Untying the Knot: How Child Support and Alimony Affect Couples’ Decisions and Welfare

Hanno Foerster
Boston College

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Motivation

- Over 25% of marriages are divorced in the first 15 years (in the US, UK, France, Germany, Denmark, ...)

- Marital breakdown $\rightarrow$ severe financial consequences, especially for couples with very unequal incomes

- Post-marital maintenance: regular mandated transfers between ex-spouses typically: alimony, child support
Research Question

- Active political debates and reforms in the last decade (e.g. several U.S. states, Germany, France, UK)

- Trade-off
  - pro 1: insurance for the lower earner/ex-spouse taking children
  - pro 2: efficient household specialization (but makes insurance more necessary)
  - con: distortion of divorcees’ labor supply incentives
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How should maintenance payments be designed?
What I Do

- Dynamic model of married/divorced couples’ decisions
  - Divorce: non-cooperation, linked by maintenance
  - Marriage: limited commitment, maintenance payments → outside options → divorce rates, hh bargaining, hh specialization

- Estimation: use rich Danish register data + time use data
  (maintenance payments, marital histories, children, child custody, work hours, wages, housework hours...)

- Use estimated model to
  1. simulate counterfactual policies
  2. find welfare maximizing maintenance policy
  3. compare to first best scenario
**Child support**: payed from non-custodial to custodial parent

\[ g(\tilde{I}, n) \]

- \( \tilde{I} \): non-custodial parent’s labor income
- \( n \): no. of children (younger than 18 years)
- \( g \): increasing in both arguments

**Alimony**: payed from higher earner to lower earner (for up to 10 years)

\[ \tau \cdot (I_h - I_\ell) \]

- \( I_h \): higher earner’s labor income
- \( I_\ell \): lower earner’s labor income

- Payments respond to income changes
- Register data: avg. mandated payments \( \approx \) avg. observed payments
- Compliance with these payments is much higher than, e.g., in the US
Model Overview I

- Life cycle model, two interacting decision makers $f$ and $m$
- Married in $t = 1$, may endogenously divorce in $1 < t < T$

Choices: consumption $c_{ft}, c_{mt}$, work hours $h_{ft}, h_{mt}$, assets $A_t, A_{ft}, A_{mt}$, divorce $D_t$, leisure $l_{ft}, l_{mt}$

Married $f, m$

- Cooperative decisions under limited commitment

"love shocks" $\xi_{ft}, \xi_{mt}$

Equal division of assets, $P(f = custodial) = p_{custf}$

Divorced $f$

Dynamic game, linked by maintenance

Divorced $m$
Model Overview II

- Children, \( n \), are born exogenously,
- benefit from home-good \( Q_t \), produced from time inputs \( q_{ft}, q_{mt} \)
- consume share of what parents consume (equivalence scales)
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- Learning by doing accumulation of human capital \( K_{st}, s \in \{f, m\} \)
- \( \mathbb{E}_t[w_{st+1}] \) is increasing in work hours \( h_{st} \)
  - Individual incentives to self-insure by working during marriage
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Non-cooperation in divorce: Stackelberg structure
Limited commitment model: bargaining weights shift over time
Endogenous divorce if re-bargaining cannot restore marriage
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- Estimation: simulated method of moments
  \( \rightarrow \) target empirical patterns related to labor supply, housework, divorce and consumption
Weekly work and housework hours

% ever divorced

Work hours around divorce

Relative consumpt. around divorce
Results - Summary

- Simulate changes in alimony/child support, for $N = 20,000$ couples
- **Alimony:** $\tau \cdot (w_m h_m - w_f h_f)$
  if the ex-wife is the lower earner
- **Child support:** $n^{bn} \cdot (b_0 + b_1 w_m h_m + b_2 (w_m h_m - w_f h_f))$
  if the ex-wife is the custodial parent
Result 1: Increasing alimony ($\tau$) or the dependence of child support on the income gap ($b_2$) fails to provide consumption insurance.

- Reason: severe labor supply disincentives for divorced women and men
- Mechanism: incentives to reduce work hours for strategic considerations
Welfare Maximizing Policy

- **Result 2:** Under utilitarian welfare, the welfare maximizing policy involves
  - Increasing the lump sum component of child support
  - Increasing the slope of child support in the payer’s income
  - Making child support convex in the number of children (rather than concave)
  - Reducing alimony payments

\[
\begin{align*}
(b_0^*, b_1^*, b_2^*, b_n^*, \tau^*) &= \arg \max_{b, \tau} \mathbb{E}[V_{f0}^{mar}] + \mathbb{E}[V_{m0}^{mar}] \\
(\tilde{b}_0, \tilde{b}_1, \tilde{b}_n, \tilde{\tau}) &= (1.44 \tilde{b}_0, 1.18 \tilde{b}_1, 0.002, 1.34 \tilde{b}_n, 0.8 \tilde{\tau})
\end{align*}
\]

where $\tilde{b}_0, \tilde{b}_1, \tilde{b}_n, \tilde{\tau}$ denote the status quo policy parameters
Comparison to First Best

- **Result 3**: Comparison to a hypothetical first best world without frictions

- *Interpretation*: allow couples to make binding commitments/ write perfect dynamic prenups

→ First best: pareto improvement over status quo
→ Welfare maximizing policy: women gain, men lose
Conclusion

- First to study child support/ alimony in light of policy trade-off:
  - consumption insurance and hh specialization vs. labor supply disincentives

- Develop dynamic model, that incorporates this trade-off and accounts for strategic interactions in ex-spouses’ labor supply choices

- Findings based on the estimated model:
  - Alimony backfires in terms of providing consumption insurance
  - Welfare maximizing policy: involves increasing child support/ reducing alimony
  - Comparison to first best: Pareto gains are feasible, but real world policies fail to implement them