

EC555: Family Macroeconomics

Matthias Doepke (LSE)



Models of Family Decisionmaking

Do household members reach efficient outcomes?

If not, what frictions lead to inefficiency?

How does inefficient bargaining matter for decisions and outcomes?

The Unitary Model of the Family

Unitary model: preferences defined at level of family, no conflict of interest between members.

Example:

$$\max \{U(C, I_f, I_m)\}$$

s.t.

$$C = (1 - I_f)w_f + (1 - I_m)w_m + y_f + y_m.$$

Most of Gary Becker's work on the family uses the unitary model.

"Rotten Kid Theorem:" under some conditions, family acts in a unitary way even if only one member is altruistic and others are selfish.

Intuitively, each member benefits from maximizing total family welfare, and the altruist then redistributes utility.

But underlying assumptions (transferable utility) usually not satisfied.

Applications of the Unitary Model

Unitary model continues to be useful for analyzing a lot of family decision making, such as:

- Household vs. market production; “the family as a firm.”
- Family insurance and family labor supply.
- Role of quantity-quality tradeoff and opportunity cost of women’s time for explaining fertility choices.

Rejections of the Unitary Model

Numerous studies show that who owns money in a family matters for outcomes.

For example, redirecting transfers from men to women changes expenditures on women, men, and children (e.g., [Lundberg, Pollak, and Wales \(JHR 1997\)](#); [Attanasio and Lechene \(RED 2002\)](#)).

But unitary model satisfies **income pooling**: there is a joint budget constraint and only total resources matter!

Hence, unitary model cannot account for these observations.

Beyond the Unitary Model

Non-unitary models start with separate preferences for each family member, e.g.:

$U_f(C, c_f, l_f)$, $U_m(C, c_m, l_m)$, where C is public consumption, c_g is private consumption, and l_g is leisure.

Household also faces a set of constraints $F(C, c_f, c_m, l_f, l_m) = 0$.

What allocation will be chosen?

- **Use non-cooperative game theory:** Nash equilibrium (or dynamic extension thereof).
- **Or use cooperative game theory:** Players choose (constrained-) efficient outcome through some bargaining process.
- But in the cooperative case, which of many possible bargaining processes will be used? And are there constraints that keep full efficiency out of reach?

The Collective Model

Chiappori (Econometrica 1988, JPE 1992): Analyze household decisions by **ONLY** imposing efficient outcomes, without positing any particular bargaining process.

Can anything be said?

It turns out the answer is yes!

The Collective Model

Any efficient outcome can be expressed as the solution to the Pareto problem:

$$\max \{ \mu U_f(C, c_f, l_f) + (1 - \mu) U_m(C, c_m, l_m) \}$$

subject to a joint set of constraints such as:

$$C + c_f + c_m = (1 - l_f)w_f + (1 - l_m)w_m + y_f + y_m.$$

If μ is a constant, this is just a more elaborate version of the unitary model; income pooling still applies.

But if μ depends on additional variables z , such as the spouses' relative income, relative age, or bargaining ability, can go beyond the unitary model.

The collective approach examines the implications of the welfare weights $\mu(z)$ depending on **distribution factors** z , without making any specific assumptions on the form of $\mu(z)$ (which an explicit bargaining model would require).

The Collective Model

Write the optimal demand function for some good x_i (public or private) as:

$$x_i = D_i(p, y, \mu(z)),$$

where p is the vector of prices (including wages as the price of leisure) and y is the total unearned income $y_f + y_m$.

The derivative of x_i with respect to a distribution factor z_n (an element of the vector of distribution factors z) is:

$$\frac{\partial x_i}{\partial z_n} = \frac{\partial D_i(p, y, \mu(z))}{\partial \mu} \frac{\partial \mu(z)}{\partial z_n}.$$

The Collective Model

Now consider the ratio of the impact of a distribution factor z_n on two different goods i and j :

$$\frac{\frac{\partial x_i}{\partial z_n}}{\frac{\partial x_j}{\partial z_n}} = \frac{\frac{\partial D_i(p, y, \mu(z))}{\partial \mu} \frac{\partial \mu(z)}{\partial z_n}}{\frac{\partial D_j(p, y, \mu(z))}{\partial \mu} \frac{\partial \mu(z)}{\partial z_n}} = \frac{\frac{\partial D_i(p, y, \mu(z))}{\partial \mu}}{\frac{\partial D_j(p, y, \mu(z))}{\partial \mu}}.$$

We can see that the right-hand side does not depend on n —the ratio of impacts is the same for **any** distribution factor z_n .

Intuitively, this proportionality arises because distribution factors enter **only** through the scalar welfare weight μ . Distribution factors can move allocations along the single dimension of movements from allocations preferred more by the one to allocations preferred more by the other.

One can show that any allocation that satisfies these proportionality conditions can be rationalized by a collective model.

Tests of the Collective Model

Various authors have tested the proportionality conditions, often using relative income or wealth as the distribution factor.

In most cases, efficiency is not rejected (e.g., [Bobonis \(JPE 2009\)](#); [Attanasio and Lechene \(JPE 2014\)](#)).

Some researchers conclude on this basis that the collective model is true.

But are Household Decisions Really Efficient?

Of course not!

Just like PPP, no-arbitrage pricing, and many other concepts, efficiency is a knife-edge condition that will not be satisfied in reality.

That is why testing **IF** these conditions are satisfied is generally not a well posed question—asking how big the deviations from these conditions are is.

Also, tests are only about static inefficiency (no money left on the table in terms of the distribution of current consumption).

Dynamic efficiency is often the key issue; and the collective model with distribution factors in fact implies deviations from full efficiency.

Inefficient Household Decisions

Informal Evidence: Existence of inefficient actions from non-cooperation to domestic violence.

Examples of formal evidence:

- **Udry (JPE 1996):** Factor usage in African agricultural household depends on which spouse owns a given plot of land; about 6 percent of household lost.
- **Ashraf, Field, and Lee (AER 2014):** When given access to birth control that can be concealed from their husbands, women were 27 percent less likely to give birth.
- **Choukhmane, Goodman, and O'Dea (AER 2025):** US couples do not allocate retirement savings to maximize employer match; inefficiency correlates with measures of commitment.

Dimensions of Inefficiency

For inefficient static decisions, non-cooperative game theory is the natural approach. When applying such models, probably useful to allow for heterogeneity in efficiency across families.

For dynamic decisions, clear-cut evidence for inefficiency.

Key issues:

- What are the underlying frictions: limited commitment, private information, or something else?
- If there is lack of commitment, exactly how much commitment is there?
- What tractable, empirically plausible models can we take to the data?

Dynamic Household Decisions

In macro, usually interested in decision-making over time.

Dynamic unitary models look just like standard macro model with single household utility function.

An efficient model with welfare weights fixed over time is also a unitary model (with a specific utility function).

Collective model has some content in dynamic setting where distribution factors can change, but does not take any stand on **how** welfare weights change.

To give content to dynamic family models (collective or other), characterizing and modeling how bargaining evolves is the central challenge.

Dynamic Household Decisions

Note: Full efficiency **requires** constant welfare weights over time:

$$\mu \left[\sum_{t=0}^T U_f(t, X) \right] + (1 - \mu) \left[\sum_{t=0}^T U_m(t, X) \right] = \sum_{t=0}^T [\mu U_f(t, X) + (1 - \mu) U_m(t, X)].$$

Evidence of changing bargaining weights is evidence against efficiency.

Benchmark models of failures of dynamic efficiency:

- Limited commitment.
- Private information.

These are also relevant for family decision making.

To see which models may be useful, need evidence on how bargaining in families actually evolves.

Evidence on Dynamic Efficiency

Mazzocco (REStud 2007): first formal test of intra-household commitment.

- Intertemporal collective model with individual preferences; household chooses consumption and savings.
- **Full commitment:** Pareto weight fixed at marriage; household Euler equations with constant weight.
- **Without commitment:** weight is renegotiated as outside options change, so variables that shift outside options enter the household Euler equations.
- Full-commitment Euler equations are nested in the no-commitment ones $\Rightarrow$ test whether the extra terms matter.

Data: US CEX, married couples. Result: full commitment strongly rejected.

Evidence on Dynamic Efficiency

Lise and Yamada (REStud 2019)

- Empirical study of dynamic commitment among married couples.
- Japanese Panel Survey of Consumers (JPSC).
- 1993 to 2013, four cohorts, 1,149 married households used for analysis.
- Consumption data broken down in purchases for wife, husband, children, and other purchases.
- Also time use data for work, leisure, house work, and child care.

Idea of the Paper

- Use wage and consumption data to measure spouses' welfare weights.
- Test full commitment: Are the weights constant over the course of a marriage?
- Explore mechanisms for lack of commitment: What explains changes in weights over time?

Summary Statistics

	Wife	Husband	Household
Expenditure per month (% of household total)	36,711 [63,951] (6.5%)	77,650 [64,321] (14.5%)	442,640 [275,174] (79.0%)
Time use, hours per week (share of own time)			
Market work (incl. commuting)	29.7h [21.7] (17.7%)	62.7h [14.7] (37.3%)	
Home production (incl. child care)	44.0h [25.3] (26.2%)	7.4h [9.1] (4.4%)	
Leisure (incl. sleep)	94.2h [20.1] (56.1%)	97.9h [15.6] (58.3%)	
Observables			
Age	36.5 [6.4]	38.9 [7.4]	
Education (years)	13.2 [1.6]	13.5 [2.3]	
Wage	925 [1,014]	1,676 [1,575]	
Children aged 0–6			0.62 [0.80]
Household size			4.24 [1.49]

JPSC 1993–2013; mean [standard deviation]. All monetary values in 2013 Japanese Yen. Sample: 1,149 households.

Distribution of Shares

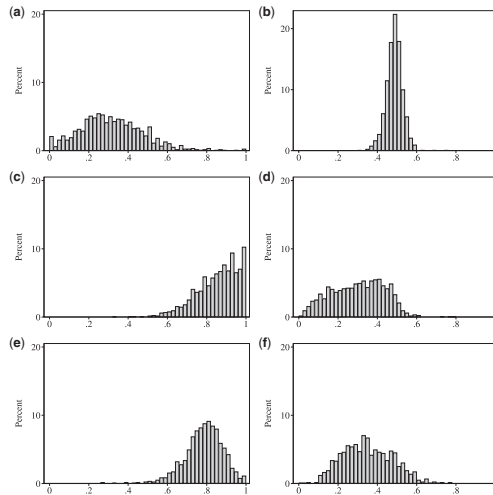


FIGURE 1

Distributions across households of consumption, hours and wage shares. (a) Private consumption $\frac{c_W}{c_W + c_H}$ (mean 0.32, std 0.16); (b) leisure $\frac{l_W}{l_W + l_H}$ (mean 0.49, std 0.04); (c) home hours $\frac{h_W}{h_W + h_H}$ (mean 0.85, std 0.11); (d) market hours $\frac{m_W}{m_W + m_H}$ (mean 0.30, std 0.13); (e) public expenditure $\frac{g}{c_W + c_H + g}$ (mean 0.78, std 0.10); (f) wage $\frac{w_W}{w_W + w_H}$ (mean 0.35, std 0.13).

Notes: Mean and standard deviation in parenthesis.

Correlation of Shares and Wages

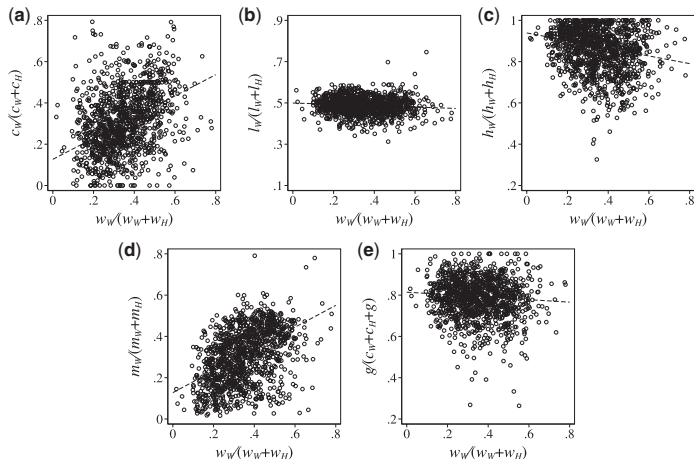


FIGURE 2

Allocation shares versus wage shares. (a) Private consumption (corr 0.32); (b) Leisure hours (corr -0.07); (c) Home hours (corr -0.19); (d) Market hours (corr 0.42); (e) Public expenditure (corr -0.11).

Notes: Correlation in parenthesis. The dashed line is the median regression line.

Model Used to Interpret Data

$$U_0 = \mathbb{E}_0 \sum_{t=0}^T \left[\delta_f^t \mu_t u_t^f(c_{ft}, l_{ft}, q_t) + \delta_m^t (1 - \mu_t) u_t^m(c_{mt}, l_{mt}, q_t) \right],$$

subject to a constant returns to scale home production function:

$$q_t = q(g_t, h_{ft}, h_{mt});$$

the per-period time constraint (leisure, home production, market work):

$$l_{jt} + h_{jt} + n_{jt} = 1, \quad j \in \{f, m\};$$

the period-by-period budget constraint:

$$c_{ft} + c_{mt} + g_t + w_{ft}(l_{ft} + h_{ft}) + w_{mt}(l_{mt} + h_{mt}) = w_{ft} + w_{mt} + (1 + r_t)a_t - a_{t+1} \equiv y_t.$$

Measurement of Welfare Weights

- Choose functional forms, derive optimality conditions.
- GMM estimation of optimality conditions.
- Preferences allowed to depend on household characteristics: age, education, number of children.
- Home productivity depends on number of children.
- Wages depend on individual fixed effect, potential experience, and transitory and persistent shocks.
- Initial Pareto weight depends (primarily) on initial wage and predicted difference in wage growth.
- Evolving Pareto weights depend on accumulated wage shocks.

Initial Variation in and Revisions to Pareto Weight

	Meaning	I Baseline	II Split shock	III Memoryless?	IV Adv. info?
μ (at sample mean)	Wife's Pareto weight at sample mean	0.438 (0.008)	0.438 (0.008)	0.435 (0.011)	0.437 (0.011)
$\omega_{f,0} - \omega_{m,0}$	Predicted log wage gap (wife – husband) at marriage	0.404 (0.027)	0.407 (0.023)	0.419 (0.044)	0.414 (0.043)
$\Delta\omega_{f,10} - \Delta\omega_{m,10}$	Gap in predicted wage growth over first 10 years of marriage	0.306 (0.174)	0.285 (0.148)	0.328 (0.256)	0.286 (0.242)
ν_0	Predicted log household full income at marriage	0.028 (0.013)	0.027 (0.012)	0.028 (0.020)	0.028 (0.020)
z_{1t}	Relative wage shock: accumulated wage surprise since marriage, wife – husband	0.338 (0.015)			
Δz_{1t}	This year's innovation in relative wage shock		0.350 (0.012)	0.362 (0.025)	0.372 (0.033)
$z_{1,t-1}$	Relative wage shock accumulated up to last year		0.347 (0.016)	0.359 (0.030)	0.351 (0.039)
$z_{1,t-2}$	Shock accumulated up to two years ago (memorylessness test)			0.001 (0.022)	
$\Delta z_{1,t+1}$	Next year's innovation (advance-information test)				0.023 (0.022)

Weight on wife: $\mu_t = \exp(\mu_0 z_0 + \mu_1 z_{1t}) / [1 + \exp(\mu_0 z_0 + \mu_1 z_{1t})]$. Block-bootstrap standard errors in parentheses. Source: Lise and Yamada (REStud 2019), Table 2.

Revisions to Pareto Weight: Mechanisms

	Meaning	V Shock size	VI Divorce	VII New child	VIII Wallet	IX Industry
z_{1t}	Relative wage shock: accumulated wage surprise since marriage, wife – husband		0.328 (0.016)	0.342 (0.016)	0.374 (0.021)	0.439 (0.031)
$z_{1t} \times 1\{z_{1t} < q_1\}$	1st quintile: wife's relative wage >22.4% below forecast	0.368 (0.026)				
$z_{1t} \times 1\{q_1 \leq z_{1t} < q_2\}$	2nd quintile: 5.7–22.4% below forecast	0.503 (0.108)				
$z_{1t} \times 1\{q_2 \leq z_{1t} < q_3\}$	3rd quintile (small shocks): 5.7% below to 6.5% above	0.057 (0.309)				
$z_{1t} \times 1\{q_3 \leq z_{1t} < q_4\}$	4th quintile: 6.5–22.6% above forecast	0.187 (0.103)				
$z_{1t} \times 1\{q_4 \leq z_{1t}\}$	5th quintile: >22.6% above forecast	0.290 (0.032)				
$z_{1t} \times \text{divorce}$	Couple divorces next period (proxy for small marital surplus)		0.340 (0.137)			
$z_{1t} \times \text{new child}$	New child born this period (proxy for larger surplus)			–0.051 (0.055)		
$z_{1t} \times \text{wallet sharing}$	Both deposit wages in common account (less private information)				–0.070 (0.030)	
$z_{1t} \times 1\{\text{ind}_f \neq \text{ind}_m\}$	Spouses work in different industries					–0.063 (0.037)

Summary

- Clear evidence against full efficiency; bargaining power evolves over time.
- Changes in relative wages after marriage almost as important as relative wages at marriage.
- Evolving bargaining power has substantial impact on consumption allocation and labor supply.
- Support for both limited commitment and private information mechanisms.

Explicit Models of Evolving Bargaining Weights

Consider different setups in shared physical environment.

Wife and husband, $j \in \{f, m\}$, infinite horizon, discount factor β .

Spouse j has wage w_{jt} ; couple choose consumption c_{jt} and leisure $l_{jt} \in [0, 1]$.

While married, both enjoy **match quality** θ_t . Flow utility of spouse j :

$$u(c_{jt}, l_{jt}) + \theta_t.$$

Budget constraint (no savings, no human capital, no public goods):

$$c_{ft} + c_{mt} = w_{ft}(1 - l_{ft}) + w_{mt}(1 - l_{mt}).$$

Exogenous state $s_t = (w_{ft}, w_{mt}, \theta_t)$ follows a Markov process; s^t is the history up to t .

Outside Options

If there is limited commitment, **outside options** matter.

We consider divorce as the outside option.

Divorce is permanent, there is no remarriage, and each lives on their own wage.

Outside-option utility:

$$\bar{V}_j(w_{jt}) = \max_{c,l} \left\{ u(c, l) + \beta \mathbb{E}[\bar{V}_j(w_{j,t+1}) | w_{jt}] \right\} \quad \text{s.t. } c = w_{jt}(1 - l).$$

Notation used below: $(c^*, l^*)(\mu, s)$ solves $\max \mu u(c_f, l_f) + (1 - \mu) u(c_m, l_m)$ s.t. the budget constraint in state s , giving utilities $u_j^*(\mu, s)$.

Model 1: Full Commitment

At marriage, spouses commit to a fully state-contingent plan:

$$\max_{\{c_{jt}, l_{jt}\}} \mu_0 \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t [u(c_{ft}, l_{ft}) + \theta_t] + (1 - \mu_0) \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t [u(c_{mt}, l_{mt}) + \theta_t]$$

subject to the budget constraint for all s^t , and participation **at $t = 0$ only** (no divorce later):

$$\mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t [u(c_{jt}, l_{jt}) + \theta_t] \geq \bar{V}_j(w_{j0}), \quad j \in \{f, m\}.$$

Solution: $\mu_t = \mu_0$ for all t , allocation $(c^*, l^*)(\mu_0, s_t)$, and **full insurance** between spouses:

$$\frac{u_c(c_{mt}, l_{mt})}{u_c(c_{ft}, l_{ft})} = \frac{\mu_0}{1 - \mu_0} \quad \text{for all } t.$$

μ_0 set at marriage (bargaining, marriage market).

Model 2: Nash Bargaining Every Period

No commitment beyond the current period: each period, spouses bargain over the current allocation, with divorce as the threat point.

Let $V_j(s)$ be j 's value of being married in state s . Surplus from marriage:

$$S_j = u(c_j, l_j) + \theta + \beta \mathbb{E}[V_j(s') | s] - \bar{V}_j(w_j).$$

Allocation solves:

$$\max_{c_f, c_m, l_f, l_m} S_f^\gamma S_m^{1-\gamma} \quad \text{s.t. budget constraint, } S_f, S_m \geq 0.$$

If no feasible allocation gives $S_f, S_m \geq 0$: divorce, $V_j(s) = \bar{V}_j(w_j)$. Otherwise:

$$V_j(s) = u(c_j(s), l_j(s)) + \theta + \beta \mathbb{E}[V_j(s') | s].$$

Model 2: Nash Bargaining Every Period

First-order conditions are those of the static weighted problem with:

$$\frac{\mu^{NB}(s)}{1 - \mu^{NB}(s)} = \frac{\gamma/S_f(s)}{(1 - \gamma)/S_m(s)}.$$

- Weight depends only on the **current state**: no history dependence.
- Better outside option for the wife (e.g., higher w_f) $\Rightarrow$ higher μ_t .
- Weight responds to every shock: continuous renegotiation.
- Statically efficient, but dynamically inefficient: spouses would like to commit.
- Variant: threat point is non-cooperative marriage, not divorce (“separate spheres”).

Manser and Brown (IER 1980); McElroy and Horney (IER 1981); Lundberg and Pollak (JPE 1993).

Model 3: Constrained-Efficient Commitment (“Limited Commitment”)

Spouses commit to a plan, but either one can walk away (unilateral divorce).

Same objective as in Model 1, plus **participation constraints** in every period and state:

$$\mathbb{E}_t \sum_{\tau=t}^{\infty} \beta^{\tau-t} [u(c_{j\tau}, l_{j\tau}) + \theta_{\tau}] \geq \bar{V}_j(w_{jt}) \quad \text{for all } t, s^t, j \in \{f, m\}.$$

Constrained-efficient: the best allocation subject to divorce threat.

Recursive formulation (Marcet and Marimon): attach multipliers $\lambda_{jt} \geq 0$ to the participation constraints. Spouse j 's cumulative weight evolves as

$$M_{jt} = M_{j,t-1} + \lambda_{jt}.$$

Relative weight $\mu_t = M_{ft}/(M_{ft} + M_{mt})$ becomes a state variable that changes only when a constraint binds.

Model 3: Constrained-Efficient Commitment

Value of marriage for spouse j when the current weight is μ :

$$V_j(\mu, s) = u_j^*(\mu, s) + \theta + \beta \mathbb{E}[V_j(g(\mu, s'), s') \mid s].$$

Bounds: $\underline{\mu}(s)$ solves $V_f(\underline{\mu}, s) = \bar{V}_f(w_f)$; $\bar{\mu}(s)$ solves $V_m(\bar{\mu}, s) = \bar{V}_m(w_m)$.

Updating rule:

$$\mu_t = g(\mu_{t-1}, s_t) = \begin{cases} \underline{\mu}(s_t) & \text{if } \mu_{t-1} < \underline{\mu}(s_t) \quad (\text{wife's constraint binds}) \\ \mu_{t-1} & \text{if } \mu_{t-1} \in [\underline{\mu}(s_t), \bar{\mu}(s_t)] \\ \bar{\mu}(s_t) & \text{if } \mu_{t-1} > \bar{\mu}(s_t) \quad (\text{husband's constraint binds}) \end{cases}$$

If $\underline{\mu}(s_t) > \bar{\mu}(s_t)$, no weight makes both want to stay $\Rightarrow$ divorce.

The weight moves by the minimum amount needed to keep the spouse in the marriage.

Kocherlakota (REStud 1996); Ligon, Thomas, and Worrall (REStud 2002); Marcet and Marimon (Econometrica 2019); Mazzocco (REStud 2007); Voena (AER 2015).

Model 3: Constrained-Efficient Commitment

- Nests Model 1 (participation constraints never bind) and moves toward Model 2 as marital surplus shrinks.
- **History dependence:** μ_{t-1} is a state variable. But **memoryless** given μ_{t-1} (Kocherlakota; Ligon, Thomas, and Worrall).
- Weight responds to large shocks, not to small ones: partial insurance.
- Larger response when surplus is small, e.g., in the period before divorce.
- **Voena (AER 2015):** with savings, divorce laws (unilateral divorce, division of property) shift outside options $\bar{V}_j$, and hence bargaining weights, savings, and labor supply of married couples.

Model 4: Private Information

Add an income draw y_t for the wife, i.i.d. with probabilities $\pi(y)$, **observed only by her**. Wages and θ_t remain public; abstract from divorce.

The household cannot condition on y_t directly, only on the wife's report $\hat{y}_t$. If she reports $\hat{y} < y$, she keeps $y - \hat{y}$ for private consumption (hidden income).

Mechanism design: by the revelation principle, choose allocations as functions of reports, subject to truth-telling constraints.

Insurance vs. incentives: full insurance would transfer resources to the wife when she reports low income, but then she would always report low income.

Thomas and Worrall (JET 1990); Doepke and Tertilt (Handbook of Macroeconomics 2016); Bellue, Doepke, and Tertilt (WP 2026).

Model 4: Private Information

State: **promised utility** v to the wife, and s . $P(v, s)$ is the husband's highest value given v :

$$P(v, s) = \max_{c_j(y), l_j(y), v'(y, s')} \sum_y \pi(y) \left[u(c_m(y), l_m(y)) + \theta + \beta \mathbb{E}[P(v'(y, s'), s') | s] \right]$$

subject to:

$$c_f(y) + c_m(y) = y + w_f(1 - l_f(y)) + w_m(1 - l_m(y)) \quad (\text{budget})$$

$$\sum_y \pi(y) [u(c_f(y), l_f(y)) + \theta + \beta \mathbb{E}[v'(y, s') | s]] = v \quad (\text{promise keeping})$$

$$u(c_f(y), l_f(y)) + \beta \mathbb{E}[v'(y, s') | s] \geq u(c_f(\hat{y}) + y - \hat{y}, l_f(\hat{y})) + \beta \mathbb{E}[v'(\hat{y}, s') | s] \quad \forall \hat{y} < y$$

Last line: **truth-telling**. Implied Pareto weight from the slope of the frontier:

$$\frac{\mu_t}{1 - \mu_t} = - \frac{\partial P(v_t, s_t)}{\partial v}.$$

Model 4: Private Information

- Insurance would take resources from the wife when her income is high. To induce truthful reporting, high reports are rewarded with higher promised utility.
- Weight moves with every shock and depends on the whole history of reports, even without any outside option.
- Responsiveness depends on the severity of the information friction: better observability (e.g., a joint bank account) $\Rightarrow$ less responsive weight.
- Static allocations can be distorted too, e.g., domestic labor as an incentive device (Walther (REHO 2017)).

Comparing the Models

Model	What moves μ_t ?	History dependence	Insurance	Lise and Yamada evidence
1. Full commitment	Nothing	None	Full	Weight responds to news
2. Nash bargaining	Current outside options	None: $\mu_t = \mu^{NB}(s_t)$	Little	Small shocks should matter too
3. Limited commitment	Binding participation constraints	Through μ_{t-1}	Partial	Large vs. small shocks, before divorce, memoryless
4. Private information	Incentives for truthful reporting	Through promised utility v	Partial	Wallet sharing

Testing for the Degree of Commitment

Theloudis, Velilla, Chiappori, Giménez-Nadal, and Molina (EJ 2025)

Chiappori, Theloudis, Velilla, Giménez-Nadal, and Molina (WP 2026)

Life-cycle model with savings and labor supply with full (FC), no (NC), or limited commitment (LC). Key insight: regimes differ in which news enters the Pareto weight:

$$\text{FC: } \mu_{jt} = \mu_j(\Theta_0)$$

$$\text{NC: } \mu_{jt} = \mu_j(\Theta_0, w_{ft}, w_{mt}, Z_t, a_t)$$

$$\text{LC: } \mu_{jt} = \mu_j(w_{ft}, w_{mt}, Z_t, a_t, \mu_{j,t-1}) = \mu_j(\Theta_0, \text{current and past news})$$

Current news rejects FC (Mazzocco; Lise and Yamada); **past news** separates LC from NC.

Approach

Labor supply first-order condition: hours growth $\Delta \log h_{jt}$ depends on substitution, income, and tax effects, plus a **bargaining effect** $\Delta \log \mu_{jt}$.

Use **wage shocks** ω as shifters of the Pareto weight: conditional on income, wealth, and partner's earnings, partner's wage affects j 's hours only through bargaining.

Regress $\Delta \log h_{jt}$ on own and partner's wage shocks at t , $t - 1$, $t - 2$, initial distribution factors (age gap at marriage), and controls. Predicted signs:

Coefficient on	FC	NC	LC
partner's current shock $\omega_{-j,t}$	0	+	+
own past shocks $\omega_{j,t-\tau}$, $\tau \geq 1$	0	0	-
partner's past shocks $\omega_{-j,t-\tau}$, $\tau \geq 1$	0	0	+

Results for the US (PSID 1999–2019)

Wage shock	LC					
	sign	Men	Women	Men	Women	
Partner's, t	+	52.8 (26.1)	−2.6 (6.2)	39.4 (31.0)	−11.4 (18.7)	
Own, $t - 1$	−	−13.9 (5.3)	−7.3 (3.4)	−11.0 (10.1)	−5.0 (10.3)	
Partner's, $t - 1$	+	41.0 (20.4)	6.0 (7.1)	29.5 (34.6)	−6.9 (17.1)	
Own, $t - 2$	−			−32.7 (16.7)	−9.6 (6.8)	
Partner's, $t - 2$	+			2.4 (28.8)	24.7 (15.2)	
p-value, H_0 : FC		0.000	0.000	0.001	0.000	
p-value, H_0 : NC		0.001	0.000	0.001	0.000	

Red: significant at 5% level. Dependent variable: $\Delta \log h_{jt}$; dual-earner married couples. Biennial data, so $t - 1$ ($t - 2$) is two (four) years ago. Source: Theloudis et al. (EJ 2025), Table 1.

Results for the US: Interpretation

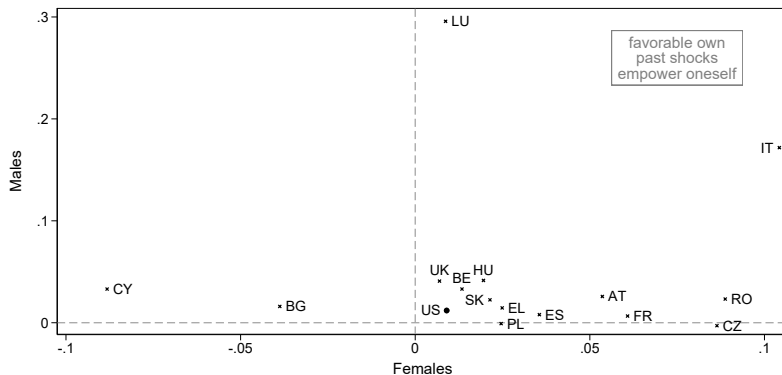
- Full and no commitment rejected for both spouses ($p \leq 0.001$).
- Past shocks matter, mostly (but not always) with the signs limited commitment predicts.
- Not explained by income or wealth effects (controlled for, and these would have the same sign for both spouses).
- Magnitudes: past shocks shift hours with elasticities of about 0.01–0.05 (pure bargaining effect).
- Large heterogeneity: many couples show no bargaining effects (as under full commitment), others strong limited-commitment effects.

Evidence from Europe (EU-SILC 2005–2019, 15 Countries)

- Also exploit sign restrictions, which gives a test with power against limited commitment (e.g., if good own shocks raised own future hours, LC would be rejected).
- Full and no commitment rejected in 11 of 15 countries (at least at 10%); not in Bulgaria, Cyprus, Slovakia, and the UK (little statistical power).
- Limited commitment not rejected anywhere, except marginally in Greece ($p = 0.087$).
- Pareto weight elasticity w.r.t. own past wage mostly 0–0.10: a 10% wage shock shifts hours by up to 1% via bargaining (about 0.3 in Italy and Luxembourg). Bargaining effects are small relative to substitution effects.

Evidence from Europe: Bargaining Effects of Past Wage Shocks

Elasticity of Pareto weight w.r.t. own past wage shock, $e_{\mu_j, \mu_{jL}} \times e_{\mu_j, w_j}$, men vs. women



First quadrant: favorable own past shocks empower oneself, for both spouses (as under limited commitment). Source: Chiappori et al. (WP 2026), Figure 1.

Caveats

Testing models against relative consumption data would be helpful:

- Little variation in relative leisure in the data
- Gaining bargaining power may lead to higher labor supply (because of adjustments to home production and career concerns)

Persistence in labor supply could have other origins (i.e., adjustment costs in labor supply and home production)

Finding of some persistence in bargaining effects does not imply that the constrained-efficient limited commitment model has the right degree of persistence

Summary

Clear evidence for dynamically inefficient household decisions.

Also some evidence for static inefficiencies; however, for many applications, static efficiency combined with dynamic inefficiency seems to be a useful framework.

Evidence for both commitment and information frictions.

Exactly how much commitment there is, and how much this varies across couples and over time, is an open question.

How does it all matter? Turn to specific applications next!