Abstract

We study a simple general equilibrium model in which wages are set by collective bargaining as a mark-up over benefits. The inclusion of taxation and the government budget complicates the relationship between employment and hours worked; hence, we present numerical simulations of employment in terms of hours. There is a range of initial hours from which employment can be increased, or unemployment reduced, by cutting standard working time. Welfare conflicts are explained, but our examples show relatively small profit reductions when hours are diminished below the employers’ (collective) optimum, and substantial employment gains. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

Persistently high European Union (EU) unemployment has generated renewed debate over the merits of working-time reduction to stimulate employment. A 35-h normal working week was enacted in France and came into force on January 1, 2000 for enterprises with over 20 employees, and 2 years later for smaller firms. Similar legislation is pending in Italy (OECD, 1998). Earlier studies of working time and employment were inconclusive, but generally sceptical concerning the employment benefits of reducing working time (Calmfors, 1985; Booth and Schiantarelli, 1986; Hoel and Vale, 1986; Hart, 1987). Theoretical
work, with widely differing models, tends to be somewhat more optimistic (Houpis, 1993; Contensou and Vranceanu, 1998a,b, 2000; Marimon and Zilibotti, 2000). The OECD (1998) emphasises the importance of complementary measures such as wage indexation and flexibility, which together might yield modest employment gains in some enterprises. Such measures and a cyclical upswing have combined to yield rapid employment growth in France since the 35-h week was introduced, but it is difficult to isolate the effect of the hours reduction. Lever (1996) finds significant positive effects of hours reduction on employment in a panel of Dutch manufacturing industries and Rubin and Richardson (1997) find positive employment effects of hours reductions in British engineering. On the other hand, Hunt (1998, 1999), in detailed studies of German working time, finds no evidence of employment gains. Roche et al. (1996) review international evidence.

Previous modelling of working time has neglected the general equilibrium interaction between unemployment benefits, the payroll taxes that fund benefits and the resulting wage bargain and employment decisions. Hart and Moutos (1995), however, consider efficient bargaining over hours and wages, but unemployment benefits and other exogenous parameters have no effect on employment in their model when the government budget is included. This implausible result, and much other evidence, suggests that the “right to manage” (RTM) model is more appropriate than efficient bargaining. As Teulings and Hartog (1998, p. 144) point out, “explicit simultaneous bargaining on wages and employment is most unusual. . . The RTM model seems a more accurate description of reality than the efficient bargaining model”. In this paper, we present a first step towards a simple stylish, but consistent, general equilibrium model of the effects of working time and unemployment benefits on employment, wages in collective bargaining, taxes and profits. We adopt strong simplifying assumptions, but numerical simulation are nonetheless required in most cases to obtain quantitative results. Perhaps surprisingly, a substantial range of parameter values suggests employment gains from the reduction of working time.

The plan of the paper is to develop the basic theoretical model in Section (2) progressing from the case of wage and hours setting by a monopoly union, through the regime where employment and hours are determined by individual firms, to the situation where an employers’ association determines hours and employment. A computable case of the model is outlined in Section 3 and is illustrated by simulation results. Conclusions are summarised in Section 4.

2. A general equilibrium model of hours and employment

We assume a competitive economy with representative firms.1 Fixed capital is suppressed since we only consider short-run responses. The production function is Cobb-Douglas:

\[ Q = (h - n)^\alpha N^\beta, \quad 0 < \beta < 1, \quad \alpha > 0 \]  

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1 While imperfect competition might be more appropriate, results are unlikely to be affected by our simplification, and we do not consider the dynamics of firm entry and exit since these issues go far beyond our present scope.
where \( h \) is total working time or hours paid for per worker per period, \( n \) is nonproductive or ‘set-up’ time, a proxy for the non-wage costs of employment, \( N \) is the number of workers, and \( \alpha \) may be less than or greater than one—since the empirical evidence is conflicting. However, since hours represent a utilisation factor for both workers and capital, we expect \( \alpha > \beta \). With a unit output price in the competitive product market, an hourly wage, \( w \), and a payroll tax or employer’s contribution to social security, \( t \), operating profit is given by:

\[
\pi = (h - n)^2 N^B - whN(1 + t). \tag{2}
\]

Since the RTM model—unilateral determination of employment by the firm, given hours and wages (however determined) seems to be more realistic than efficient bargaining over a comprehensive contract, we shall assume that employment, \( \hat{N} \), is chosen by the first order condition for Eq. (2), as a function of \( w, h \) and \( t \):

\[
\hat{N}(w, h, t) = \left[ \beta (h - n)^2 / wh(1 + t) \right]^{1/1 - \beta}, \tag{3}
\]

where the tax is exogenous for a single firm.\(^2\)

Next, we assume that consumer-workers have a simple Cobb–Douglas utility:

\[
U = wh(1 - h), \tag{4}
\]

where we neglect any employee’s contribution to social security, and non-wage income.\(^3\)

Total available time (say, non-sleeping time per work day) is normalised to unity, so leisure is \((1 - h)\), and optimal individual labour supply is \(1/2\), roughly equivalent to the 8-h working day that has long been standard. In addition to simplicity, this utility function has the advantage of generating a constant supply of labour, independent of the wage, which corresponds to the approximate stability of working hours in recent years for advanced economies (and contrasts with the secular decline in working time over the previous two centuries).

Unemployed workers receive benefits, \( B \), which provide alternative utility, \( B \) if benefits are untaxed, as in Germany. Even when benefits are taxed, as in Britain, the lowest rates will apply, and recipients are often entitled to other untaxed benefits. Houpis (1993) has shown that any reasonable bargaining or efficiency wage model will generate a combination of endogenous wages and hours that provide employed workers with utility, say \( \hat{u} \) that is some mark-up over their unemployment utility, so that \( \hat{u} = \lambda B \), where \( \lambda > 1 \), and the mark-up depends on the details of the model of hours- and wage-setting. The bargaining model we develop next is thus one among a variety of related models, all of which yield similar results.

\(^2\) We neglect overtime hours, which are usually chosen unilaterally by firms in response to temporary demand shocks. Theoretical models of overtime often predict an increase of overtime hours following a reduction of standard hours. However, Hunt (1998, 1999) finds no evidence of this in Germany, where total hours closely follow (declining) standard hours, which provides some justification for our concentration on the latter.

\(^3\) Including an employee tax adds notation, but no additional insight to the model.
One extreme form of wage (and hours) setting is the monopoly union. If workers have skills that are firm (or sector)-specific so each firm can only hire from a given potential labour force that is normalised to unity, then the union’s utilitarian maximand is:

\[ V = wh(1 - h)\hat{N} + (1 - \hat{N})B, \]

where \( \hat{N} \) is employment demand from Eq. (3). The first order conditions \( \partial V/\partial h = \partial V/\partial w = 0 \) give the monopoly union’s optimal hours and wages:

\[ h_{MU} = \frac{x + n}{x + 1}, \quad w_{MU} = \frac{(1 + x)^2 B}{\beta(x + n)(1 - n)}. \]

However, if hours are fixed by central government, or bargaining at the national level, the second of the first order conditions give the monopoly union’s wage as a function of hours and benefits:

\[ \hat{w}(h, B) = \frac{B}{\beta h(1 - h)}, \]

and the utility mark-up, \( \hat{u} = B/\beta \). Note that the union optimum, \( h_{MU} \), in Eq. (6) also maximises employment, \( \hat{N} \), from Eq. (3), when the tax, \( t \), is constant in a partial equilibrium.

We can compare the above with the benchmark case of perfect competition in the labour market, where firms must provide a given alternative utility, \( B \), and firms can choose hours as well as employment under their right to manage. The firm faces the utility constraint \( wh(1 - h) = B \) and, with an exogenous tax, profit can be written as:

\[ \pi = (h - n)^{\alpha N^\beta} - [B(1 + t)N/(1 - h)]. \]

The first order conditions then give constrained efficient hours as:

\[ h_{EF} = \frac{x + \beta n}{x + \beta}, \]

and corresponding employment as a decreasing function of \( B \) and \( t \). The wage then follows from the utility constraint as \( w_{EF} = B/h_{EF}(1 - h_{EF}) \). Notice that \( h_{EF} > h_{MU} \) for all \( \alpha \) since \( \beta < 1 \). One can verify that, in a general Nash bargaining situation, hours chosen will tend to the competitive level or efficient \( h_{EF} \) as employer bargaining power (or weight in the objective) becomes large enough, and union power declines. Intuitively, this can be shown as follows: As employer ‘power’ increases relative to union power, the wage and utility mark-up declines, and we approach the competitive situation described above where workers just get their alternative utility, \( B \), and firms choose efficient hours. Thus, \( h_{MU} \) and \( h_{EF} \) are the bounds between which any bargaining outcome will fall. Since the monopoly union is an extreme case, we now assume that employers have some power in the bargaining process; thus, hours are chosen in the interval \( (h_{MU}, h_{EF}) \) as an increasing function of employer power, and unions obtain less than their monopoly mark-up \( 1/\beta \). We denote the general mark-up by \( \lambda \), so \( 1 < \lambda \leq (1/\beta) \), and continue to write the wage bargain

\[ \hat{w}(h_{MU}, B) = w_{MU}. \]
as \( \hat{w} = \lambda B/h(1 - h) \), giving utility \( \hat{u} = \lambda B \). We assume that the mark-up remains unchanged if government intervenes to set hours, \( h \), at a level (slightly) below the bargaining choice.

Next, we introduce a simple fiscal framework and government budget constraint as follows. Assume again a unit potential labour force per firm, so with employment, \( N \), the unemployment rate is \( (1 - N) \), and government expenditure per firm is \( B(1 - N) \). The budget is then:

\[
t_{\hat{w}hN} = B(1 - N).
\]

Using the budget (Eq. (10)) to eliminate the tax, \( t \), from the first order condition (3), we obtain the following general equilibrium employment equation at which the government budget is balanced; firms choose optimal employment and bargainers choose wages and hours (unless the bargainers’ choice of hours has been overruled by government):

\[
\beta(h - n)^{\alpha}N^{\beta} = \{\hat{w}h - B\}N + B.
\]

The left-hand side of Eq. (11) is a concave function of \( N \), and the right-hand side is a straight line that has slope \( \{\hat{w}h - B\} \) and intercept \( B \). As Fig. 1 shows, there are two solutions, in general. The lower, inefficient solution, say \( N_D(h, B) \), might be viewed as a classical Keynesian depression, and it is easy to see that \( \partial N_D/\partial B > 0 \); thus, we have a rather surprising case of both employment and wages, \( \hat{w} \), being increased by more generous benefits because the distortionary tax from the budget (Eq. (10)), say \( t_{D,} = B(1 - N_D)/\hat{w}hN_D \), declines as the tax base grows.\(^5\) Note, however, that maximum employment under this regime is attained when the straight line, or right-hand side of Eq. (11), is tangent to the left-hand side and thus may still involve high unemployment.\(^6\) The two solutions are examples of the Pareto-ordered, multiple Nash equilibria that can arise under strategic complementarity due to increasing returns, or, in our case, due to the declining tax burden as aggregate employment increases (Cooper, 1999).

The larger, constrained efficient solution of Eq. (11), say \( N^*(h, B) \), appears to be the more plausible general equilibrium employment concept in a modern economy with already relatively high benefits. \( N^* \) is effectively defined as maximum employment with

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5 If we include other government expenditure, \( G \), then \( N_D \) also increases with \( G \).

6 Details of the transition from one kind of equilibrium to another go beyond the scope of our simple static modelling here.
the minimum equilibrium, budget-balancing tax, say \( t^*(h, B) \), so that \( N^*(h, B) = N(\hat{w}(h, B), h, t^*(h, B)) \), where \( t^* \) follows from the budget (Eq. (10)) by substitution of \( N^* \). In this case, differentiating Eq. (11) shows that \( \partial N^*/\partial B < 0 \) as we would expect. To obtain the effect of hours changes, differentiate Eq. (11) and use Eq. (3) to find:

\[
\frac{\partial N^*}{\partial h} = \left\{ \frac{\alpha (1 + t^*)}{h - n} - \frac{1}{1 - h} \right\} \frac{\hat{w} h N^*}{(\hat{w} h - B) - \beta^2 (h - n)^\beta N^*^{\beta - 1}}.
\]

(12)

However, from the figure, the slope of the straight line is less than the slope of the curve (left-hand side) at \( N^* \), or \( \beta^2 h^\beta N^*^{\beta - 1} < \hat{w} h - B \), which implies that the denominator of Eq. (12) is positive. For small \( h \), the numerator is also positive—while for \( h \) close to 1, it is negative.

It follows that \( N^* \) is an inverse U-shaped function of hours, which turns out to be concave in the simulations below. The inverse U-shape is intuitively plausible because an extension of hours from a low base increases productivity at little utility cost to workers and unions. However, as hours increase, the utility cost begins to rise rapidly—generating compensating wage demands from the union that more than offset the productivity gains and, hence, leads to a declining demand for employment. This also suggests that, starting from the long hours and low wages that were standard in early Postwar Europe, reducing working time was most likely to boost employment. On the other hand, countries with strong union representation and currently with relatively low hours, such as Germany, are least likely to benefit from further reductions. This situation contrasts with countries such as the UK where weak unions, relatively low benefits and wages, and the longest working hours in the European Union (averaging nearly 44 h/week for full-time workers, compared to the EU average of about 40 h), offer more scope for benefits from reducing hours.

General equilibrium employment-maximising hours, say \( h^*_m \), thus follow directly from Eq. (12) as a function of benefits:

\[
h^*_m(B) = \frac{n + \alpha(1 + r^*_m)}{1 + \alpha(1 + r^*_m)},
\]

(13)

with the corresponding tax from the budget being given by:

\[
r^*_m(B) = t^*(h^*_m, B) = \frac{B(1 - N^*)}{\hat{w} h^*_m N^*} = \frac{\beta(1 - h^*_m)(1 - N^*(h^*_m, B))}{N^*(h^*_m, B)}.
\]

(14)

Clearly the equilibrium tax and, hence, \( h^*_m \), are increasing functions of benefits (in contrast to the depression tax, \( t_D \)) so that reducing hours from some initial level, \( h \), is more likely to reduce employment as well in economies with high taxes and benefits.

We have seen that any plausible bargain or choice of hours must be bounded below by the monopoly union choice, \( h_{MU} \), and above by the competitive firms’ choice, \( h_{EF} \). Thus, only if employment-maximising hours, \( h^*_m \), are below the upper bound, \( h_{EF} \), is there a nonempty interval \((h^*_m, h_{EF})\), where \( N^* \) is declining so that a mandatory reduction in

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7 These figures concern 1999 and come from the Community Labour Force Survey carried out by EUROSTAT, the EU’s Statistical Office.
working time will increase employment. This condition, \( h_{m^*} < h_{EF} \), can be rearranged from Eqs. (9) and (13) to give a bound on equilibrium taxation as follows:

\[
t_m^* < (1 - \beta)(1 - n)/\beta. \tag{15}
\]

This is a fairly weak condition that should be satisfied for most reasonable parameter choices. In our simulation examples below, \( h_{MU} \) and \( h_{m^*} \) are very close.

We can now summarise our main results as follows:

**Proposition 1.** Provided that benefits and, hence, equilibrium taxes are not ‘too high’ so that Eq. (15) is satisfied, and employer influence on the determination of current hours, \( h \), is ‘strong enough’ so that \( h_{m^*} < h \leq h_{EF} \), then a small mandatory reduction of hours will raise employment. If taxes are ‘too high’ so Eq. (15) is not satisfied, or if union influence is ‘strong enough’ so that (in either case) \( h < h_{m^*} \), then reducing \( h \) will reduce employment.

We have considered a monopoly union setting hours and wages, which is the extreme case of bargaining when employers have zero power, and the other extreme of employers choosing efficient hours facing exogenous taxes and a utility constraint in perfect competition (with no union power). We now conclude with another polar case of an employers’ association collectively choosing optimal hours at the national level, given labour demand, \( \hat{N} \), by individual firms facing a utility mark-up, \( \lambda \), and wage bargain, \( \hat{w} \), and the resulting general equilibrium employment, \( \hat{N}^* \) (with budget-balancing taxes, \( t^* \)), from Eq. (11). In this setting, general equilibrium profit using the first order condition (3) is:

\[
\pi^*(h, B) = (1 - \beta)(h - n)^\gamma \{N^*(h, B)\}^\beta,
\]

and the first order condition \( \partial \pi^*/\partial h = 0 \) gives an employers’ collective optimum, say \( h_{eo} \), such that:

\[
-\frac{\alpha}{\beta} = e_{N^*h}, \tag{17}
\]

where \( e_{N^*h} \) is the elasticity of employment with respect to hours at \( h_{eo} \). This is an interesting result because it shows that employers collectively always prefer hours in the range of decreasing employment, with \( h_{eo} > h_{m^*} \), where a statutory reduction of working time would increase employment. Thus, if employers are individually or collectively influential in the determination of standard hours at national level, then cutting hours is more likely to benefit employment.\footnote{Another variant that was suggested by Radu Vranceanu is for the employers to collectively choose both hours and employment while recognising the endogeneity of the tax that is required to balance the government budget from Eq. (10). We shall not pursue this here since the degree of coordination required seems to approach central planning rather than a largely decentralised market economy.}

In the simulations that follow in the next section, we shall see that \( h_{eo} < h_{EF} \). The reason is essentially that \( h_{EF} \) is chosen by individual employers who treat the tax as exogenous (and who are unconstrained by union bargaining power). In the collective choice of profit-maximising, \( h_{eo} \), employers recognise the endogeneity of \( t^*(h, B) \) so they gain some...
reduction of their tax burden by cutting hours from $h_{EF}$ in order to reduce unemployment and the tax burden due to the need to finance benefit payments, $B(1-N^\ast)$.

We now have an extension of Proposition 1 as:

**Proposition 2.** Suppose that Eq. (15) is satisfied as in Proposition 1, and employer influence is strong enough so that current hours $h$ are such that $h_{eo}<h<h_{EF}$. Then a mandatory reduction would raise both profits and employment, but at the cost of lower wage income since $\hat{w}h=\lambda B/(1-h)$. Since the hourly wage is minimised when $h=1/2$ (which is individual labour supply), then it is obvious that a small reduction in hours, $h$, when $h>1/2$, will always reduce the hourly wage rate. In addition, if current hours are less than the employers’ collective optimum, $h_{eo}$, and satisfy $h_{m}^{*}<h<h_{eo}$, then a reduction in hours will raise employment, lower profits and ‘almost certainly’ lower the hourly wage too.

**Proof.** It only remains to prove the last assertion. We find, by logarithmic differentiation, that:

$$\text{sign} \frac{\partial \hat{w}}{\partial h} \bigg|_{h=h_{m}^{*}} = \text{sign}\{x^2(1+t_{m}^{*})^2 - 1 + 2n[1 + x(1 + t_{m}^{*})]\}.$$ 

Thus, the sign will be positive provided $x>1/(1+t_{m}^{*})$ for any $n \geq 0$, which is ‘almost certainly’ satisfied by plausible values of $x$ close to one, and positive equilibrium tax rates. For strictly positive $n$, the lower bound for $x$ is obviously smaller still.

Finally, it is interesting to see how our simple general equilibrium model displays various distributional conflicts. Raising benefits reduces employment and profits while improving the welfare of both employed workers and the unemployed. Only job losers are likely to suffer. The utility of employed workers is just $kB$; thus, a large enough increase in benefits, say from $B_1$ to $B_2$ (starting from ‘low’ $B_1$), could mean that job losers do not suffer, if $B_2>\lambda B_1$, though this is unlikely in practice.

### 3. The computable case of $\beta=1/2$ and a monopoly union

To obtain further insight and quantitative results from simulations, we consider the simple special case with $\beta=1/2$ and $n=0$. Setting $x=N^{1/2}$, we can transform Eq. (11) into a quadratic:

$$2Bg(h)x^2 - h^2x + 2B = 0.$$ 

The larger root is:

$$x^{*} = \frac{h^{\ast} + \{h^{2\ast} - 16B^{2}g\}^{1/2}}{4Bg},$$ 

where $g(h) = (1+h)/(1-h)$. We also write $f(h) = h^{2\ast}/16g(h) = h^{2\ast}(1-h)/16(1+h)$, and then have the following condition on government expenditure for real $x^{*}$ from Eq. (19):

$$B^{2} \leq f(h).$$

Equality in Eq. (20) gives the unique solution \( x^* = h^2/4Bg \), corresponding to the tangency solution in Fig. 1.

To further explore the behaviour of the solution \( x^* \), differentiate \( f(h) \) to show that, for positive hours, this function has a unique maximum at \( h_0 = [1 + 4a^2]^{1/2} - 1] / 2x \). Together with Eq. (20), this means that we must have \( B^2 \leq f(h_0) \). While \( f(h) \) is not always concave, the derivative is positive for \( h \in (0, h_0) \), and negative for \( h \in (h_0, 1) \). Also, \( f(0) = f(1) = 0 \), and \( f'(0) = 0 \) when \( x > 1/2 \).

From Fig. 2, we can thus see that any admissible \( B^2 < f(h_0) \) defines an interval \( H = [h(B^2), \bar{h}(B^2)] \), by the increasing function \( h(B^2) \) and the decreasing function \( \bar{h}(B^2) \). Given an admissible \( B^2 \), only hours \( h \in H(B^2) \) yield a real solution for employment from Eq. (18).

Our ultimate interest is in the behaviour of equilibrium employment \( N^* = x^* \), according to Eq. (19). For given \( B^2 \), we must restrict hours to the interval \( H(B^2) \), but if \( B \) is small enough, the value of \( x^* \) may exceed 1 for some interval of hours in \( H(B^2) \). This implies excess demand for labour so that our bargaining solution \( \hat{w} \) will no longer hold. Thus, we will usually restrict attention to parameter values for which max \( x^* \leq 1 \). In the usual case of maximum employment attained at \( h^*_m \) with \( h^*_m < \bar{h}(B^2) \), then if initially given hours exceed \( h^*_m \), there is scope to increase employment by reducing hours. We explore the relationship between (admissible) hours and employment according to Eq. (19) in the simulations that follow since any analytical characterisation is difficult.

In the case of excess demand for labour at the wage bargain \( \hat{w} = \hat{w}/h(1 - h) \), we would expect the wage to rise to the market clearing level, which follows from Eq. (3) with \( \hat{N} = 1 \) as, say, \( \hat{w} = \beta/h^{1 - \hat{z}}(1 + t^*) \). Since a lack of market clearing or the existence of unemployment corresponding to this observation is our main concern here, we shall choose parameters to avoid intervals of full employment where the bargaining mechanism is suppressed.

It is also of some interest to examine the behaviour of the equilibrium, budget-balancing tax, \( t^* = (B(1 - N^*)) / \hat{w}hN^* \), as a function of hours. At the end points of the admissible interval \( H \), we can verify that \( t^*(h, B) = h \), where \( h = h(B^2) \) or \( \bar{h}(B^2) \), and the following simulations show that \( t^* \) is U-shaped between these endpoints.

![Fig. 2. Benefits and hours for the case of a monopoly union.](image)
Our first simulation, Simulation 1, plots equilibrium employment $N^* = x^*^2$ as a function of hours according to Eq. (19), for various levels of benefits, $B$. Higher benefits reduce employment as already noted. More surprisingly, $N^*$ is always a concave function of hours, though we have been unable to prove this analytically. Concavity still holds for other values of $\alpha$ and $\beta$ in unreported simulations.

Simulation 2 compares employment ($N^*$), profit ($\pi^*$) and the tax rate ($t^*$) for $B = 1/15$, at which unemployment is always positive. A number of interesting points emerge from these plots. Profit in general equilibrium is of course maximised at the employers’
(collective) optimal hours, $h_{co}$, but the profit function is remarkably flat over the relevant range. Simulation 3 plots employment ($N^*$) along with the wage rate and wage income for the same parameter values as Simulation 2. As we stated earlier, the wage rate is increasing from $h = 1/2$, although it is very flat around the minimum. The broad picture that emerges from these simulations is that employment can be increased by a small reduction in working time for a well-defined range of parameter values, at little cost in terms of profit or wage loss. Since the employment function is much steeper around its peak at $h_m^*$ than the `flat’ profit and wage functions, this does put the prospect of a nonnegligible employment gain in a more favourable light than in many previous, partial equilibrium, models.

4. Conclusions

We have shown how collective bargaining and the relative strength of unions and employers impose natural bounds on the choice of hours. The lower bound is the monopoly union’s choice, $h_{MU}$, which, in general, is close to the general equilibrium employment-maximising level, $h_m^*$ (the point at which the conflicting effects of productivity gain and utility loss, associated with increasing hours, just balance). Thus, if employers have some power in bargaining, as seems plausible, so that hours are chosen to be greater than both $h_{MU}$ and $h_m^*$, then a small mandatory reduction will raise employment. This, perhaps surprising, analytical result is complemented by the illustrative simulations, which show that profit or wage losses from a small cut in working time are likely to be negligible. In some cases, both profit and employment can be increased when hours are cut.
Our general equilibrium model that combines realistic bargaining and the “right to manage” with budget-balancing taxation thus yields a more optimistic evaluation of the effects of mandatory work-time reduction than most previous, partial equilibrium, models. The model is obviously stylish, but, even as a first attempt, it does provide some suggestive hints on these much-discussed policy questions. In particular, countries with strong collective bargaining institutions and high benefits, taxes and wages, such as France and Germany, are less likely to benefit from further cuts if their already relatively short hours than countries such as the UK and the USA. Ironically, there is little public discussion of working time in the latter countries that might well have the most to gain from such measures.

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