

Maternal Addiction to Parental Leave*

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Abstract

The increased demand for a more equal parental sharing of the responsibilities for children has led many countries to reconstruct their parental leave systems so to provide stronger incentives for fathers to participate in childcare. Father's quotas are becoming widely spread across Europe. This paper provides arguments for why it may be welfare improving for both parents to increase the father's share of the family's parental leave time. However, regulations in terms of father's quotas may not be optimal since it fails to recognise potentially heterogenous preferences. Instead, self-commitment devices should be provided in order to prevent mothers from taking too large share of the family's leave time.

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1 Introduction

The last three decades have seen a substantial increase in the number of votes favoring a more equal participation of fathers and mothers in the care for children. This development can be seen in light of the remarkable increase in female labor force participation that has taken place in most industrialized countries. As women gradually have taken a larger responsibility for the breadwinning, it is argued, that also taking the full responsibility for childcare and the household are unsustainable in the long run. Psychological research also point at the benefits for child development that comes from having fathers taking a larger responsibility for children's upbringing (see Russell and Hwang, 2004, Haas and Hwang, 1999).

The trend towards more equal parenthood is also reflected in the family policies conducted in modern industrialized countries. Although most family benefits were, until quite recently, targeted towards mothers, most countries have now moved towards more gender neutral constructions of their family policies. Considering the paid parental leave system, Sweden became the first country that replaced the maternity-leave system with a parental-leave system, where the same rules applied to both fathers and mothers. After Sweden's implementation of parental leave in 1974, the other Nordic countries followed; Norway in 1977, Finland in 1978, and Denmark in 1984. Today most European countries offer fathers the possibility of parental leave.¹ However, although having benefits where fathers are entitled to leave can be considered a step towards more equal parenthood, the schemes were upon introduction fully transferable between the parents (Ferrarini, 2003). And, in practice, moving from maternity leave to parental leave has only had a modest impact on the division of parental leave between the parents (Bruning and Plantega, 1999).²

In order to further enhance fathers' participation in childcare many countries have recently reconstructed their parental leave systems so to specifically provide stronger incentives for fathers to participate in childcare. In 1995, Sweden introduced a daddy-month which was offered on an 'use it or lose it' basis. If the father fails to take the leave, it simply becomes unavailable

¹In 1997 the then 15 EU member states signed the Amsterdam Treaty on European Union, which included an agreement on social policy that obligated all EU members to provide at least three months of unpaid parental leave to both men and women (Haas, 2002).

²See Haas (1993) for the development in the US.

to the family. This daddy-month was extended to two months in 2002. In Iceland three months of parental leave is specifically devoted to each of the parents, and only three months out of the total nine months can freely be allocated between the parents. In Italy the family is entitled to 10 months of parental leave. However, in order to encourage fathers to take time off for parenting, the family is given an extra month if the father uses at least three months of the family's parental leave. In Austria, the paid parental leave for the family is extended with six months if the father takes at least six months of the total family leave time. Other countries that have introduced individual non-transferable components in their parental leave systems are: Belgium, Croatia, Denmark, Finland, Greece, Netherlands and Norway.³

One may ask whether these policy initiatives, striving towards more equal parenting, have succeeded in its aim. In fact, the effects on paternal behavior of most of these reforms have not yet been evaluated. Ekberg et al (2002) and Eriksson (2005), however, have evaluated the introduction of the daddy-month in Sweden 1995, and the extensions of it that took place in 2002. The daddy-month reforms have contributed to a more equal sharing of the paid parental leave between the parents. Ekberg et al (2004) shows that the introduction of the first daddy-month induced an increase in fathers' leave time of on average 15 days. In particular, the first daddy-month induced the share of fathers taking zero days to decrease from 54 to 18 percent, and the number of fathers using around one month of parental leave to increase from 9 to 47 percent. Eriksson (2005) shows that the introduction of the second daddy-month increased the share of fathers taking between 30 and 70 days of parental leave with 6.1 percentage points. However, mothers still take about 90 percent of the family's parental leave.

Although there is a trend towards more equal parenting in many countries, the pace of this change may be regarded as low. It is often argued that the slow pace in progress towards a more equal sharing of the responsibilities of the children can be attributed to men. So if only fathers were willing to take on a larger responsibility for the household and the children, the problem would be solved. According to attitude surveys, however, this may not be a just story. The Swedish Social Insurance Administration asked mothers and fathers about how they thought about their own division of paid parental leave between the spouses. The answers showed that it was fathers that were the least pleased with the uneven distribution between

³Council of Europe, 2005.

the spouses. And when the mothers were asked what was the main cause of the distribution, the most frequent answer – marginally more important than economic factors – was that it was their own preference (Swedish Social Insurance Administration, 2003). The view that the skewed distribution has equally well to do with mothers as with fathers, is substantiated by Australian research. See Lupton and Barclay (1997) who used in depth interviews with fathers and examined how couples shared the care giving and breadwinning in the family.⁴

Even if research and the public opinion may be coherent in that it is good for a child to have access to both parents when growing up, to which exact extent the father and the mother should take part is less agreed upon. There are arguments put forth in favour of the mother taking the main responsibility for childcare, although other arguments stress the importance of equal parenting. This paper does not concern which parent is the best caretaker or what the optimal division of parental leave is – if such exists. Rather, this paper sets out to explain why moms may use more parental leave, and fathers may use less parental leave, than both parents initially intended to. Thus, the paper provide arguments for why it may be welfare improving to increase the father’s share of the family’s parental leave at the expense of the mother’s time on leave.

The paper builds on the literature on hyperbolic preferences. We develop a simple model with present-biased preferences for the purpose of investigating mothers’ and fathers’ time use in care for children. We assume that mothers, for exogenous biological or historical reasons, stay home with the child during the very first period after birth. This very early mother-child relation founds maternal addiction to parental leave, resulting in an instantaneous utility loss of going back to work. For mothers with present-biased discounting this may induce over-investment in maternal leave, from the ex ante self’s perspective. The logic behind this is rather straightforward: present-biased preferences give a disproportionate high weight to the instantaneous utility (or disutility). As the mother perceives going back to work as an instantaneous loss of utility, traded in for anticipated future wellbeing of

⁴Their research was discussed in The Sydney Morning Herald 2002: "When a number of men, some of whom earned less than their partners, raised the possibility of being the ones to stay home, the attitude of their wives was 'no way'. There are many women who are still resistant to allowing men that option. The whole of the discourse is that it's a woman's choice. It's never assumed to be man's choice. It's a very rare guy who is going to be able to sit there and argue 'Hey, it's my turn'".

the child, the inflated instantaneous utility introduces a wedge in the evaluation of instantaneous utility relative expected future utility. The logic is completely analogous to the standard example of how present-biased utility may induce too much smoking: the smoke-addict trades of instantaneous utility from smoking at the cost of expected future health problems.⁵

If, instead, the father is the sole decision maker, the inverse logic applies to his choice of time division. As the father is working the first period of the child's life, leaving work to take care of the child at home is associated with an instantaneous utility loss although long run preferences indicates that it is welfare improving. In the same lingo one could thus say that the fathers become addicted to work which lead fathers to under-invest in paternal leave.⁶

The paper puts a different perspective on targeted fathers' quotas as a policy instrument to reach more equal parenting for mothers and fathers. Quotas may simply prevent parents from deviating from their long run plan of shared care taking. However, the government's choice of quotas may not coincide with the parents optimal sharing of childcare, which thus may induce a larger welfare loss than the parents, although not long run optimal, choice of sharing. As an alternative policy, the government could make available instruments for pre-commitment; for example, having parents committing to the employer on their return to work prior to the child's birth. Deviating from a pre-commitment may be costly (in terms of psychic or other costs), which may make parents stick to their original plan of parental leave.

The paper is organized as follows. Section 2 provides a background of the literature on hyperbolic preferences. Section 3 develops the model where, without loss of generality, the mother is assumed to be the sole decision maker when deciding on the division of parental leave between the parents. As the model is constructed so that we can ignore savings decisions, the model is very tractable in terms of simplicity and transparency. Section 4 introduces

⁵Perhaps this choice should, at least for real addicts, more accurately be seen as trading of prevention of instantaneous disutility for the future health risks.

⁶We leave, however, the formal treatment of this alternative setup unexplored, since such an exercise follows completely analogously from the study of a maternal dictator. A similar argument can be made for a setup of bargaining between the parents. If parents agree on the ex ante division of parental leave, both the father and the mother can improve their instantaneous utility by deviating from the plan by having the mother using more maternity leave, and the father using less paternity leave, than they both initially intended to.

heterogeneity in preferences as well as uncertainty, and investigates the welfare implications of regulations and self commitment devices. We show that instruments providing self-commitment devices always outperforms fathers' quotas. Section 5 concludes.

2 Related Literature

The driving mechanism in this paper is that of hyperbolic preferences. Intertemporal decisions are normally modelled with the discounted utility model (DU) introduced by Samuelson (1937). Empirical research on intertemporal choice has, however, documented various inadequacies of this model as a description of behavior (see Fredrick et al. 2002 for an overview of the anomalies of DU). Strotz (1956) was the first to relax the assumption of constant discounting in a theoretical model of intertemporal choice.⁷ Research on animal and human behavior has led psychologists to conclude that discount functions are approximately hyperbolic (Ainslie 1992). Hyperbolic preferences yields a bias towards the present, i.e. the present is given disproportional weights in intertemporal decisions. This leads to time-inconsistent behavior in the sense that the choice between at time T trading of x utility units for y units the next day, is not independent of when the choice is made.⁸ There is by now a vast literature on applications of hyperbolic preferences: Laibson (1997, 1998) and O'Donoghue and Rabin (1999b) explore the implications of hyperbolic discounting for consumption-saving behavior. They show that hyperbolic discounting leads a person to consume more than she would like (that is under-save) from a prior perspective. O'Donoghue and Rabin (1999a, 2001) show that hyperbolic discounting leads some persons to put off (procrastinate) an onerous activity more than she would like from a prior perspective.

Hyperbolic discounting has also been used as an explanation for addiction. Most of the earlier literature on addiction relied on habit formation, which captures the reinforcement aspect of addiction since present consumption

⁷Strotz (1956) also highlights that the DU assumption is a rather strong limitation to the general intertemporal utility function. In the view of this, one may ask why the burden of proof seems to lie heavily on economists departing from the DU assumption, but rather soft on those adopting the DU assumption.

⁸Specifically, if x is a utility gain and y is a utility loss, a bias towards the present makes the individual more likely to accept the trade the closer she comes to the time T .

affects tomorrow's taste. The main paper on this is Becker and Murphy (1988) in which addiction is formed and maintained by fully rational and forward looking individuals. Gruber and Koszegi (2001) and O'Donoghue and Rabin (2002) recognize however that this kind of addiction doesn't capture the time-inconsistent behavior embodied in addiction (Most addicts are after all not rational, they can at some point in time rationally desire to quit in the future, but fail to do that when future arrives). In their model, habit-formation thus yields preference for consumption of the addictive product, but the actual decision to consume those products is explained mostly by hyperbolic preferences. Our paper relies on these two ideas.

3 The Model

3.1 Assumptions

The model is deliberately stylized and simple. A representative biological mother (simply referred to as 'the mother' henceforth) is the sole decision maker. This assumption could be relaxed by letting either the father be the sole decision maker, or let there be within family bargaining. The only decision variable is how the parental leave should be split between the parents. There are only 3 periods. The first two periods take place when the child is very little and need parental care. The third period, on the other hand, is the rest of the child's life. In *period 1*, consisting of the first x months after birth, the mother will be on parental leave the full period due to strict biological or historical reasons. In *period 2*, consisting of y months, the division of parental leave between the mother and a second caretaker (simply referred to as 'the father' henceforth) is made exclusively at the mother's discretion. *Period 3* is the rest of the child's life in which no decisions are modelled. However, the mother has a prior notion of how the child's future wellbeing is affected by the preceding division of parental leave between the mother and the father. The explicit assumptions regarding the three periods are presented below.

3.1.1 Period 1 – The first x months

As mentioned above the mother is the sole caretaker for strict biological or historical reasons during the first x months, i.e. $m_1 = x$, where m_1 denotes the mother's number of months in parental leave during the period. x is a

strict exogenous variable. No decisions are made concerning the present but a plan for the future division of responsibility is traced out. Depending on whether there is a commitment tool at hand or not, the plan will hold in the future.

3.1.2 Period 2 – The next y months

During the second period, consisting of the exogenously given y months proceeding the first period, both parents can be potential care givers. The mother has positive instantaneous utility from being on parental leave. This should be interpreted in relation to the disutility from going back to work. One potential underlying explanation for this may be that the mother is 'addicted' to being on leave with the child. The addiction stems from the fact that the mother stayed at home during the first period.⁹

It would be a simple modelling exercise to endogenize the addiction formation; however, since we assume that the mother is home for exogenous biological reasons the first x months, such exercise would not add much dynamics to the model. For elaborated endogenization of addiction and habit formation featuring present-biased utility, see e.g. Gruber and Koszegi (2001) and O'Donoghue and Rabin (2002).

Let the mother's instantaneous utility, from staying home with the child, be given by $u_2(m_2)$ where m_2 is the number of months she stays home with the baby in the second period. Furthermore, $u_2(\cdot)$ is strictly concave and increasing, i.e. $u_2'(\cdot) > 0$ and $u_2''(\cdot) < 0$. $u_2(\cdot)$ should thus be interpreted as the net instantaneous utility surplus that the mother experiences when being on parental leave instead of working.¹⁰

⁹Note that the results of this model would materialize as long as the mother considers going back to work to be afflicted with an instantaneous loss of utility; provided of course that she is the decision maker. However, with the addiction story the results also generalize to a model where the work addicted father is the sole decision maker, or when there is bargaining between the spouses. The analogous result would also hold in any setup in which the mother gets positive instantaneous utility from being home with the child, while the father does not.

¹⁰Clearly, this model considers the utility values induced by time use rather than returns from consumption. Savings options need thus not to be modelled. However, the fact that men earn higher wages than women could, in a broad way, be accounted for in this set-up. For a given parental leave time, $x + y$, each time period the father is staying home as the care taker instead of the mother is associated with a monetary loss equal to the wage differential. In terms of the numeraire, this induces a utility loss for each unit the father stays home in the second period. Thus, the utility loss in period 2 of having the father

3.1.3 Period 3 – The rest of the child’s life

We assume that the mother has a prior notion that the child will benefit in its future life from having spent time, during the early period, with both its parents. Explicitly, we model this as the mother having a subjective optimal time division, of the first $x + y$ months. Deviations from this optimum result in expected subjective utility losses. Let the mothers prior time division be $m^* \equiv x + m_2^*$ (the residual optimal time spent with the father is thus $d^* = y - m_2^*$). We define the mother’s expected utility function – based on the mother’s prior of what is best for the child in its future life – over this third period as

$$u_3(m_2) = -L(m_2 - m_2^*). \quad (1)$$

$L(\cdot)$ is a positive convex loss-function with $L'(\cdot) > 0$ for $(m_2 - m_2^*) > 0$ and $L'(\cdot) < 0$ for $(m_2 - m_2^*) < 0$. The Inada conditions are $L'(0) = 0$, $L(0) = 0$ and $\lim_{m_2 \rightarrow y} L'(m_2 - m_2^*) = \infty$, i.e. when m_2 approaches y , so that the mother takes the full parental leave, the marginal expected future damage to the child will approach infinity.¹¹

3.2 The Mother’s Problem

Two features of the model simplify the calculations. First, the exogenous given division of parental leave in the first period makes the calculation of the decisions for the latter periods straightforward since history is exogenously given. Second, no actual decisions are made in the third period, even if the mother is accounting for the consequences of her earlier decisions on the third period wellbeing. Thus there is no third period decision which affects the earlier decisions. The only variable to decide upon is the second period division of the parental leave. This decision can be made in the first period or the second period. The decision made in the first period about the forthcoming division of parental leave will generally be followed only if there is a commitment technology available. Otherwise her second period decision, which generally differs from the first period’s decision, will be carried out.

staying at home (having the mother working), captured by $u'_2(\cdot) > 0$ and $u''_2(\cdot) < 0$, could also capture the gender wage differential, not accounting for the savings option.

¹¹This last condition guarantees the optimal choice of $m_2 < y$ and thus provide an interior solution.

3.2.1 Commitment

When we have a commitment device, the mother decides already in the first period on how the parental leave should be split between the parents. As the instantaneous utility in the first period, $u_1(x)$, is exogenously given, this term can be ignored when formalizing the mother's problem. The mother's maximization problem may be written as

$$\max_{m_2} U_1 \equiv \beta u_2(m_2) - \beta L(m_2 - m_2^*) \quad (2)$$

where $\beta < 1$ is the hyperbolic component attached to all future as in the standard (β, δ) -model first used by Phelps and Pollak (1968). The (β, δ) -model catches the qualitative features of hyperbolic preferences, where δ represents the DU component of the intertemporal choice, i.e. the traditional constant discount factor. The traditional discount factor is, without loss of generality, set to unity throughout our analysis. The FOC to (2) with respect to m_2 simply gives

$$u'_2(m_2^c) = L'(m_2^c - m_2^*) \quad (3)$$

which implicitly solves for the optimal m_2 with commitment. Since u'_2 is positive, L' also has to be positive and thus $m_2^c \geq m_2^*$. Thus, the mother overspends time with the baby compared to what she finds to be optimal for the child. The reason is that she also accounts for the direct utility she receives from spending time with her child.

3.2.2 No Commitment

In period 2, the problem facing the mother will instead be

$$\max_{m_2} U_2 \equiv u_2(m_2) - \beta L(m_2 - m_2^*) \quad (4)$$

The FOC gives

$$u'_2(m_2^{nc}) = \beta L'(m_2^{nc} - m_2^*) \quad (5)$$

which solves m_2^{nc} implicitly. This is similar to (3) except for the β -term. Comparison of (5) and (3) shows that:

$$m_2^{nc} > m_2^c \text{ as } \beta < 1$$

Normally, following Strotz (1956) and Pollak (1968), one distinguishes between two types - naifs and sophisticates. The naifs are unaware of that their

preferences are time-inconsistent while the sophisticates know this, which makes them take account of future decisions in their present decision. (Technically one solve the problem by backward induction for the sophisticates). In case of non-commitment, the solution usually differs for the two types. In our case, no decisions are taken in the third period. Therefore, the sophisticates' solution coincide with the naifs' given by (5).

Comparative statics of (5) with respect to β gives

$$\frac{dm_2^{nc}}{d\beta} = \frac{L'_+}{u''_2 - \beta L''_+} < 0$$

which means, loosely speaking, that higher bias towards the present (lower β) increases m_2^{nc} while it has no effect on m_2^c (see 3). When β approaches unity, the non-commitment solution will naturally approach the commitment solution. β introduces no distortion between the benefit, in period 2, and the loss, in period 3, when the mother is standing in period 1 and committing to a future path. The parameter β is attached to *all* future. However, when standing in period 2, β applies only to the perceived future disutility from spending (too much) time with the baby. When no prior commitment has been made the mother will thus, in the view of her period 1 self, overspend time with the baby in period 2. The problem becomes more severe the lower β is. When $\beta \rightarrow 0$ we are sure to approach the corner solution $m_2 \rightarrow y$, and the mother thus takes the whole parental leave.

The assumption of the mother as the sole decision maker can be relaxed if we assume that the father has the same kind of preferences, that is an instantaneous utility from working in period 2, and a qualitative similar prior about the child's future. The same rationale behind the mother's preferences justify the first assumption - the father is addicted to his work since he worked during the first period and there is a psychological cost of starting to take part of the parental leave. With these assumptions the same qualitative bias results if the father decides upon the division of parental leave, or if the decision making is modelled as a negotiation.

4 Policy Implications

To do welfare analysis, we make the usual assumption that the long run impartial self has $\beta = 1$ (see e.g. O'Donoghue and Rabin (1999a)). The time

consistent long run self thus correctly predicts and internalizes future preferences. In our case, the commitment maximization problem coincides with the long run maximization problem, because the decision in the first period only concerns future periods (which are discounted the same), since the first period utility is exogenously given. The commitment solution thus maximizes welfare whereas non commitment yields a sub optimal division. From a policy perspective, regulating the division of the parental leave between the parents by setting $m_2 = m_2^C$ is welfare improving. For time inconsistent mothers, regulation alters the division from the sub optimal non-commitment division to the optimal commitment division. Time consistent parents on the other hand would have chosen the same optimal commitment division anyway.

4.1 Heterogenous Mothers

In the case where individuals are heterogenous with respect to the instantaneous utility of childcare, $u_2(m_2)$, a regulated division can no longer reach the first best solution. The analogous result hold for heterogeneity in the loss function as well (or in m_2^*). But for simplicity we only provide the formal analysis for heterogeneity in $u_2(m_2)$. Assume that we have two types of mothers A and B , with instantaneous second period utilities $u_2^j = \nu^j(m_2^j)$, $j = A, B$, that appear in relative fractions ϵ_A and $\epsilon_B = 1 - \epsilon_A$. The government's utilitarian optimization problem, when choosing a general regulation level m_2 becomes:

$$\max_{m_2} \Omega^R \equiv \beta [\epsilon_A \nu^A(m_2) + \epsilon_B \nu^B(m_2)] - \beta L(m_2 - m_2^*) \quad (6)$$

An alternative policy tool is to provide a self-commitment devise that allows the parents in the first period to commit to a certain self chosen second period division of the parental leave. If such a devise is at hand, each type commit to the optimal division given by their commitment solution, and we reach the first best solution. The utilitarian social welfare function under self commitment becomes:

$$\begin{aligned} \max_{m_2^A, m_2^B} \Omega^{SC} &\equiv \beta [\epsilon_A \nu^A(m_2^A) + \epsilon_B \nu^B(m_2^B)] \\ &\quad - \beta [\epsilon_A L(m_2^A - m_2^*) + \epsilon_B L(m_2^B - m_2^*)] \end{aligned} \quad (7)$$

By comparing (6) and (7) we get

$$\left(\max_{m_2^A, m_2^B} \Omega^{SC} \right) \geq \left(\max_{m_2} \Omega^R \right) \text{ with equality only when } \nu^A(\cdot) = \nu^B(\cdot) \quad (8)$$

Provision of a self-commitment device naturally outperforms regulation, since it allows different division of parental leave for different types.

4.2 Uncertainty

An important real world feature is that preferences might change over time. If a mother has pre-committed to a future maternal leave schedule, she may ex post find it optimal to deviate from the staked out path because of changed preferences and not because of time inconsistency. Ideally, we would like to separate the ex post deviation tendencies and allow for deviations due to altered preferences but not for time inconsistency induced deviations. It is, however, unrealistic to assume that the government is able to separate the two types of deviations. We must therefore depart from the first best solution when there is future preference uncertainty involved. As we will show below, this does not shift the preferred policy towards more regulation; instead the soft paternalism approach, in which the government's role is limited to providing the individuals with commitment tools, is still the more attractive strategy.

Assume that there are two different possible realizations of second period instantaneous utilities $\nu_p^j(m_2^j)$ and $\nu_q^j(m_2^j)$, $j = A, B$, occurring with probabilities p^j and $q^j = 1 - p^j$, respectively. The government's optimization problem, when choosing a general regulation level m_2 becomes:

$$\max_{m_2} \Omega^R \equiv \beta [\epsilon_A (p^A \nu_p^A + q^A \nu_q^A) + \epsilon_B (p^B \nu_p^B + q^B \nu_q^B)] - \beta L(m_2 - m_2^*) \quad (9)$$

When the government only provides the a self commitment devise, each type maximizes:

$$\max_{m_2^j} \beta [p^j \nu_p^j + q^j \nu_q^j] - \beta L(m_2^j - m_2^*). \quad (10)$$

The utilitarian welfare under self-commitment now becomes:

$$\begin{aligned} \max_{m_2^A, m_2^B} \Omega^{SC} &\equiv \beta [\epsilon_A (p^A \nu_p^A + q^A \nu_q^A) + \epsilon_B (p^B \nu_p^B + q^B \nu_q^B)] \\ &\quad - \epsilon_A \beta L(m_2^A - m_2^*) - \epsilon_B \beta L(m_2^B - m_2^*) \end{aligned} \quad (11)$$

By comparing (9) and (11), (8) holds once again.

Uncertainty in itself thus gives no scope for more hard paternalism, i.e. strict regulations instead of mere instruments for self-commitment. However, in the above analysis we have assumed that the individuals have correct anticipation of their expected future preferences. A more hard-core paternalistic approach could of course be legitimized had we assumed that the government knew the individuals' future utilities with greater certainty than the individuals do themselves. But such assumptions are indeed highly unorthodox in the field of mainstream economics. Finally we may note that all of the above leaves out externalities, imposed on society as a whole, from the individuals' choices of parental leave. As always, externalities may, at least in theory, constitute the *raison d'être* of less *laissez-faire*.

5 Conclusions

Family policy in general and parental leave in particular have indeed been hot topics in the last three decades' European policy debates. Considering the massive increase in female labor supply this comes as no surprise. That there is a scope for more equal sharing of the parental duties could be argued both based on equality considerations and with reference to the childrens' future well-being. This paper, however, has left all such issues aside and focuses on a particular mechanism that may make mothers take too long parental leave from their own long-run perspective.

The model presented here is a very stylized and simple story of a mother's choice of maternal leave. We assume that mothers, for exogenous biological reasons, stay home with their child during the very first period after birth. This very early mother-child relation founds maternal addiction to parental leave, resulting in an instantaneous utility loss of going back to work. For mothers with present biased discounting this could induce over-investment in maternal leave, from the *ex ante* self's perspective. The assumption of parental leave addicted, and dictative, mothers is not the only one that generates this key result. The analogous logic applies had the work-addicted fathers made the decisions instead. And in case the whole household gets instantaneous disutility, due to income loss, when switching from maternal to paternal leave, the logic applies irrespective of who makes the parental leave decision.

Furthermore, in the policy section we provided rationale for using self

commitment instead of regulation as a means to maximize long run welfare. Since self commitment utilizes the individuals' own preferences, heterogeneous mothers may choose their own optimal level of commitment. Provision of a self-commitment device thus naturally outperformed regulation, since it allowed different division of parental leave for different mothers.

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