_{opt,\gamma = 0}$, as $W$ is strictly concave in $L$. □

The intuition (for $\gamma > 0$) is as follows: The social marginal utility from consumption in the presence of social comparisons differs from the respective (individual and social) marginal
utility in the absence of such effects for three reasons: First, employees are working more hours, raising consumption. This, ceteris paribus, decreases the marginal utility from consumption, given the strict concavity of $U$. Second, the marginal utility from own consumption is affected by the reference level of consumption and will be higher in the presence of social comparisons, as $U_{cc} > 0$. Third, the social planner takes into account that an expansion of labor supply not only alters consumption of the individual under consideration, but also the reference level. This, ceteris paribus, lowers the gain from working and consuming more. If the sum of all effects is positive and, therefore, the gain from additional consumption is greater in the presence of social comparisons than in an undistorted market without such comparison effects, optimal labor supply and employment will be higher.

Considering our particular utility functions, we may note that for the general specification (15) used by Dupor and Liu (2003) we have $U_c(\gamma \neq 0) = (c^{-\beta})/(1-\gamma)$ and $U_{cr} = -\gamma(c^{-\beta})/(1-\gamma)$, making use of $c = c^r = f(L)$, such that $U_c(\gamma = 0) - U_c(\gamma \neq 0) = U_{cr}$. The same is true for the specification of utility (16) which assumes that the difference between (weighted) consumption levels determines utility. For the formulation of preferences (20) proposed by Gali (1994), we have $U_c(\gamma \neq 0) = c^{-\beta+\gamma(\beta-1)}$ and $U_{cr} = -\gamma c^{-\beta+\gamma(\beta-1)}$. Accordingly, the ratio defined in Proposition (2) is given by:

$$\frac{U_c(\gamma = 0) - U_c(\gamma \neq 0)}{U_{cr}} = \frac{c^{\gamma(\beta-1)} - 1}{\gamma c^{\gamma(\beta-1)}}.$$ (28)

This ratio will only be unity for particular values of output and consumption, but will not generally attain this value.

The two starting points of our investigations are the predictions that, first, employment in monopsony declines below the first-best, competitive level while, second, KUJ preferences induce excessive employment. The resulting question is, under which conditions the two effects neutralize each other. Proposition (2) clarifies that even if the two effects just balance out and the outcome results which would prevail in a competitive setting without social comparisons, this employment level will only be first-best for particular utility functions. The reason is that the social planner, on the one hand, incorporates that individual preferences feature social comparisons. On the other hand, the social planner takes the externality of such preferences into account. The two effects balance out for certain specifications of utility, namely those for which the marginal utility from own and reference consumption is proportional to own consumption. This has important policy implications. Suppose that the employment level resulting in a competitive, undistorted market can be determined. However, social preferences exhibit jealousy, which implies excessive employment. In such setting, a tax on income can be used to ensure the first-best outcome. Whether the tax rate should be at such a level that the undistorted market outcome is replicated is not obvious and depends on the specification of preferences.
4.3 Wage regulation

In the previous section, we have inquired which level of employment would be chosen if the social planner could determine employment directly. Typically, analyses of monopsonies have considered settings in which a social planner or government can determine the price of labor, while the firm continues to choose the number of employees in a profit-maximizing manner (Boal and Ransom, 1997; Manning, 2003). In accordance with this approach, we now assume that the social planner can only fix the wage and characterize the social planner’s choice, given this restriction. Our main insight is given by:

**Proposition 3.** Let the ratio \(-\frac{U_c}{U_c(\gamma \neq 0)}\) be denoted by \(\gamma\). A social planner will set a higher wage than the monopsonist if

\[
1 - \gamma > \frac{\epsilon}{1+\epsilon}.
\]

(29)

**Proof.** We know that the employment level resulting in monopsony, denoted by \(L^{Mon}\), is implicitly defined by eq. (9). Moreover, labor supply is given eq. (2). Combining both equations, yields:

\[
f'(L^{Mon}) \frac{\varepsilon}{1+\varepsilon} = -\frac{U_L(L^{Mon})}{U_c(\gamma \neq 0)}.
\]

(30)

Evaluating the social planner’s choice as defined in (26) at \(L = L^{Mon}\) yields:

\[
\frac{dW}{dL}_{\gamma \neq 0, L = L^{Mon}} = (U_c(\gamma \neq 0) + U_c')f'(L^{Mon}) + U_L(L^{Mon})
\]

\[
= -\frac{U_L(L^{Mon})}{U_c(\gamma \neq 0)} [U_c(\gamma \neq 0) + U_c'] \frac{1+\varepsilon}{\varepsilon} + U_L(L^{Mon})
\]

\[
= U_L(L^{Mon}) \left[ -\frac{1+\varepsilon}{\varepsilon} \left( 1 + \frac{U_c'}{U_c(\gamma \neq 0)} \right) + 1 \right].
\]

(31)

Assume that \(\frac{U_c'}{U_c(\gamma \neq 0)} = -\gamma\). The social planner’s objective will, hence, be maximized if \(1 - \gamma = \frac{\epsilon}{1+\epsilon}\) and the social planner will want to increase (reduce) employment above (below) \(L^{Mon}\) if \((1 - \gamma)(1+\epsilon)/\epsilon > (<) 1\) holds, given \(U_L < 0\). Employment can be increased by (marginally) raising the wage above the level chosen by the monopsonist. Therefore, if \((1 - \gamma)(1+\epsilon)/\epsilon > 1\) holds, the social planner will raise the wage. If, however, the reverse inequality applies, the social planner will restrict labor supply by setting a wage below the level chosen by the monopsonist.

The intuition is as follows: Employment in monopsony in the absence of other distortions is too low because marginal costs exceed the wage by the factor \((1+\epsilon)/\epsilon\). The labor supply effect of not taking into account social comparisons if preferences exhibit jealousy \((\gamma > 0)\) is due to the increase in the marginal rate of substitution from \(U_L/U_c(\gamma = 0)\) to \(U_L/(U_c(\gamma \neq 0) + U_c')\).
Assume \( \frac{U_{cr}}{U_c(\gamma \neq 0)} = -\gamma \), such that the marginal rate of substitution equals \( U_L/(U_c(\gamma \neq 0)(1 - \gamma)) \). The two distortions will exactly neutralize each other if the labor demand impact of higher costs, \((1 + \epsilon)/\epsilon\), equals the labor supply effect of ignoring social comparisons, measured by \(1/(1 - \gamma)\). If the cost impact is higher, i.e., if \((1 + \epsilon)/\epsilon > 1/(1 - \gamma)\), the social planner will want to expand employment. In a monopsony this is feasible by raising the wage because a (small) general wage increase will actually lower the marginal cost of employment.

Considering the utility functions analyzed in Section 3, we can note that for all specifications (15), (16), and (20) the relevant ratio is given by \( \frac{U_{cr}}{U_c(\gamma \neq 0)} = -\gamma \) if \( c = c^r \) is assumed. We can easily derive an even more encompassing result; that is, the ratio of the marginal (dis-)utility from reference consumption and the marginal utility from own consumption equals \(-\gamma\) for more general difference and ratio specifications \( U = U(c - \gamma c^r, L) \) or \( U = U(c/ (c^r)^\gamma, L) \).

In a “standard” monopsony a minimum wage slightly above the level set by the monopsonist will always raise employment and welfare, as defined above. Our result shows that this will not generally be the case if workers exhibit social preferences. More precisely, a wage increase will only enhance employment and raise welfare if the extent of monopsony power outweighs the strength of social comparisons. Moreover, Proposition 3 establishes an easily observable condition which helps to ascertain whether a minimum or maximum wage is welfare-enhancing.

### 4.4 Taxes and subsidies

While a restriction on the level of wages set by the monopsonist is one feasible instrument to affect employment and increase welfare, another means to enhance the society’s payoff is the use of a tax or subsidy. Income and to some extent consumption taxes which internalize the externalities due to social comparisons have been analyzed comprehensively, generally assuming competitive labor markets (see, inter alia, Duesenberry (1949), Boskin and Sheshinski (1978), Persson (1995), Ireland (1998), Corneo (2002), Gómez (2008), Dodds (2012), Aronsson and Johansson-Stenman (2010; 2013; 2018), Eckertstorfer (2014) and Wendner (2014)). Moreover, there are some contributions which establish the efficiency impact of wage or employment subsidies (taxes) in monopsonistic labor markets. Manning (2004) ascertain the effects of a progressive tax system in a search and matching framework. In Cahuc and Laroque (2014) taxation is analyzed in a monopsonistic labor market that hosts heterogeneous workers, and Strobl and Walsh (2007) allow firms to choose wages and hours of work when examining the effects of subsidies in monopsony. However, the impact of both distortions—monopsony and social comparisons—on optimal tax policy has not been considered.

If social comparisons characterize workers in a monopsonistic labor market, it is not obvious a priori, whether a tax or subsidy enhances welfare and can help the social planner to achieve

\[\text{Note that the parameter } \gamma, \gamma = -\frac{U_{cr}}{U_c(\gamma \neq 0)}, \text{ measuring the strength of social comparisons, is equivalent to the (negative of the) degree of positionalitity as used by Aronsson and Johansson-Stenman in a series of papers (see, e.g., Aronsson and Johansson-Stenman, 2008, 2010), given their specification of utility as, } u = u(c, L, c - c^r).\]
the optimal employment outcome. Monopsonistic market power requires the latter, social comparisons which enhance labor supply necessitate the former. In order to consider this issue, we assume that the firm pays a payroll tax, \( t, t > 0 \), or receives an according subsidy, \( t < 0 \). Profits can, hence, be expressed as:

\[
\pi = f(L(w, \gamma)) - (1 + t)wL(w, \gamma).
\] (32)

Since the considerations of individuals are unaffected by a change in the monopsonist’s cost, the features of the labor supply curve are the same as outlined in Section 2.2. Any tax receipts are returned to the firm or individuals in a lump-sum manner. Similarly, in case of \( t \) being a subsidy, a profit tax or another non-distortionary means of raising revenue is assumed to balance the government’s budget. Consequently, the only impact of the tax is the change in the firm’s wage choice.

Maximization of profits as defined in (9), possibly amended to incorporate profit taxation or lump-sum payments, yields as first-order condition

\[
f'(L^{Mon,t}) - w(1 + t)\frac{1 + \epsilon}{\epsilon} = 0,
\] (33)

where \( L^{Mon,t} \) denotes the employment level (implicitly) chosen by the monopsonist in the presence of a tax or subsidy. Combining (33) with the outcome of the individual optimization (cf. eq. (2)), we obtain:

\[
f'(L^{Mon,t}) = -(1 + t)\frac{1 + \epsilon}{\epsilon} \frac{U_L(L^{Mon,t})}{U_c(\gamma \neq 0)}.
\] (34)

The socially optimal outcome is defined by eq. (26). Evaluating this derivative at the market outcome, \( L^{Mon,t} \), and using our notation of \( \frac{U_{cr}}{U_c(\gamma \neq 0)} = -\gamma \), we obtain:

\[
\frac{dW}{dL}_{\gamma \neq 0, L = L^{Mon,t}} = -(U_c(\gamma \neq 0) + U_{cr})(1 + t)\frac{1 + \epsilon}{\epsilon} \frac{U_L(L^{Mon,t})}{U_c(\gamma \neq 0)} + U_L(L^{Mon,t})
\] (35)

\[
= U_L(L^{Mon,t}) \left[ 1 - (1 - \gamma)(1 + t)\frac{1 + \epsilon}{\epsilon} \right].
\]

The expression in square brackets will be zero, such that welfare is maximized if

\[
t_{opt} = \frac{1}{1 + \epsilon} \left[ \frac{\epsilon\gamma}{1 - \gamma} - 1 \right].
\] (36)

The optimal tax or subsidy rate will be zero if \( 1 - \gamma = \epsilon \gamma \) or, after rearranging, \( 1 - \gamma = \epsilon / (1 + \epsilon) \), that is, in a situation in which the two distortions just balance out and the wage set by the
monopsonist induces the optimal employment level. If \( 1 - \gamma < \epsilon/(1 + \epsilon) \), the impact of social comparisons dominates the consequences of market power and \( t^{opt} \) will be positive. In a world in which the labor market is competitive (\( \epsilon \to \infty \)), the optimal tax equals \( t^{opt}(\epsilon \to \infty) = \gamma/(1 - \gamma) = -U_{cr}/(U_c(\gamma \neq 0) + U_{cr}) > 0 \). If the effects of social comparisons are relatively weak, and \( 1 - \gamma < \epsilon/(1 + \epsilon) \), the monopsonist will be subsidized. In the limiting case of preferences exhibiting no social comparisons, \( t^{opt}(\gamma = 0) = -1/(1 + \epsilon) < 0 \).

Alternatively, the tax could be imposed on workers, such that their budget constraint, in the absence of any transfer or lump-sum tax, reads \( wL(1 - \tau) + \pi - c = 0 \). In this case, the labor supply elasticity also depends on the tax (\( \tau > 0 \)) or subsidy (\( \tau < 0 \)) rate, implying that \( \epsilon = \epsilon(w, \gamma, \tau) \). Proceeding in the same manner as in the derivation of \( t^{opt} \), the optimal income tax or subsidy rate is (implicitly) defined by:

\[
\tau^{opt} = \gamma - \frac{1 - \gamma}{\epsilon(\tau^{opt})},
\]

(37)

Once again, the optimal tax rate, \( \tau^{opt} \), will be zero if \( 1 - \gamma = \epsilon/(1 + \epsilon) \) and be positive (negative) if \( 1 - \gamma < (>) \epsilon/(1 + \epsilon) \). In the absence of labor market imperfections, the optimal tax rate equals \( \tau^{opt}(\epsilon \to \infty) = \gamma = -U_{cr}/U_c(\gamma \neq 0) > 0 \).

Accordingly, in our simple setting either a minimum wage or a subsidy can raise employment if it is below the optimal level. Alternatively, a tax or a maximum wage are both equally suitable as policy instruments if social comparisons of the KUJ-type dominate the monopsony distortion and employment needs to be reduced, in order to enhance welfare.

5 Admiration

Our analysis has thus far focused on jealous individuals. Such type of preferences induce workers to supply labor excessively. Hence, jealousy may counteract the decline in employment due to monopsony power. Nonetheless, it is worthwhile to also consider the case of admiration. Such preferences imply that utility is an increasing function of reference consumption, \( U_{cr} > 0 \) (Dupor and Liu, 2003). In our setting, this is equivalent to individuals exhibiting Running-away-from-the-Joneses (RAJ) preferences. Formally, admiration implies that \( \gamma < 0 \) holds in our specifications of utility, (1), (15), (16), and (20), such that \( U_{cr}, U_{c\gamma} < 0 \). From eq. (7), \( L\gamma < 0 \) results. Analogously to Proposition 1 we can now state that more intense social comparisons, that is, a rise in the value of \( \gamma \), will raise the wage if the labor supply elasticity, \( \epsilon \), does not decline with \( \gamma \), \( \partial \epsilon/\partial \gamma \geq 0 \), and does not increase with employment \( \partial \epsilon/\partial L \leq 0 \), and will reduce employment if either the wage does not rise or \( \partial \epsilon/\partial w \leq 0 \), \( \partial \epsilon/\partial \gamma \leq 0 \). These requirement ensure that the monopsonist’s marginal cost curve will shift upwards in the

wage-employment space. Proposition 1, in contrast, formulates conditions for the marginal cost curve to move downwards in a setting with jealousy.

Inspection of Proposition 2 reveals that its content is completely independent of the sign of \( \gamma \) and, thus, of the nature of social comparisons. Therefore, it applies to the case of admiration, as well. This is because the proposition formulates a condition in which the undistorted market equilibrium in the absence of social comparisons constitutes the benchmark for economic policy. The suitability of this benchmark depends on the nature of preferences, in that it derives a condition under which internalizing the distortion due to altering other individuals’ payoffs \((U_c \neq 0)\) is just balanced by the alteration in the marginal utility in consumption due to social comparisons \((U_c(\gamma = 0) - U_c(\gamma \neq 0))\). Put differently, the important aspect is whether preferences are (specified) such that the effect of undertaking social comparisons is equivalent to the impact of internalizing the consumption externality. In this case, the competitive outcome in a world without distortions constitutes the first-best. It is, however, irrelevant for the characterization of the benchmark, if individuals consume too much or too little, i.e. if the consumption externality is due to jealousy or admiration and, thus, either positive or negative.

In contrast, Proposition 3 yields a clear-cut prediction in the case of admiration. If \( \gamma < 0 \) holds, \((1 - \gamma)(1 + \varepsilon)/\varepsilon > 1 \) results, and the social planner will set a wage above the level preferred by the monopsonist. In this case, the government will always want to raise employment because both the monopsony and the social comparison effect lower employment to below the first-best. Thus, admiration strengthens the case for a minimum wage. Similarly, in the presence of RAJ-preferences it is optimal to subsidize employment \((\ell_{opt}, \tau_{opt} < 0)\) and the respective rates increase with the strength of social comparisons.

In sum, our analysis basically covers the case of administration, as well. Importantly, our second result holds without qualification, namely that the undistorted, competitive outcome may no longer constitute the benchmark for economic policy if preferences exhibit social comparisons. Moreover, a monopsony distortion is unlikely to be balanced by social comparisons featuring admiration, such that this kind of preferences strengthens the case for a minimum wage.

6 Conclusions

There is ample evidence for the existence of non-competitive labor markets on the one hand, and social comparisons on the other hand. The consequences of the simultaneous occurrence of the two distortions on wages, employment, and potential government intervention are less well explored.

Our analysis reveals that the wage and employment effects of social comparisons are ambiguous in monopsony. As the marginal wage costs of a monopsonist depend on the labor
supply elasticity it faces, the sign of the effect of more intensive social comparisons on wages and employment can be determined if we know the direct effects of social comparisons on the labor supply elasticity, and the indirect effects on the elasticity which come with changes in the equilibrium wage and employment levels. We derive fairly general conditions on the labor supply elasticity to the firm that allow us to sign the effects of more intense social comparisons on wages and employment. We give examples for these more general conditions by deriving the wage and employment effects for two specific utility functions. As we let workers compare their consumption in absolute terms using a utility function suggested by Dupor and Liu (2003) we find that employment increases in the prevalence of social comparisons, while wages decline. Using a utility function as in Gali (1994) we derive for a case of relative comparisons that under the additional assumption of a not too concave production function that the employment and the wage effect of more intensive social comparisons are both positive. Besides the wage and employment effects of social comparisons in monopsony, we were also interested in the welfare effects that the two potentially countervailing distortions have. Interestingly, a social planner would not necessarily suggest an employment level equal to the one in a competitive market without social comparisons. She would only do so for rather special properties on the marginal utility of a worker’s own and reference consumption being fulfilled. This observation bears novel policy implications. A social planner that would try to achieve the optimal employment level by setting wages accordingly would not always suggest a minimum wage. If for a given prevalence of social comparisons the labor supply elasticity to the firm is sufficiently large, she would rather set a maximum wage. Analogously, we find conditions for an optimal use of subsidies and taxes in a monopsony with social comparisons.

In sum, it occurs to us that interesting interactions arise from social preferences (Torstein Veblen) and not competitive labor markets (Joan Robinson) with respect to the effects on wages and employment, and that these call for quite notable modifications on how to think about the role of minimum wages (George Stigler) and other tools of government interventions in such markets.

Appendix

Wage effect for Example 2:

Aggregate labor supply to the monopsonist (for $c = c^* = L^m$) follows from eq. (22). Differentiating, we obtain

\begin{align*}
    z_w &= 1 \quad (38) \\
    z_L &= -m \gamma (1 - \beta) AL^m (\gamma (1 - \beta) + \beta) > 0 \quad (39) \\
    z_\gamma &= -AL^m (\gamma (1 - \beta) + \beta) \ln(L)m (1 - \beta) > 0 \quad (40)
\end{align*}
if $L > 1$.

From the optimality condition for the firm (24) we get

$$b_w = -\frac{1 + \epsilon}{\epsilon} < 0$$

(41)

and

$$b_L = m(m - 1)L^{m-2} < 0$$

(42)

We want to determine the sign of (25). After inserting terms we get for the determinant

$$z_w b_L - b_w z_L =$$

$$= m(m - 1)L^{m-2} - \left(\frac{1 + \epsilon}{\epsilon}\right) \left(m(\gamma(1 - \beta) + \beta) A L^{m(\gamma(1 - \beta) + \beta) - 1}\right) < 0.$$  

(44)

Furthermore, the numerator can be written as

$$-z_\gamma b_L + b_\gamma z_L =$$

$$= \left(AL^{m(\gamma(1 - \beta) + \beta) \ln(L)} m(1 - \beta)\right) m(m - 1)L^{m-2} - w \frac{\epsilon_\gamma}{\epsilon^2} \left(m(\gamma(1 - \beta) + \beta) A L^{m(\gamma(1 - \beta) + \beta) - 1}\right).$$

(45)

Substitution of elasticities and making use of $z = 0$ yields after simplifying terms

$$-z_\gamma b_L + b_\gamma z_L =$$

$$= m(1 - \beta) \left(AL^{m(\gamma(1 - \beta) + \beta) + m-2 \ln(L)} m(m - 1) + \left(m(\gamma(1 - \beta) + \beta) A^2 L^{2m(\gamma(1 - \beta) + \beta) - 1}\right)\right).$$

(46)

For this expression to become negative (so that $\frac{dw}{d\gamma} > 0$) we need to have

$$m A L^{m(\gamma(1 - \beta) + \beta) + m-2} \left(\ln(L)(m - 1) + (\gamma(1 - \beta) + \beta) A L^{m(\gamma(1 - \beta) + \beta) - m+1}\right) > 0$$

(47)

which will be fulfilled if the first term in brackets drops out, i.e. for $m \to 1$. 


References


