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The Work-and-Spend Cycle in a Globalized World

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Abstract

In this paper we show that globalization might cause an inefficient reduction of working time regulation. The argument rest on the assumption that people care about their relative standing and that national policymakers fail to completely internalize the consumption externality of the increasingly international reference standards.

The views expressed in this paper do not necessarily reflect those of the Oesterreichische Nationalbank.

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1 Introduction

Working time differs considerably across countries. While in the US the average annual working hours in 2003 have been 1.792, they were only 1.596 in the EU-15 (OECD 2004). In recent years a number of studies have tried to explain this discrepancy by reference to differences in taxes, institutions or preferences (cf. Prescott 2004, and Alesina et al. 2006). The common starting point in this discussion is that the choice of working time is ultimately a matter of individual preferences and that all regulations above a certain minimum standard are therefore harmful (cf. IMF 1999, p. 117).

In this paper we want to look at this issue from a slightly different perspective. In particular, we want to argue that an excessive reduction of working time regulation might lead to suboptimal outcomes, especially if it takes place as a reaction to international competitive pressures. Such inefficiencies follow if people care about relative consumption (cf. Frank 1985, and Weiss and Fershtman 1998). In order to improve their relative standing in terms of consumption people increase their labor supplies. Insofar as this is the common practice in society nobody will gain from these “extra hours” in the end and the only result will be a vicious cycle of work and spend (cf. Schor 1998). In this situation working time regulations can serve the purpose of counteracting the inefficiencies that are present in the absence of intervention.

National policymakers might, however, fail to fully internalize the consumption externalities since the developments in communication and information technology have caused an “internationalization” of reference standards.¹ The life style in one country now increasingly influences the reference standards in other countries and corrective taxes and working time regulations that have been designed for the closed economy might look inappropriate in this new constellation. Globalization and the internationalization of reference standards might thus induce national authorities to decrease working time regulation beyond the level where such a reduction is optimal. Such a situation can be interpreted as yet another example of a phenomenon that has been termed the “new systems competition” (“Competition is bad, when government intervention is good”, Sinn 1997, p. 270). The competition between economic systems about the extent of working time regulation might reintroduce an international work-and-spend cycle that is similar to the national work-and-spend cycles that have evoked the working time regulation in the first place.

In this paper we present a simple model to analyze this argument in more detail.

2 A Simple Model

We assume that there exists a continuum of countries of unit mass and in each country n another continuum of identical individuals of unit mass. Individual i in country n cares about his absolute consumption $C_n(i)$ and his relative consumption vis-à-vis to some

¹“Large cosmopolitan elements in many populations now take their consumption standards from the well to do in New York, Milano or Tokyo rather than their domestic exemplars of style and respectability.” (Bowles and Park 2005, F411).

reference standard $R_n(i)$ that is identical for all individuals in a country (i.e. $R_n(i) = R_n$). Absolute and relative consumption are weighed by $1 - \theta_n$ and θ_n , respectively, such that the total “contribution” of consumption to utility can be written as: $C_n(i) - \theta_n R_n$. The reference standard R_n is composed of a “domestic component” \bar{C}_n and a “foreign component” \bar{C} , where $\bar{C}_n = \int_0^1 C_n(i) di$ and $\bar{C} = \int_0^1 \bar{C}_n dn$ are the average consumption in country n and the average world-wide consumption, respectively. The relative weight of the two elements is given by δ_n such that we can write $R_n = (1 - \delta_n)\bar{C}_n + \delta_n\bar{C}$. The internationalization of aspirations can be captured by an increase in the weight δ_n .

The utility function is given by:

$$U_n(i) = \alpha \ln(C_n(i) - \theta_n R_n) - \beta L_n(i), \quad (1)$$

where $L_n(i)$ stands for labor supply. The (homogeneous) wage rate is given by W_n and the government is assumed to levy a proportional tax τ_n where the proceeds of the tax are redistributed in a lump-sum fashion. The budget constraint is thus given by: $C_n(i) = (1 - \tau_n)W_n L_n(i) + T_n$, where $T_n = \tau_n \int_0^1 W_n L_n(i) di$.²

Since each individual is infinitesimally small he will neglect any possible impact of his own consumption decision on the reference standard ($\frac{\partial R_n}{\partial C_n(i)} = 0$). This consumption externality is thus a source of inefficiency. Inserting the budget constraint into (1) and maximizing leads to the competitive equilibrium (denoted by “c”). The labor supply for the representative individual in country n comes out as:

$$L_n^c = \frac{\alpha(1 - \tau_n)W_n + \beta\delta_n\theta_n\bar{C}}{\beta[1 - (1 - \delta_n)\theta_n]W_n} \quad (2)$$

Such a labor supply schedule holds for every country n and the continuum of schedules together with the aggregation condition for \bar{C} defines the global equilibrium.

We distinguish between international and national social planners. The national social planners maximize the utility of their representative individuals. Their social welfare functions are thus given by:

$$SWF_n^{nat} = \alpha \ln(C_n - \theta_n R_n) - \beta L_n \quad (3)$$

The national social planners thereby take the budget constraint $C_n = W_n L_n$ and the equilibrium condition $\bar{C}_n = C_n$ into account. The international social planner, on the other hand, maximizes:

$$SWF^{int} = \int_0^1 [\alpha \ln(C_n - \theta_n R_n) - \beta L_n] dn, \quad (4)$$

and he takes not only $\bar{C}_n = C_n$ but also $\bar{C} = \int_0^1 \bar{C}_n dn$ into account. We assume that the social planners use the tax rate to implement the optimal optimal labor supplies that

²Here and in the following we assume that the distribution of abilities is sufficiently compressed, such all individual optimal plans are feasible in equilibrium: i.e. $C_n(i) - \theta_n R_n \geq 0$, $L_n(i) \geq 0$.

follow from the maximization of (3) and (4).

3 System Competition and the Inefficiency of the Global Equilibrium

In a later part of the paper we will discuss the case of a two-country model with asymmetric structures. In this section we will, however, focus on the symmetric case where the structural parameters of all countries are identical:³

$$\frac{\text{Assumption of International Symmetry}}{W_n = W, \theta_n = \theta, \delta_n = \delta, \tau_n = \tau, \forall n} \quad (5)$$

From assumption (5) it follows that there will be a symmetric equilibrium with identical levels of consumption and labor supply in all countries and thus $\bar{C} = C_n, \forall n$. We can use this condition in (2) together with $C_n = L_n W_n$ to derive that for all n :

$$L_n^c = \frac{\alpha(1 - \tau)}{\beta(1 - \theta)} \quad (6)$$

The maximization of (4) under assumption (5) leads to the optimal solution of an international social planner:

$$L^{int} = \frac{\alpha}{\beta} \quad (7)$$

Comparing (6) with (7) we can observe that the tax rate that implements this optimal level of international labor supply is given by:

$$\tau^{int} = \theta \quad (8)$$

The tax rate should thus be set equal to the strength of the comparison motive which is the source of the inefficiency of the competitive equilibrium.⁴ Thereby both the domestic and the international consumption externalities are completely internalized and world-wide labor supply equals the value that comes out in the basic benchmark model with $\theta_n = 0$ and $\tau_n = 0$. The degree of “internationalization” δ does not matter for the policy choice since each unit of consumption produces the same total external effect, independent of whether this external effect is primarily a domestic or a foreign phenomenon. For the optimal internalization only the concern for relative standing θ matters.

The assumption of an international social planner is, however, primarily a theoretical possibility. In reality we rather observe a situation where national policymakers act in an

³In particular we assume that the structural parameters W_n , θ_n and δ_n are identical across countries. The identity of the tax rates then follows from the assumption that also the behavioral responses of the social planners are symmetric.

⁴This result can also be found in the related literature (e.g., Ljungqvist and Uhlig 2000, Abel 2005, and Alvarez-Cuadrado 2006).

uncoordinated way such as to secure the competitiveness of their countries. The optimal levels of labor supply and the corresponding tax rate following from the maximization of (3) are:

$$L^{nat} = \frac{\alpha}{\beta} \left(\frac{1 - (1 - \delta)\theta}{1 - \theta} \right) \quad (9)$$

$$\tau^{nat} = (1 - \delta)\theta \quad (10)$$

Comparing (9) with (7) and (10) with (8) we can conclude that the tax rates chosen by the national social planners are inefficiently low and the labor supplies are inefficiently high. Both countries could be made better off by setting taxes equal to the first-best level $\tau = \theta$ which is associated with the first-best level of working time $L = \frac{\alpha}{\beta}$. However, these levels will not be chosen by the uncoordinated national social planners that disregard the cross-country spillovers due to the international component of the reference standard.

The case of a closed economy corresponds to a situation with $\delta = 0$. In this case (9) reduces to $L^{nat} = \frac{\alpha}{\beta}$ and (10) to $\tau^{nat} = \theta$. Obviously, in this case the optimum of the national planner coincides with the one of an international planner. By setting $\tau^{nat} = \theta$ the national planner can completely internalize the consumption externality and achieve the optimum allocation.

If the process of globalization, however, leads to a “shrinking of the world” and a general increase in δ then this will induce the national policymakers to decrease the tax rate ($\frac{\partial \tau^{nat}}{\partial \delta} < 0$). As a consequence the labor supplies in all countries will increase which is suboptimal. In fact, as shown in (7) and (8), the optimal reaction to an increase in δ would be to simply ignore it since only the overall importance of relative standing θ matters and not the distinction between the domestic and the foreign component.

The inefficiency of the national equilibrium follows from the fact that the reach of nation states in this model is smaller than the reach of economic activities and perceptions. National social planners are not powerful enough such as to enforce policies that internalize the externalities completely. This is in fact the mirror image of the inefficiency of the closed laissez faire economy where each individual is too weak to implement the efficient solution and only government intervention can restore the optimal equilibrium. The separated countries in the multi-country model correspond to the individuals in the single-country economy insofar as they are also too small to enforce the efficient equilibrium. In a globalized world where countries compete against each other the inefficiencies for which the government interventions have been established in the first place reemerge on the larger scale. As noted in the introduction, this is just another example for the problematic aspects of “systems competition” that has been studied by Sinn (1997, 2003).

4 The Asymmetric Case

In order to show that competition among countries in terms of working time regulation might lead to an inefficient outcome it was sufficient to concentrate on the case of international symmetry ((5)). In this section we want to briefly deal with the case of asymmetries

in the case with two countries, H and F .⁵ We can follow similar steps as above and derive the optimal tax rates chosen by the national and the international social planners:

$$\tau_H^{int} = \frac{[1 - \delta_H(1 - \theta_F) - (1 - \delta_F)\theta_F] \theta_H W_F + \delta_F \theta_F W_H}{[1 - (1 - \delta_F)\theta_F] W_F + \delta_F \theta_F W_H} \quad (11)$$

$$\tau_H^{nat} = (1 - \delta_H)\theta_H \quad (12)$$

Parallel expressions hold for τ_F^{int} and τ_F^{nat} . We want to deal with two cases: an unilateral increase in δ_H while δ_F stays constant and a general increase in δ where $\delta_H = \delta_F = \delta$.

Unilateral increase in δ_H (for constant δ_F). This case corresponds to a situation where some (rich) countries are continuously gaining influence on “international reference standards” due to the development of world media and the internet. Such a process could be further aggravated if people primarily make upward comparisons (and F is the richer country). If δ_H increases then we see from (12) that a national planner will decrease the tax rate in country H while the one of country F will stay constant. This will cause an increase in labor supply in H . But since an increase in L_H will also increase the reference standard in country F (as long as $\delta_F > 0$) we can conclude that in the case of national social planners an increase in δ_H will lead to more labor supply in *both* countries. An international social planner on the other hand will behave differently. In particular, it can be shown that $\frac{\partial \tau_H^{int}}{\partial \delta_H} < 0$ and $\frac{\partial \tau_F^{int}}{\partial \delta_H} > 0$ and thus also $\frac{\partial L_H^{int}}{\partial \delta_H} > 0$ and $\frac{\partial L_F^{int}}{\partial \delta_H} < 0$ where $\frac{\partial L_F^{int}}{\partial \delta_H} = -\frac{\partial L_H^{int}}{\partial \delta_H}$. An international social planner will thus hold the total world labor supply constant while allowing for a shift in the labor between the two countries. This follows from the fact that the rise in δ_H increases the total external effect of the consumption level of country F . The optimal reaction to this change is to raise the tax rate τ_F^{int} . By the same logic the corrective tax in country H can be allowed to decrease.

General increase in $\delta_H = \delta_F = \delta$. This case captures a general ratcheting up of the international components of reference norms. Now national social planners will decrease taxes in *both* countries (cf. (12)). This will thus have an even larger positive effect on the labor supplies in both countries than in the first example. This outcome leads again to an inefficient situation. An international social planner will also implement tax changes but again in a way such that $\frac{\partial L_F^{int}}{\partial \delta} = -\frac{\partial L_H^{int}}{\partial \delta}$, i.e. such that the average world-wide supply of labor stays constant. The distribution of the labor supply changes between the two countries is now ambiguous and will depend on the relative structural situation of the two countries. For the tax rates we can show that $\frac{\partial \tau_H^{world}}{\partial \delta} < 0$ for $\frac{\theta_H}{1 - \theta_H} \frac{1 - \theta_F}{\theta_F} \frac{W_H}{W_F} < 1$. Thus, a reduction in τ_H^{world} is more likely to be optimal when country H is relatively poor

⁵This assumption is made for simplicity. In this case we assume that the reference standards for the two countries is given by: $R_H = (1 - \delta_H)\bar{C}_H + \delta_H\bar{C}_F$ and $R_F = (1 - \delta_F)\bar{C}_F + \delta_F\bar{C}_H$. Furthermore, we assume that the national social planners disregard a possible impact of domestic consumption on the foreign part of the reference standard (i.e. $\frac{\partial \bar{C}_F}{\partial C_H} = 0$ and $\frac{\partial \bar{C}_H}{\partial C_F} = 0$).

($W_H < W_F$) and if its concern for relative standing is comparatively weak ($\theta_H < \theta_F$). It is important to note, however, that in case where the optimal reaction to an increase in δ is to decrease τ_H^{world} it must be accompanied by an *increase* in τ_F^{world} (i.e. $\frac{\partial \tau_H^{world}}{\partial \delta} < 0 \Leftrightarrow \frac{\partial \tau_F^{world}}{\partial \delta} > 0$). An universal race to the bottom in working time regulation and corrective tax rates is never the optimal reaction to a general rise in the importance of international reference standard. This is the main difference to the situation where national social planners compete with each other and where systems competition might cause a harmful cycle of working time deregulation.

5 Conclusion

In this paper we have presented a model that shows that the competitive reduction of working time regulations might lead to suboptimal outcomes if the involved countries do not fully internalize both domestic and international consumption externalities. One conclusion from this analysis is that international agreements concerning working time (like the ILO conventions and the EU directives) serve a reasonable purpose inasmuch as they help to internalize this international externality. Of course the simple model presented in this paper cannot say much about the details of the regulation concerning daily, weekly, monthly and lifetime working time. Without doubt there exists room for improvement in the existing legislations along all of these dimensions. Nevertheless, the results of the model sound a warning not to throw out the baby with the bathwater. Some internationally agreed regulation of working time is necessary to deal with domestic and global consumption externalities and to prevent systems competition in an area that is essential for peoples' welfare.

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