Private Information in the Family*

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Abstract

Standard models of the family assume that spouses share information. In this paper, we challenge this assumption with theory and evidence. We field a new survey module in the Dutch LISS panel where spouses independently report their knowledge of each other's finances. Private information is pervasive: in 40 percent of couples, at least one partner lacks full knowledge of the other's income. We examine the implications of private information for intrahousehold risk sharing using a mechanism design approach. Our model predicts that a spouse's consumption share rises with their income share when information frictions are present but is independent of income under full information. Constrained-efficient allocations can be sustained without full revelation: each spouse chooses how much money to bring home, and hidden income is never revealed. Evidence from the LISS panel confirms the predictions: a positive relationship between income and consumption shares appears only among imperfectly informed couples. Controlling for limited commitment does not affect this result, suggesting that information asymmetries—rather than commitment frictions—drive departures from full insurance.

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"Then Abigail made haste and took two hundred loaves and two skins of wine and five sheep already prepared and five seahs of parched grain and a hundred clusters of raisins and two hundred cakes of figs, and laid them on donkeys. And she said to her young men, 'Go on before me; behold, I come after you.' But she did not tell her husband Nabal." (Samuel 25:18-19)

1 Introduction

Discussions of marriage in religious texts, storytelling, and historical writing have long pointed to deception, dishonesty, and other forms of private information as an inherent feature of humanity's oldest institution. More recently, field experiments in developing countries have confirmed that information frictions indeed shape household behavior. For example, experiments conducted by Ashraf (2009), Castilla and Walker (2013), and Hoel (2015) randomly give spouses the opportunity to conceal income or consumption choices from one another, and all show that household decisions depend on which partner possesses the information.[1]

Unlike in the development literature, private-information frictions have received little attention in research on households in high-income countries. State-of-the-art models generally build on the collective model (Chiappori 1992; Blundell, Chiappori, and Meghir 2005), which does not include information frictions, and recent work has focused on dynamic extensions in which limited commitment is the central friction (Mazzocco 2007; Voena 2015; Doepke and Kindermann 2019; Theloudis et al. 2025). Perhaps the scope for private information is more limited in a setting where many couples have joint finances, interact daily, and can use technology to monitor each other. However, another possibility, which is our focus here, is that information frictions do matter in high-income settings, but that little is known about them so far. This is plausible in part because data that can speak to the issue have been lacking. The household surveys that form the basis for much empirical work in family economics generally do not include questions about private information, and administrative data do not reveal what is hidden within households either. In contrast, events indicative of limited-commitment frictions, such as separation and divorce, are easily observed.

[1]Such frictions may also help explain why cash-transfer studies find that household consumption patterns vary with the recipient's gender (Attanasio and Lechene 2002; Robinson 2012; Armand et al. 2020).

In this paper, we provide new evidence on the prevalence of information frictions among couples in a high-income setting, and we combine theoretical modeling with empirical analysis to demonstrate the impact of these frictions on households' consumption decisions. To do so, we added a module on information sharing between spouses regarding income, finances, and consumption to the LISS panel, a longitudinal, nationally representative survey of Dutch households. The new data from this module, gathered in 2019, are linked to information on income and consumption from 2009 to 2021, allowing us to characterize how information frictions relate to intrahousehold risk sharing. We interpret this evidence from the perspective of a model of constrained-efficient risk sharing, which enables us to derive testable predictions and assess consequences for within-couple insurance.

Our first main finding is that private information within Dutch couples is common. In the survey, each partner reports how much they know about the other's income, debt, and discretionary expenses, and how much they believe the other knows about them. In 40 percent of couples, at least one partner reports imperfect knowledge of the other's income, and about 20 percent are imperfectly informed about debt and large discretionary expenses. These results are consistent with the observation of a high degree of financial autonomy within Dutch couples, with at least one partner maintaining a separate bank account in about half of couples.[2] Moreover, in 41 percent of couples, at least one partner does not always inform the other about large expenses, and in 27 percent, partners rarely discuss financial goals and values. Our data also highlight potential sources of financial disagreement or divergent interests within couples, as in 28 percent of couples, at least one partner believes that the other spends too much or lacks financial skills, or reports that finances are among the most stressful aspects of the relationship.

To generate predictions for how private information within couples affects intrahousehold risk sharing, we develop models of intrahousehold decision making subject to private-information frictions. In our baseline setting, one partner has private information about her income and can secretly consume a portion of it; only the fraction put toward observable consumption is revealed. The couple would like to maximize ex-ante welfare, but must account for the privately informed partner's

[2] In the Netherlands, spouses file taxes individually, implying that joint tax declarations cannot serve as a source of information either.

ex-post incentive to hide income. To characterize constrained-efficient outcomes in this setting, we adopt a mechanism design approach where incentive compatibility constraints ensure that the privately-informed partner has incentives to share risk in the family.

In the first-best allocation without private information frictions, optimal risk sharing implies that the relative consumption of the two spouses is independent of relative income: the spouses fully insure each other. In contrast, we show that in the constrained-efficient allocation, relative consumption and relative income move together, with a steeper slope if private information frictions are more severe. Intuitively, the optimal allocation provides incentives to the privately informed spouse to reveal income by making this spouse's implicit welfare weight an increasing function of income. In a setting with additional taste shocks, we also show that the constrained-efficient allocation can be implemented without hidden income ever being fully revealed. Here the privately-informed spouse unilaterally decides how much income to "bring home" to share with the other spouse, which preserves private information and lines up with historical and contemporary evidence on actual income-sharing arrangements in households. We also develop a series of extensions, including models with public goods and a dynamic setting. We show that in each case, the positive relationship between relative consumption and relative income is preserved as long as information frictions are present.

We then confront the predictions of our theory with empirical evidence from the LISS panel. Given the result that the relationship between relative income and relative consumption should depend on information frictions, we divide our sample of Dutch couples into those who report being fully informed about each other's income and those who do not, and then regress consumption shares on income shares with separate coefficients for each group. Our second main finding is that the estimated relationships are just as predicted by the theory. On average, there is a positive relationship between income and consumption shares within the family. As in the theoretical model, this positive relationship is entirely driven by couples who are imperfectly informed about each other's income. This also holds with couple fixed effects, meaning that changes in relative income within a given couple over time affect consumption sharing.

Our results suggest that information frictions are indeed an important force behind

limited risk sharing in the family. A possible objection to this interpretation is that the empirical patterns we document could be generated by other frictions in household decision-making that are not included in our model. In particular, limited commitment models of the type considered by Voena (2015) also predict that a rise in a partner's relative income increases their implicit welfare weight, because rising income increases outside options and makes commitment frictions more binding. To examine the role of commitment, we consider additional variables that are indicative of the degree of commitment within couples, such as whether children are present or whether the couple is married. We find that controlling for indicators of commitment leaves our main results unchanged: it is information frictions rather than indicators of limited commitment that predict the slope of the relationship between relative income and relative consumption. Taken together, these findings suggest that information asymmetries are a central friction in household decision-making even in a high-income setting.

There is now a substantial literature demonstrating that private information frictions affect household decisions in developing countries.[3] On the specific issue of hidden income, Fiala and He (2017) and Castilla (2019) use experiments to establish partners' willingness to hide income, and Zhang (2024) identifies income hiding from discrepancies in reported information within households. Among the small number of studies on information frictions in households in high-income countries, Fehr, Mollerstrom, and Perez-Truglia (2024) and Delavande, Koşar, and Zafar (2025) focus on the diffusion of information between spouses, documenting substantial differences in beliefs and limited information sharing. Our contribution to the empirical literature is to provide evidence on private information about income, consumption, and debt within households in a high-income setting, using a bespoke survey completed independently by both partners. Moreover, the evidence is linked to a rich panel survey that makes it possible to examine the impact of private information on household decisions.

[3] In addition to the work on consumption decisions already mentioned, private information has also been shown to matter for birth control and fertility decisions (Ashraf, Field, and Lee 2014), household investment (Kebede et al. 2013; Munro et al. 2014), savings (Schaner 2015; Carranza et al. 2025), labor supply (Carranza et al. 2025), remittances (Joseph, Nyarko, and Wang 2018), and agricultural production (Apedo-Amah, Djebbari, and Ziparo 2025). Attanasio and Krutikova (2020) provide survey evidence establishing that information frictions also matter between (as opposed to within) households.

We also contribute to the theoretical literature on household decisions by developing models of constrained-efficient insurance subject to information frictions. Existing models of information frictions in the family are few and typically context-specific.[4] Our constrained-efficient approach is in the spirit of recent extensions of the collective model to allow for limited participation (e.g., Voena 2015), in the sense of characterizing the minimum deviation from full efficiency that is implied by the friction considered.[5] Our mechanism design approach is connected to the literature on optimal taxation under private information (Mirrlees 1971; see Golosov, Tsyvinski, and Werning 2007 for a survey of dynamic extensions). Our contributions here are to implement constrained-efficient insurance models in a household setting and to develop non-revealing implementations consistent with both our empirical findings and historical evidence on household decision-making.

Lastly, our work is related to the empirical literature on intra-household allocations and consumption. We build in particular on Cherchye, De Rock, and Vermeulen (2012), who developed and analyzed the first consumption modules of the LISS panel, and Cherchye et al. (2017), who use a revealed preference approach with the same data to study the link between consumption allocations and the marriage market. Lise and Yamada (2019) study consumption decisions of Japanese couples and find, as we do, a clear correlation between relative income and relative consumption. They also show that the slope of the relationship depends on the presence of a joint checking account, which may be indicative of private-information frictions. However, these studies lack direct measures of private information, and they do not model private-information frictions.

In the following section, we describe our survey results on private information in Dutch couples. Section 3 describes our theoretical analysis of constrained-efficient

[4]For example, Bloch and Rao (2002) use a signaling model to study domestic violence and dowry payments in India. Dubois and Ligon (2011) use a moral-hazard model with unobserved labor effort to analyze food consumption patterns in the Philippines; in Walther (2017), women use home production to incentivize their husbands to generate wage income; and Buchmann, Dupas, and Ziparo (2025) develop a reputation model in which wives distort consumption decisions to receive high transfers from their husbands. Information flows within the family have recently been considered by Ashraf et al. (2025), who use a cheap-talk model to rationalize within-couple asymmetries in information about the health costs of childbearing.

[5]Fon (2021) also proposes a mechanism design approach but provides only a limited analysis. Cao et al. (2024) also consider information frictions in a collective framework, albeit from a different perspective with a focus on discrete choices in a Bayesian updating framework.

household decisions under private information. Section 4 contains our empirical results on the link between private information and risk sharing in the household, and Section 5 concludes.

2 Measuring Private Information in the Family

To shed light on the importance of asymmetric information for couples, we surveyed a sample of households drawn from the LISS panel (Longitudinal Internet Studies for the Social Sciences), which is administered and managed by the non-profit research institute Centerdata (Scherpenzeel and Das 2010). The LISS Core Study is a longitudinal study that started in 2007. It is repeated yearly and covers various socioeconomic topics to describe the living conditions of the respondents. The primary panel comprises about 5,000 households and is representative of the Dutch population.

In 2019, we added a module on information sharing and finances in couples. Both partners of 931 different-sex couples completed our online questionnaire. This unique dataset contains detailed information on the partners' knowledge of each other's finances. For example, we asked the respondents how strongly they agreed or disagreed with the following statements: *I know how much my partner earns (including retirement income)* and *My partner knows how much I earn (including retirement income)*. We asked similar questions about debt and large expenses.[6] For each topic (income/debt/large expenses), we refer to a couple as "fully informed" if both partners answered they *strongly agree* to both statements (i.e., four statements in total), and "imperfectly informed" otherwise.[7]

As Table 1 shows, there is a substantial share of couples who report not being perfectly informed about each other's finances. 40 percent of couples include at least one partner reporting imperfect information about income, that is, either feeling not fully informed about the other's income or indicating that the other is not fully

[6] The specific wording of those questions is: *I am well informed about how much debt my partner has in their own name*, *My partner is well-informed about how much debt I have in my own name*, *I am well informed (what was bought and/or how much was paid) about my partner's expenses for larger discretionary items such as apparel, accessories, electronics, and entertainment*, and *My partner is well-informed (what was bought and/or how much was paid) about my expenses for larger discretionary items such as apparel, accessories, electronics and entertainment*.

[7] See Appendix C for further details on the data.

Table 1: Share of Imperfectly Informed Couples (Percent)

	Imperfectly informed							Fully informed
	Couples	Individuals						
				Strongly disagree	Somewhat disagree	Not sure	Somewhat agree	Strongly agree
Income	40.3	27.7	I know	2.8	3.0	2.0	14.0	78.2
			Partner knows	2.3	2.5	1.6	13.7	79.9
Large expenses	22.8	14.3	I know	1.5	1.3	0.5	7.6	89.2
			Partner knows	1.2	1.4	0.5	8.1	88.8
Debt	21.8	13.4	I know	4.0	1.3	1.3	4.9	88.3
			Partner knows	4.0	1.5	1.2	4.7	88.6

Notes: This table shows how often Dutch couples' partners have private financial information. In the first column, a couple is imperfectly informed if at least one partner does not strongly agree that both partners know about their respective [income/debt/large expenses]. The second column presents the same statistic using only individual-level responses. The last five columns present the results for each statement separately, based on individual-level data. N = 931.

Table 2: Channels Behind Information Frictions (Percent)

	Couples	Individuals
Couple has at least one separate bank account	50.6	45.8
I do not always inform partner about large expenses	40.9	25.5
We rarely or never talk about financial goals and values	27.0	16.2
I have a secret credit card	2.3	1.2

Notes: This table shows the share of couples in which at least one of the partners declares a separate bank account, does not always inform their partner about large expenses, rarely or never talks about financial goals, and uses a secret credit card. N = 931.

informed.[8] In almost a quarter of all couples, there is imperfect information about large expenses, and in 22 percent of couples at least one spouse reports imperfect knowledge about debt. The data also show that information gaps are often one-sided. At the individual level, 28 percent and 14 percent of respondents report imperfect information about each other's income and debts, respectively. In only 15.1 percent of couples both partners report some misinformation about income.[9]

One may wonder about the mechanisms that prevent the sharing of financial information. First, note that in the Netherlands, married couples file taxes individually. Thus, there is no mandatory information sharing through the tax system. Second, we asked additional questions in our survey to get a sense of possible mechanisms. As Table 2 shows, in half of our couples, at least one spouse has a separate bank account. Having a separate account facilitates the concealment of information about income and expenses. Second, we asked respondents how often they do not inform their partner about larger expenses for discretionary items such as apparel, accessories, electronics, and entertainment. We find that in 41 percent of couples, at least one spouse admits to not fully informing the other about large expenses. In addition, 27 percent of our couples rarely talk about financial goals and values. Secret credit cards are another potential channel, but Table 2 shows that this is rare among Dutch couples.

Private information would not matter much if spouses largely agreed on financial and consumption decisions. Hence, we also elicited information on disagreement about family finances. Table 3 shows that in 28 percent of couples, at least one partner believes their partner spends too much or lacks financial competence, or reports that finances are among the most stressful aspects of the relationship. Moreover, 17 percent of couples regularly argue about money.

We also asked the respondents questions about their views on the relationship between individual income and consumption in their families, which is the focus of

[8]The result aligns with the findings of Fehr, Mollerstrom, and Perez-Truglia (2024). In a survey of German households, they asked partners separately about total household income and find that in a sizable fraction of households, reported household income differs substantially between spouses. This is particularly interesting given that married couples file taxes jointly in Germany.

[9]Appendix Table A3 provides additional details. In particular, in 9.1 percent of couples, both partners report they, personally, do not know their partner's income. In 25.3 percent of couples, only one partner indicates a lack of knowledge regarding the other partner's income, and in 60 percent of these cases, it is the wife who reports not being fully informed.

Table 3: Financial Disagreement in the Family (Percent)

	Couples	Individuals				
	Some financial disagreement	Some financial disagreement		No strong disagreement		
		Strongly agree	Somewhat agree	Neither	Somewhat disagree	Strongly disagree
1- Partner spends too much	9.6	0.7	4.2	9.7	10.7	74.6
2- Finance most stressful facet	12.7	1.9	5.8	8.8	9.9	73.6
3- Partner lacks financial skills	14.6	3.3	4.2	9.1	19.4	64.0
(1), (2), or (3)	27.9					
		Very frequently	Frequently	Sometimes	Rarely	Never
Money arguments*	16.9	0.3	2.0	8.9	22.7	66.2

Notes: This table shows the share of couples (first column) and individuals (last five columns) who experience a form of financial disagreement. In the first two rows, we define a couple to experience financial disagreement if at least one of the partners does not (strongly) disagree with the following statements *Finance is one of the most stressful facets of my relationship with my partner*, *My partner spends too much money*. In the third one, we define a couple to experience financial disagreement if at least one of the partners does not (strongly) agree with the statement *My partner is competent at dealing with money and finances*. In the last row, we define a couple to experience financial disagreement if one of the partners declared in the last 12 months that they sometimes or (very) frequently argued about money. N = 931.

* This question asks about the frequency of arguments about money. Respondents may choose from: very frequently, frequently, sometimes, rarely, or never.

our empirical analysis below. Specifically, we asked whether an increase in one partner's personal income should give that partner more say in how the extra money is spent. We asked this question both regarding regular income and regarding an unexpected one-time windfall (such as a bonus or inheritance). For each scenario, both spouses were asked separately about themselves and their partner, yielding four questions in total. As Table 4 shows, in about 16 percent of couples, at least one partner believes the income-earning spouse should have more say over how to spend an income increase. The number increases to 23 percent when the income increase is unexpected and temporary.

Table 4: Should the Person Who Receives an Increase in Income have More Say in How to Use It? (Percent)

	Couples		Individuals				
	Support for positive relationship		Positive income-consumption relationship		Flat income-consumption relationship		
			Strongly agree	Somewhat agree	Neither	Somewhat disagree	Strongly disagree
Regular	16.4	If I	3.8	4.8	12.5	6.3	72.6
		If partner	3.8	5.3	12.7	7.0	71.3
Unexpected	23.2	If I	5.0	8.4	12.6	7.3	66.6
		If partner	5.4	8.4	13.3	7.8	65.1

Notes: This table shows the percentage of individuals and couples in which at least one of the partners believes that the partner who earns more income should have greater influence over how it is spent. The statements are: *If [I/my partner] receive(s) an increase in regular income (such as a wage or pension increase or starting a new job at higher pay), [I/they] should have more say on how to use the extra income than [I do/they do]*, and *If [I/my partner] receive(s) an unexpected increase in income (such as a bonus payment, a lottery winning, an inheritance, temporary consulting income, or tips), [I/my partner] should have more say in how to use the extra income than [I do/my partner does]*. N = 931.

Financial disagreement coupled with private information is likely to have meaningful consequences for the allocation of resources in the family. To investigate these consequences, we next develop a theoretical model of family decision-making under asymmetric information, focusing on the relationship between income and consumption shares.

3 Income and Consumption Shares under Household Bargaining with Private Information

To understand how private information can affect household decision-making, we now develop a model where some of the spouses' income is hidden. We use a mechanism design approach and solve for the constrained-efficient allocation, given the assumed information structure.[10] We use this approach to derive results on how the link between income and consumption shares in the family varies with information frictions.

[10] Doepke and Tertilt (2016) provide a first example of this approach applied to the family.

3.1 Efficient Risk Sharing with the Revelation Principle

We consider a setting of one-sided private information. There are two spouses, f and m, with income y_f and y_m. The wife's income y_f is her private information; y_f has support $[\underline{y}_f, \overline{y}_f]$ and is described by a distribution function $F(y_f)$ with continuous density $f(y_f)$. The husband's income $y_m > 0$ is fixed and known to both spouses. Our results can be generalized to two-sided private information, but the one-sided case will simplify the exposition. Both spouses derive utility from individual private consumption c_f and c_m, where both c_f and c_m are observed by the other spouse. The wife consumes an additional good $\tilde{c}_f$, which is not observed by the husband. The presence of both private information on income and hidden consumption implies that the wife may be tempted to under-report income and divert the difference to increase hidden consumption. The focus of our analysis is how this possibility affects risk sharing in the family.

Preferences are given by:

$$u_m(c_m) = \log(c_m), \tag{1}$$

$$u_f(c_f, \tilde{c}_f) = \log(c_f) + \phi \log(\tilde{c}_f). \tag{2}$$

Here the weight $\phi \geq 0$ parameterizes the severity of the information friction. If $\phi = 0$, all consumption is observable and there is no friction; in this case the wife's income, though nominally private, is fully revealed through observable consumption choices. In contrast, if $\phi > 0$, private information affects outcomes.

Even though there are no public goods in this model, the spouses still benefit from making joint decisions because this allows them to share the risk that arises from the wife's uncertain income y_f. We would like to characterize how risk can be shared even though this income is private information. We start by considering the first-best benchmark without information frictions. The first-best allocation solves the Pareto problem:

$$\max_{c_f(y_f), \tilde{c}_f(y_f), c_m(y_f)} \{\mathrm{E}\left[\mu \log(c_f(y_f)) + \mu\phi \log(\tilde{c}_f(y_f)) + (1-\mu)\log(c_m(y_f))\right]\} \tag{3}$$

subject to the resource constraints:

$$c_f(y_f) + \tilde{c}_f(y_f) + c_m(y_f) = y_f + y_m \quad \forall y_f. \tag{4}$$

Here μ is the wife's welfare weight. The first-best allocation is:

$$c_f(y_f) = \frac{\mu}{1+\mu\phi}\left(y_f + y_m\right), \tag{5}$$

$$\tilde{c}_f(y_f) = \frac{\mu\phi}{1+\mu\phi}\left(y_f + y_m\right), \tag{6}$$

$$c_m(y_f) = \frac{1-\mu}{1+\mu\phi}\left(y_f + y_m\right). \tag{7}$$

The optimality conditions yield the following result:

Proposition 1 (Properties of First-Best Allocation)**.** *In the first-best allocation, the ratio of the spouses' observable consumption is independent of y_f and given by:*

$$\frac{c_f}{c_m} = \frac{\mu}{1-\mu},$$

and the ratio of the wife's hidden to visible consumption is also independent of y_f and given by:

$$\frac{\tilde{c}_f}{c_f} = \phi.$$

Proof: The result follows immediately by dividing the conditions (5) and (7) for the c_f/c_m ratio and the conditions (6) and (5) for the $\tilde{c}_f/c_f$ ratio. □

In other words, the first-best allocation features full insurance for income shocks, equalizing marginal utility ratios, and hence consumption ratios, across states. From this result, we conclude that the first-best allocation entails a flat relationship between income and consumption shares.

Let us now consider the constrained-efficient allocation. We are looking for an allocation rule $c_f(y_f)$, $\tilde{c}_f(y_f)$, $c_m(y_f)$ that maximizes the couple's weighted welfare, subject to the limitations implied by private information. Building on the revelation principle, we can restrict attention to a truth-telling allocation where the wife reports her true income, and the Pareto problem includes an additional constraint that requires that telling the truth is optimal for the wife. The constrained-efficient

allocation is characterized by maximizing the objective function (3) subject to the resource constraint (4) and subject to truth-telling constraints that require that for any actual income $y_f \in [\underline{y}_f, \overline{y}_f]$, it is weakly optimal to report the true income y_f rather than a different income $\tilde{y}_f$:

$$\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) \geq \log(c_f(\tilde{y}_f)) + \phi \log(\tilde{c}_f(\tilde{y}_f) + y_f - \tilde{y}_f). \tag{8}$$

The left-hand side is the wife's utility if she reports actual income y_f, and the right-hand side is her utility if the actual income is y_f but she reports $\tilde{y}_f$. The deviation between true and reported income $y_f - \tilde{y}_f$ modifies hidden consumption; in particular, if the wife under-reports income, $\tilde{y}_f < y_f$, hidden consumption goes up. Rather than imposing truth-telling for any possible deviation, we can also limit attention to marginal deviations. Focusing on marginal deviations turns out to be sufficient because diminishing marginal utility makes bigger lies less attractive than small lies; if small lies are not optimal, neither are large ones. We get the marginal truth-telling constraint by taking a derivative of (8) at $\tilde{y}_f = y_f$:

$$\frac{c'_f(y_f)}{c_f(y_f)} = \phi \frac{1 - \tilde{c}'_f(y_f)}{\tilde{c}_f(y_f)}. \tag{9}$$

Here the left-hand side is the marginal loss from a lower assignment of individual consumption when less income is reported, and on the right-hand side is the marginal gain from lying in terms of more utility from hidden consumption. Integrating this constraint gives:

$$\int_{\underline{y}_f}^{y_f} \frac{c'_f(x)}{c_f(x)}\, dx = \int_{\underline{y}_f}^{y_f} \phi \frac{1 - \tilde{c}'_f(x)}{\tilde{c}_f(x)}\, dx,$$

which can be written as:

$$\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) = U_{f,0} + \phi \int_{\underline{y}_f}^{y_f} \frac{1}{\tilde{c}_f(x)}\, dx$$

with $U_{f,0} = \log(c_f(\underline{y}_f)) + \phi \log(\tilde{c}_f(\underline{y}_f))$. Given this representation of the truth-telling

constraint, we can write the constrained-efficient problem as:

$$\max \left\{ \int_{\underline{y}_f}^{\overline{y}_f} \left[\mu \left(\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) \right) + (1-\mu) \left(\log(c_m(y_f)) \right) \right] f(y_f) \, \mathrm{d}y_f \right\}$$

subject to the budget constraints:

$$c_f(y_f) + \tilde{c}_f(y_f) + c_m(y_f) = y_f + y_m \quad \forall y_f$$

and the truth-telling constraints:

$$\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) = U_{f,0} + \phi \int_{\underline{y}_f}^{y_f} \frac{1}{\tilde{c}_f(x)} \, dx \quad \forall y_f.$$

Using λ_1 and λ_2 as the multipliers on the budget constraint and the truth-telling constraint and suppressing the dependence of c_f, c_m, $\tilde{c}_f$, λ_1, and λ_2 on y_f, we get the following Lagrangian:

$$\begin{aligned} L = & \int_{\underline{y}_f}^{\overline{y}_f} \left(\mu \left(\log(c_f) + \phi \log(\tilde{c}_f) \right) + (1-\mu) \left(\log(c_m) \right) \right) f(y_f) \, \mathrm{d}y_f \\ & - \int_{\underline{y}_f}^{\overline{y}_f} \lambda_1 \left(c_f + \tilde{c}_f + c_m - y_f - y_m \right) f(y_f) \, \mathrm{d}y_f \\ & + \int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 \left(\log(c_f) + \phi \log(\tilde{c}_f) - U_{f,0} - \phi \int_{\underline{y}_f}^{y_f} \frac{1}{\tilde{c}_f(x)} \, \mathrm{d}x \right) f(y_f) \, \mathrm{d}y_f \end{aligned}$$

Changing the order of integration in the integral term, this can be written as:

$$\begin{aligned} L = & \int_{\underline{y}_f}^{\overline{y}_f} \left(\mu \left(\log(c_f) + \phi \log(\tilde{c}_f) \right) + (1-\mu) \left(\log(c_m) \right) \right) f(y_f) \, \mathrm{d}y_f \\ & - \int_{\underline{y}_f}^{\overline{y}_f} \lambda_1 \left(c_f + \tilde{c}_f + c_m - y_f - y_m \right) f(y_f) \, \mathrm{d}y_f \\ & + \int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 \left(\log(c_f) + \phi \log(\tilde{c}_f) - U_{f,0} \right) f(y_f) \, \mathrm{d}y_f \\ & - \phi \int_{\underline{y}_f}^{\overline{y}_f} \left(\frac{1}{\tilde{c}_f} \Gamma(y_f) \right) \, \mathrm{d}y_f, \end{aligned}$$

where:

$$\Gamma(y_f) = \int_{y_f}^{\overline{y}_f} \lambda_2(x) f(x) \, \mathrm{d}x. \tag{10}$$

Note that $\Gamma'(y_f) = -\lambda_2(y_f) f(y_f)$ and $\Gamma(\overline{y}_f) = 0$. Using this formulation and suppressing the dependence of $\Gamma(y_f)$ on y_f, the first-order conditions for c_f, c_m, $\tilde{c}_f$, and $U_{f,0}$ are:

$$\frac{\mu}{c_f} = \lambda_1 - \lambda_2 \frac{1}{c_f}, \tag{11}$$

$$\frac{1-\mu}{c_m} = \lambda_1, \tag{12}$$

$$\frac{\mu\phi}{\tilde{c}_f} = \lambda_1 - \lambda_2 \frac{\phi}{\tilde{c}_f} - \frac{\phi}{f(y_f)\tilde{c}_f^2}\Gamma, \tag{13}$$

$$\int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 f(y_f) \, \mathrm{d}y_f = 0. \tag{14}$$

Solving the first two conditions for λ_1 and dividing them gives:

$$\frac{c_f}{c_m} = \frac{\mu + \lambda_2}{1-\mu}. \tag{15}$$

Hence, if the truth-telling constraint is binding ($\lambda_2 \neq 0$), the ratio of the spouses' consumption is distorted from the first best. Given condition (14), we have:

$$\int_{\underline{y}_f}^{\overline{y}_f} \frac{c_f}{c_m} f(y_f) \, \mathrm{d}y_f = \frac{\mu}{1-\mu}.$$

Hence, the consumption ratio is still given by the ratio of Pareto weights in expectation, but not for every income realization. Solving (11) and (13) for λ_1 and taking the ratio gives:

$$\frac{\tilde{c}_f}{c_f} = \phi \frac{\mu + \lambda_2 + \Gamma f(y_f)^{-1} \tilde{c}_f^{-1}}{\mu + \lambda_2} \tag{16}$$

This shows that the choice of hidden versus observable consumption is generally distorted; the ratio would simply be equal to ϕ if there were no truth-telling constraint. The direction of the distortion depends on the cumulative multiplier Γ. If $\Gamma > 0$, as we will see is true in the interior of the distribution, hidden consumption $\tilde{c}_f$ will be higher relative to c_f compared to the first-best outcome.

With the optimality conditions in place, we can now characterize the properties of the constrained-efficient allocation.

Proposition 2 (Properties of Constrained Efficient Allocation)**.** *The constrained-efficient allocation has the following characteristics:*

1. *The ratio of the wife's hidden to visible consumption is undistorted at the boundaries of the income distribution:*

$$\frac{\tilde{c}_f(\underline{y}_f)}{c_f(\underline{y}_f)} = \frac{\tilde{c}_f(\overline{y}_f)}{c_f(\overline{y}_f)} = \phi.$$

2. *In the interior of the income distribution, the hidden/observable consumption ratio is distorted towards higher hidden consumption. That is, for y_f satisfying $\underline{y}_f < y_f < \overline{y}_f$, we have:*

$$\frac{\tilde{c}_f(y_f)}{c_f(y_f)} > \phi.$$

3. *The ratio of the wife's to the husband's observable consumption c_f/c_m is increasing in y_f, implying a positive relationship between relative income and relative consumption.*

The proof of the proposition is given in Appendix A. To gain intuition for these results, one can build on the similarity of our setting to the classic Mirrleesian optimal taxation problem under private information. The dependence of the husband's consumption c_m on the wife's privately-observed income y_f effectively amounts to a nonlinear tax on the wife's observable consumption c_f. If the wife wants to have more observable consumption, she will also have to provide the husband with additional consumption. This implicit tax on observable consumption drives a wedge between the marginal utility of hidden versus observable consumption, just as income taxes create a wedge between the marginal utilities of consumption and leisure in a Mirrleesian model. The wedge explains our finding that the wife's ratio of hidden to observable consumption is distorted upwards compared to the first best. Making the ratio of observable consumption c_f/c_m increase in y_f lowers the implicit tax, because the wife's consumption increases more steeply in income compared to the case of holding c_f/c_m constant. An increasing ratio c_f/c_m therefore lowers the "tax wedge" and the associated distortion, explaining its optimality.

The finding that there is no distortion between observable and hidden consumption at the highest income $\overline{y}_f$ is analogous to the well-known "zero marginal tax at the top" result in Mirrleesian taxation. Truth-telling constraints bind downward (i.e., the temptation is to under-report income). The distortion between observable and hidden consumption at a given income level $\hat{y}_f$ serves to discourage under-reporting at higher income levels $y_f > \hat{y}_f$. At the top, there is no higher level at which misreporting must be deterred, so no distortion is needed.

Figures 1 and 2 illustrate the properties of optimal allocations in a computed example with parameter values $\mu = 0.51$, $\phi = 0.6$, $y_m = 1$, and a uniform distribution for y_f on the interval $[0.5, 2]$. In the first best without information frictions, c_f, $\tilde{c}_f$, and c_m are constant fractions of total income $y_f + y_m$, and hence relative consumption is constant. In contrast, in the constrained-efficient allocation c_f starts below the first-best level but then increases more steeply, whereas c_m is higher than the first-best outcome for low y_f but then increases more slowly. The observable consumption ratio c_f/c_m rises throughout the entire range of y_f, while the ratio of hidden to observable consumption $\tilde{c}_f/c_f$ displays an inverted-U shape, with no distortion at the boundaries of the distribution of y_f and relatively higher hidden consumption in the interior.

Figures 3 and 4 display the consumption allocation with a lower utility weight on hidden consumption of $\phi = 0.06$. Qualitatively, the properties of the constrained-efficient allocation are unchanged, but the deviation from the first-best outcome is now quantitatively smaller. We can interpret ϕ as measuring the severity of private information frictions. In the limit where ϕ converges to zero, frictions disappear: even though the wife's income is private information in principle, in this limit it is fully revealed through consumption choices. Hence, when frictions are low, the deviations from the first best are also small. In the other limit where ϕ becomes so large that the wife derives most of her utility privately, little risk sharing is possible and her total consumption moves one-for-one with income.

In summary, the model makes clear predictions for how private information affects risk sharing in the family: if private-information frictions are severe, we should observe a strong positive correlation between relative income and relative consumption in the family, whereas if there are no or few frictions, relative consumption should be independent of relative income. Before confronting these predictions

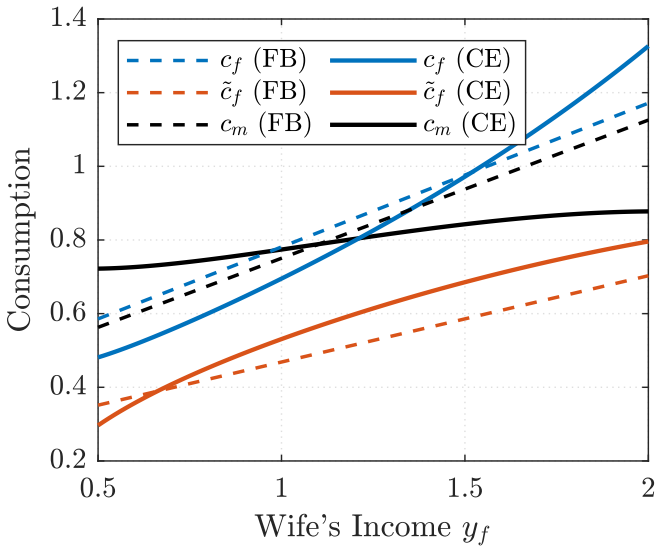


Figure 1: Consumption allocations under first-best (FB) and constrained-efficient (CE) outcome; $\mu = 0.51$, $\phi = 0.6$, $y_m = 1$, $y_f \sim \mathcal{U}[0.5, 2]$

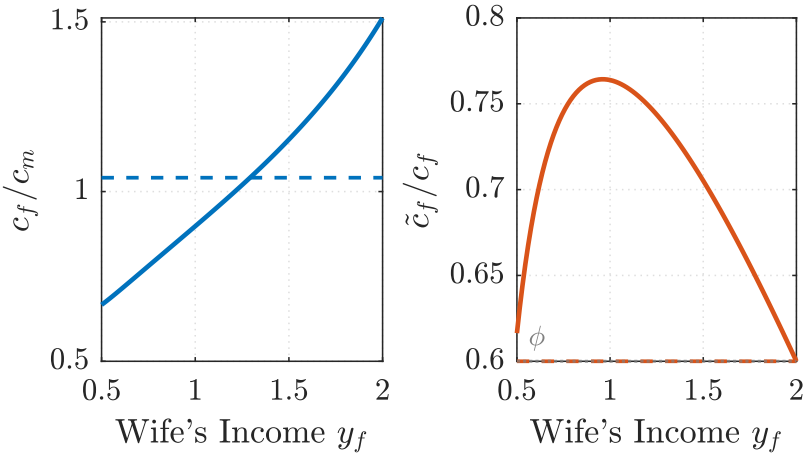


Figure 2: Consumption ratios under first-best and constrained efficient outcome. Left panel: ratio of wife's to husband's consumption (c_f/c_m). Right panel: ratio of wife's hidden to observable consumption ($\tilde{c}_f/c_f$). Solid lines: constrained-efficient allocation; dashed lines: first-best allocation. $\mu = 0.51$, $\phi = 0.6$, $y_m = 1$, $y_f \sim \mathcal{U}[0.5, 2]$

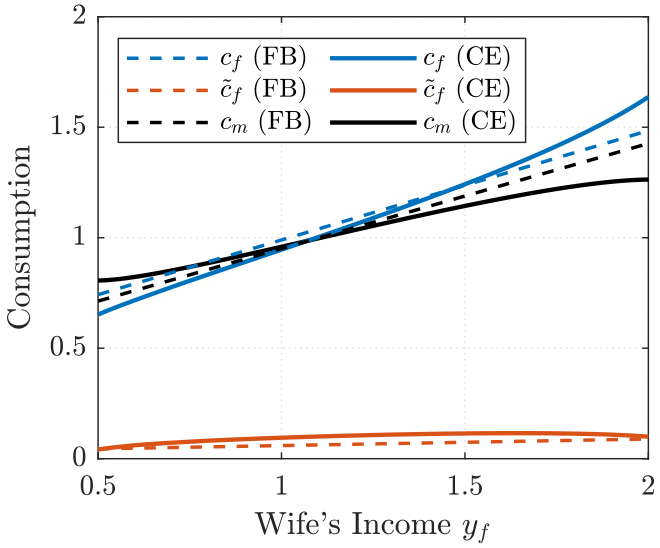


Figure 3: Consumption allocations under first-best (FB) and constrained-efficient (CE) outcome with lower utility from hidden consumption; $\mu = 0.51$, $\phi = 0.06$, $y_m = 1$, $y_f \sim \mathcal{U}[0.5, 2]$

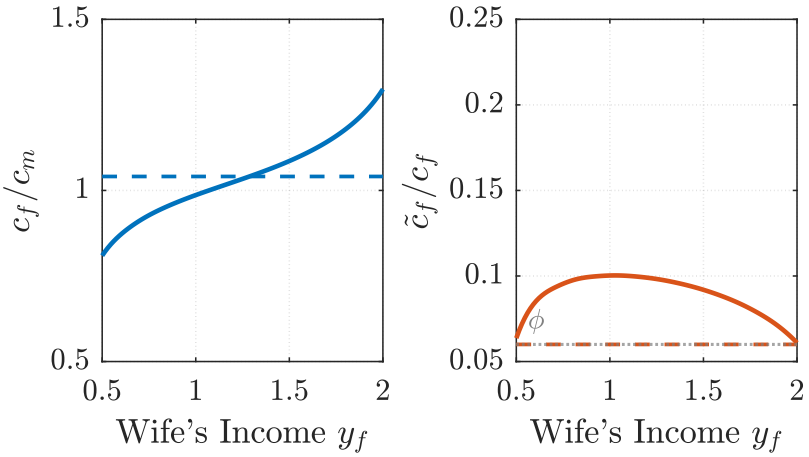


Figure 4: Consumption ratios under first-best and constrained efficient outcome with lower utility from hidden consumption. Left panel: ratio of wife's to husband's consumption (c_f/c_m). Right panel: ratio of wife's hidden to observable consumption ($\tilde{c}_f/c_f$). Solid lines: constrained-efficient allocation; dashed lines: first-best allocation. $\mu = 0.51$, $\phi = 0.06$, $y_m = 1$, $y_f \sim \mathcal{U}[0.5, 2]$

with empirical evidence, we consider model extensions.

3.2 Constrained Efficiency without Truth-Telling

Comparing the baseline model with the empirical evidence presented in Section 2, there is a tension in terms of how private information is handled. The evidence shows that there are many couples who report a lack of full information disclosure in the family, in the sense of not being fully informed about, or not fully revealing information to their spouse. The mechanism design approach followed above, in contrast, is built on the idea of full revelation, where all relevant information is disclosed and the contract design ensures that truthful disclosure is optimal for both spouses. In other words, while the presence of private information shapes the constrained-efficient allocation, both partners end up fully informed ex-post.

In this section, we address this tension. First, we note that while truthful revelation under the revelation principle is one way of implementing the constrained-efficient allocation, it is generally not the only way. In the optimal contract characterized in the previous section, there is a one-to-one mapping between y_f and the allocation of consumption. Thus, rather than reporting her true income y_f, we could also implement the constrained-efficient allocation by specifying a mapping from c_f to c_m. That is, the wife would report how much observable consumption c_f she is supposed to have, and the contract would specify how much the wife would then have to transfer to the husband, or vice versa. That is, the contract would resemble a Mirrleesian tax-and-transfer scheme based on observable consumption. However, while such an implementation would not require the wife to report y_f, the wife's true income y_f is still implied by the allocation; that is, in the end, the husband still knows the level of y_f. Arguably, such an implementation is still not consistent with spouses reporting genuine uncertainty about each other's income or consumption.

However, when we extend our model to include an additional dimension of uncertainty, it is possible to implement the constrained-efficient allocation without full revelation, either direct or indirect. Moreover, implementations that do not require full revelation turn out to be advantageous: they require less information to be reported than the revelation-principle benchmark.

Consider the following variation of our setting. As before, the wife earns private income $y_f \in [\underline{y}_f, \overline{y}_f]$ and the husband has fixed income y_m, and the preferences are

still given by (1) and (2). The new source of uncertainty is that the utility weight $\phi \geq 0$ that is attached to hidden consumption $\tilde{c}_f$ is stochastic and private information for the wife. In particular, $\phi \in \{\underline{\phi}, \overline{\phi}\}$, with $0 \leq \underline{\phi} < \overline{\phi}$, with $p \geq 0$ the probability of the low preference shock and $1 - p > 0$ the probability of the high shock. The distribution of the wife's income shock can depend on the realization of the preference shock, so that the distribution over y_f is given by $F(y_f|\phi)$. We can interpret the uncertainty over ϕ as capturing hidden consumption opportunities; sometimes an opportunity opens up to consume privately, and sometimes such opportunities are more limited. For example, the wife may run into friends on her way home from work with whom she could go out or go shopping, or she may not. The husband is aware of the stochastic process for ϕ, but the realization is private information for the wife.

The standard mechanism approach is to make the allocation a function of all hidden information, which is to be reported by the wife. The allocation can then be written as $c_f(y_f, \phi)$, $\tilde{c}_f(y_f, \phi)$, $c_m(y_f, \phi)$, and these functions are chosen to maximize weighted welfare of the two spouses subject to truth-telling constraints for the wife. The maximization problem that characterizes the constrained-efficient allocation with truth-telling constraints is given in Appendix B.1.

We now want to argue that while this implementation (relying on truthful reporting of both income and preference shock ϕ) is feasible, there is an alternative implementation that also achieves constrained efficiency, that does not impose full information disclosure, and that at the same time is simpler to implement, in the sense of requiring less information to be transmitted. The key insight is that incentive compatibility requires the husband's consumption c_m to depend only of the wife's observable consumption c_f.

Proposition 3 (Mapping from Wife's to Husband's Consumption)**.** *The husband's consumption c_m in the constrained-efficient allocation can be expressed as a function of the wife's observable consumption c_f only.*

Proof: Consider two combinations of y_f and ϕ that generate (in the constrained-efficient allocation) the same c_f: $c_f(y_{f,1}, \phi_1) = c_f(y_{f,2}, \phi_2)$. We would like to show that c_m is then also the same for these two combinations of income and preference shock, $c_m(y_{f,1}, \phi_1) = c_m(y_{f,2}, \phi_2)$, implying that there is a unique mapping from c_f to

c_m. Consider, to the contrary, a case where we have:

$$c_m(y_{f,1}, \phi_1) < c_m(y_{f,2}, \phi_2).$$

Now, if the wife's true income shock and preference shock is $y_{f,2}, \phi_2$, she could gain by misreporting $y_{f,1}, \phi_1$, which would give her the same c_f as under the truthful report but allow her to increase hidden consumption by the difference $c_m(y_{f,2}, \phi_2) - c_m(y_{f,1}, \phi_1) > 0$. □

We therefore see that incentive compatibility requires that for any combinations of private information that yield the same constrained-efficient observable consumption for the wife, the husband's consumption also has to be the same. In other words, the wife's observable consumption is a sufficient statistic for the husband's consumption. This finding implies that the constrained efficient allocation can be implemented by the wife reporting her desired observable consumption, which then pins down what the husband gets, with hidden consumption being the residual after paying out observable consumption for husband and wife.

The proposition also implies that total observable consumption $c_f + c_m$ is a sufficient statistic for c_f and c_m individually; if this were not the case, once again the wife could gain by reporting so as to maximize her consumption for any given total. Hence, the constrained efficient allocation can be implemented by the wife reporting the amount of resources that she "brings home" to share with the husband, with the total income and hidden consumption never reported to the husband. Given that ϕ is random, the husband indeed never finds out what the hidden income was. This matches the survey evidence of genuine uncertainty about a partner's income. More generally, this implementation requires less information to be disclosed and thus would be strictly preferable if there are any costs of information disclosure.

To illustrate the constrained-efficient allocation in this model, consider the case where $\underline{\phi} = 0$, i.e., the wife has hidden consumption opportunities only with some probability. Building on Proposition 3, we write the allocation in terms of functions $c_f(R)$ and $c_m(R)$, where R denotes total resources available for observable consumption, and a function $\hat{y}_f(y_f, \phi)$ that denotes the income that the wife brings home for observable consumption. We therefore have $R = y_m + \hat{y}_f(y_f, \phi) = c_f(R) + c_m(R)$.

The constrained-efficient problem can be expressed as:

$$\max \{\mathrm{E}\left[\mu \log(c_f(R(y_f,\phi)) + \mu\phi \log(\tilde{c}_f(y_f,\phi)) + (1-\mu)\log(c_m(R(y_f,\phi))\right]\}$$

subject to the determination of hidden consumption:

$$\tilde{c}_f(y_f,\phi) = y_f - \hat{y}_f(y_f,\phi),$$

the resource constraint:

$$c_f(R(y_f,\phi)) + \tilde{c}_f(y_f,\phi) + c_m(R(y_f,\phi)) = y_f + y_m,$$

the determination of resources available for observable consumption:

$$R = y_m + \hat{y}_f(y_f,\phi),$$

and subject to incentive-compatibility constraints. If $\phi = 0$, there is no utility from hidden consumption and constrained efficiency requires that $\hat{y}_f(y_f,\phi) = y_f$, i.e., the wife brings all her income home. For this to be incentive compatible, $c_f(R)$ must weakly increase in R; otherwise the wife could gain observable consumption by bringing less income home and disposing of the rest. If $\phi = \overline{\phi} > 0$, incentive compatibility of the contract requires that for any counterfactual income $\tilde{y}_f \in [\underline{y}_f, \overline{y}_f]$ and any ϕ, the wife is at least as well off bringing home the amount $\hat{y}_f(y_f,\overline{\phi})$ corresponding to actual income y_f than the amount corresponding to $\tilde{y}_f$ and ϕ:

$$\begin{aligned}\log(c_f(y_m + \hat{y}_f(y_f,\overline{\phi}))) + \overline{\phi}\log(y_f - \hat{y}_f(y_f,\overline{\phi})) \\ \geq \log(c_f(y_m + \hat{y}_f(\tilde{y}_f,\phi))) + \overline{\phi}\log(y_f - \hat{y}_f(\tilde{y}_f,\phi)).\end{aligned}$$

This model can be analyzed with the same methods that we used for the case of a deterministic ϕ above, and the basic insights carry over as well. In particular, it continues to be optimal for the wife's consumption share to increase in y_f, as this relaxes incentive-compatibility constraints. The probability distribution over ϕ affects the slope of this relationship.

Figure 5 displays the relationship between observable resources R and the wife's share of these resources $c_f(R)/R$ for an environment where $\phi \in \{0, 0.6\}$. The distri-

bution of y_f is uniform and has a smaller range conditional on $\phi = 0$ (this prevents high realizations of R fully revealing that $\phi = 0$). Outcomes are displayed for two settings with either $p = 0.1$ or $p = 0.9$, i.e., a small and large probability that $\phi = 0$.

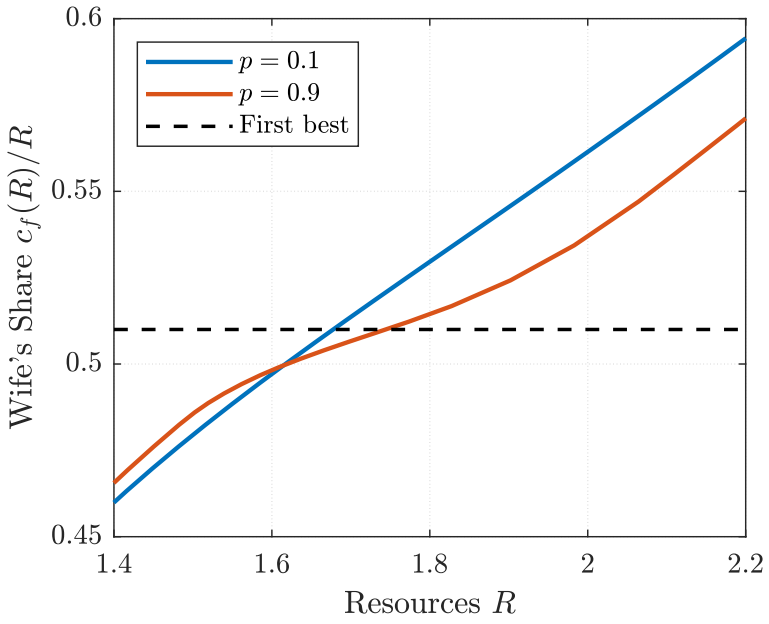


Figure 5: Mapping from observable resources R into wife's observable consumption share $c_f(R)/R$ for low and high probability of $\phi = 0$; $\mu = 0.51$, $\phi \in \{0, 0.6\}$, $y_m = 1$, $y_f \sim \mathcal{U}[0.5, 1]$ if $\phi = 0$, $y_f \sim \mathcal{U}[0.5, 2]$ if $\phi = 0.6$

We see that in either case, the wife's share is increasing in R, unlike in the first-best solution where it is constant. When there is a high probability that the wife does not have hidden consumption opportunities ($p = 0.9$), the relationship between R and c_f is flatter and hence closer to the first best. Even for $p = 0.9$, however, the slope is steep at the extremes of the distribution; this follows from our earlier result that the ratio of hidden to observable consumption is undistorted at the extremes.

Overall, this model provides a plausible interpretation of our survey results. The spouses are aware of the presence of private information, and the allocation of household resources reflects the extent of private information. At the same time, there is no full revelation of hidden information; only the resources available for observable consumption are common knowledge. The main observable implication of this partial-revelation model (as of the full-revelation discussed earlier) is that if there is private information, there is a positive relationship between the in-

come share and the consumption share of each spouse. In contrast, if there are no private-information frictions, the consumption share does not depend on relative income.

In the setting described here, partial revelation of information is motivated by simplicity: the optimal allocation can be implemented by reporting a single variable (namely, the amount of resources a spouse "brings home" for observable consumption), rather than the full combination of income and preference shocks that underlies this variable. Another way to motivate deviations from the revelation principle is through a setting that combines private information and commitment frictions. If there is lack of commitment, a spouse may want to limit the revelation of private information, in order not to undermine their bargaining position in the future. Such settings are explored (albeit not for the case of intra-household bargaining) by Doval and Skreta (2022), among others.

A particular attraction of the implementation of the optimal contract described in this section is that it aligns with historical and contemporary evidence from different periods and societies. Pahl (1980) describes several examples of an "allowance system" where wives were often ignorant about their husband's earnings. Humphries and Thomas (2023), when describing such a system in British coal miner families in the nineteenth century, state that '"...wives were often unaware of their husbands' earned income, and unless the 'housekeeping' was adjusted, rising wages boosted men's share while the family remained stinted" (p. 102). Similar findings are reported by Townsend (1957), a study of family life in the United Kingdom in the mid-twentieth century. In the study, out of 45 wives, only seven said they knew how much the husband earned. When interviewing husbands, Townsend reports: "Mr. Snape told me his earnings and savings when his wife was not in the room and he was most anxious that this information should be treated as private. Two or three times he repeated, 'This is between you and me' " (p. 68). Men's hidden consumption frequently took the form of drinking alcohol. Seccombe (1993) reports that in Paris in the late nineteenth century, tensions were high on payday, when housewives would walk impatiently towards the factory or wait in front of the pub (p. 146). Hübner (1988) describes a similar scenario for German working-class families in the nineteenth century, noting that men spent too much of their income on alcohol which added to conflict in the household and restricted wives'

access to household income (p. 133).

3.3 Further Extensions

The settings discussed here can be extended in different directions. For example, standard models of intra-household decision making usually include public goods within the household (i.e., goods like a shared apartment or spending on children that both partners benefit from). It is straightforward to extend our model to allow for public goods; Appendix B.2 outlines an extension of our baseline model with this feature. Our main results carry over unchanged to this setting. Note that in our model, public goods are not required to motivate why the partners want to cooperate in the first place: risk sharing alone provides a sufficient motive.

Our results also extend to dynamic models where consumption decisions extend over multiple periods. The main additional implication of such models is that the impact of private information is persistent: the wife's income share is positively related not only to current but also to future consumption. A simple case to illustrate this result is a two-period model where there is income uncertainty and hidden consumption only in the first period. Consider an extension of our setup where the utility functions are:

$$\begin{aligned} u_m(c_{m,1}, c_{m,2}) &= \log(c_{m,1}) + \beta \log(c_{m,2}), \\ u_f(c_{f,1}, \tilde{c}_{f,1}, c_{f,2}) &= \log(c_{f,1}) + \phi \log(\tilde{c}_{f,1}) + \beta \log(c_{f,2}), \end{aligned}$$

where the second subscript $t \in \{1, 2\}$ for each consumption variable denotes the period. There is no saving or storage technology. Therefore, in the first period the resource constraint is as before:

$$c_{f,1}(y_{f,1}) + \tilde{c}_{f,1}(y_{f,1}) + c_{m,1}(y_{f,1}) = y_{f,1} + y_{m,1} \quad \forall y_{f,1}.$$

In the second period, the wife and husband have fixed income $y_{f,2}$ and $y_{m,2}$, and the resource constraint is:

$$c_{f,2}(y_{f,1}) + c_{m,2}(y_{f,1}) = y_{f,2} + y_{m,2}.$$

Notice that the allocation depends only on $y_{f,1}$ in both periods because only $y_{f,1}$ is

uncertain. The truth telling-constraint is:

$$\log(c_{f,1}(y_{f,1})) + \phi \log(\tilde{c}_{f,1}(y_{f,1})) + \beta \log(c_{f,2}(y_{f,1})) \\ \geq \log(c_{f,1}(\tilde{y}_{f,1})) + \phi \log(\tilde{c}_{f,1}(\tilde{y}_{f,1}) + y_{f,1} - \tilde{y}_{f,1}) + \beta \log(c_{f,2}(\tilde{y}_{f,1})).$$

Differentiating and integrating this constraint as above gives:

$$\log(c_{f,1}(y_{f,1})) + \phi \log(\tilde{c}_{f,1}(y_{f,1})) + \beta \log(c_{f,2}(y_{f,1})) = U_{f,0} + \phi \int_{\underline{y}_{f,1}}^{y_{f,1}} \frac{1}{\tilde{c}_{f,1}(x)}\, dx,$$

where

$$U_{f,0} = \log(c_{f,1}(\underline{y}_{f,1})) + \phi \log(\tilde{c}_{f,1}(\underline{y}_{f,1})) + \beta \log(c_{f,2}(\underline{y}_{f,1})).$$

Suppressing the dependence of the choice variables on $y_{f,1}$ and using $\lambda_{1,1}$ and $\lambda_{1,2}$ as the multipliers on the two budget constraints, and applying the same change in the order of integration as above, the Lagrangian for the constrained efficient problem is:

$$\begin{aligned} L = \int_{\underline{y}_{f,1}}^{\overline{y}_{f,1}} \big(& \mu \left(\log(c_{f,1}) + \phi \log(\tilde{c}_{f,1}) + \beta \log(c_{f,2}) \right) \\ & + (1-\mu) \left(\log(c_{m,1}) + \beta \log(c_{m,2}) \right) \big) f(y_{f,1})\, \mathrm{d}y_{f,1} \\ & - \int_{\underline{y}_{f,1}}^{\overline{y}_{f,1}} \lambda_{1,1} \left(c_{f,1} + \tilde{c}_{f,1} + c_{m,1} - y_{f,1} - y_{m,1} \right) f(y_{f,1})\, \mathrm{d}y_{f,1} \\ & - \int_{\underline{y}_{f,1}}^{\overline{y}_{f,1}} \lambda_{1,2} \beta \left(c_{f,2} + c_{m,2} - y_{f,1} - y_{m,2} \right) f(y_{f,1})\, \mathrm{d}y_{f,1} \\ & + \int_{\underline{y}_{f,1}}^{\overline{y}_{f,1}} \lambda_2 \left(\log(c_{f,1}) + \phi \log(\tilde{c}_{f,1}) + \beta \log(c_{f,2}) - U_{f,0} \right) f(y_{f,1})\, \mathrm{d}y_{f,1} \\ & - \phi \int_{\underline{y}_{f,1}}^{\overline{y}_{f,1}} \left(\frac{1}{\tilde{c}_f} \Gamma(y_{f,1}) \right) \mathrm{d}y_{f,1}, \end{aligned}$$

where:

$$\Gamma(y_{f,1}) = \int_{y_{f,1}}^{\overline{y}_{f,1}} \lambda_2(x) f(x)\, \mathrm{d}x.$$

The first-order conditions for $c_{f,1}$, $c_{m,1}$, $c_{f,2}$, $c_{m,2}$, $\tilde{c}_{f,1}$, and $U_{f,0}$ are:

$$\begin{aligned}
\frac{\mu}{c_{f,1}} &= \lambda_{1,1} - \lambda_2 \frac{1}{c_{f,1}}, \\
\frac{1-\mu}{c_{m,1}} &= \lambda_{1,1}, \\
\frac{\mu}{c_{f,2}} &= \lambda_{1,2} - \lambda_2 \frac{1}{c_{f,2}}, \\
\frac{1-\mu}{c_{m,2}} &= \lambda_{1,2}, \\
\frac{\mu\phi}{\tilde{c}_{f,1}} &= \lambda_{1,1} - \lambda_2 \frac{\phi}{\tilde{c}_{f,1}} - \frac{\phi}{f(y_{f,1})\tilde{c}_{f,1}^2}\Gamma, \\
\int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 f(y_f)\,\mathrm{d}y_f &= 0.
\end{aligned}$$

Solving for $\lambda_{1,1}$ and $\lambda_{1,2}$ and taking ratios, we get:

$$\frac{c_{f,1}}{c_{m,1}} = \frac{c_{f,2}}{c_{m,2}} = \frac{\mu + \lambda_2}{1-\mu}.$$

Hence, the ratio of observable consumption of wife and husband is equalized across periods, and if truth-telling constraints become more binding (higher λ_2), the wife's consumption increases in both periods. Considering the ratio of the wife's hidden to her observable consumption in the first period, we get:

$$\frac{\tilde{c}_{f,1}}{c_{f,1}} = \phi \frac{\mu + \lambda_2 + \Gamma f(y_{f,1})^{-1}\tilde{c}_{f,1}^{-1}}{\mu + \lambda_2}.$$

This condition is identical to (16) above. Overall, private information affects the allocation in the same way as in the single-period model, except that now observable consumption adjusts to private information in both periods.

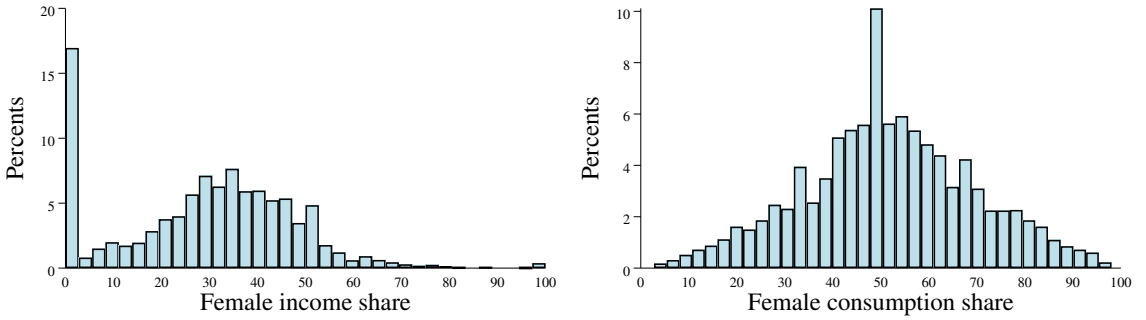
The intuition for persistent effects is that consumption smoothing transmits private information across periods. For a given amount of resources available for observable consumption, equating the ratio of marginal utilities of the wife and husband over periods yields the highest utility. Hence, more generally, private information in a given period will affect consumption allocations in all subsequent periods. The persistent impact of private information is analogous to standard results for re-

peated principal-agent problems with private information, see for example Thomas and Worrall (1990).

4 How does consumption vary with income in the data?

We now compare the theoretical predictions for the link between income and consumption shares to the evidence. To do so, we use our measures of private information, focusing on private information about income, and link our survey with existing and newly added modules on time use and consumption and the core survey, exploiting the panel nature of the LISS data. Consumption modules contain detailed assignable (nondurable) expenditure information at the individual and household levels. The first waves of the questionnaire were implemented and analyzed by Cherchye, De Rock, and Vermeulen (2012) and Cherchye et al. (2017). In collaboration with a larger team, we expanded the survey with four additional waves between 2019 and 2021.[11] Private expenditures include food and drinks, as well as clothing, expenditures on leisure activities, and personal care.[12]

Figure 6: Variation in Income and Consumption Shares



Notes: The figure displays the distribution of female income shares on the left and female consumption shares on the right. The sample includes all couples in all survey waves, with 4,459 observations in total.

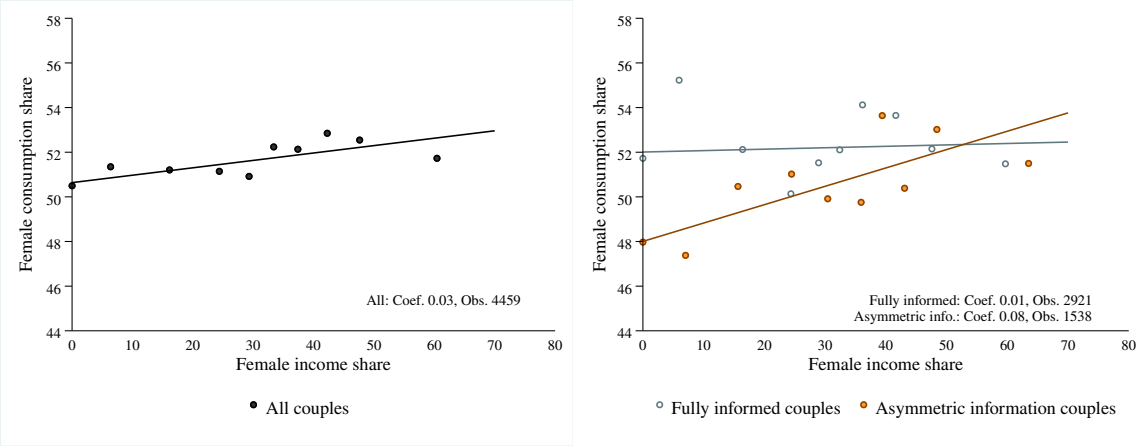
After trimming the top and bottom one percent of private expenditure, our final sample comprises 4,459 year-couple observations and 847 unique different-sex couples who completed both our private information module and at least one time-use

[11] See von Gaudecker et al. (2020) for a full documentation including the questionnaires. Responses related to hours and earnings during the Covid period were analyzed by Zimpelmann et al. (2021).

[12] Appendix Table A1 describes the full list of questions by survey wave.

and consumption module.[13] Figure 6 depicts histograms of the female income and consumption shares. Both distributions show wide variation. Women's income share is centered around 30 percent, and the consumption share around 50 percent.

Figure 7: Female Income and Consumption Shares by Couple Type



Notes: The figure displays the relationship between female income shares and female consumption shares for all couples on the left and for the imperfectly informed couples and the fully informed couples separately on the right. We group the observations into ten bins, for all couples and for each information group separately.

As Cherchye et al. (2017) document for earlier waves of the LISS data, there is a clear positive relationship between income and consumption shares (left panel of Figure 7). We would like to examine the role of private information in generating this relationship. Our results in Propositions 1 and 2 suggest that the relationship between relative income and consumption should be positive if private information frictions are present, but flat if couples are fully informed. The empirical evidence lines up with these predictions. Splitting the sample into the two groups of imperfectly informed and fully informed couples, the right panel of Figure 7 shows that the positive relationship is entirely driven by imperfectly informed couples. In contrast, among couples that have perfect information about each other's income, the relationship between income and consumption sharing is flat. Hence, at least in terms of basic correlations in the cross section, the empirical evidence is consistent

[13] Section 2 and Appendix C describe our data in more details. Appendix D shows that the shares displayed in Tables 1 to 4 are similar when we restrict the sample to a final sample that includes 847 couples who answered all modules.

with the notion that private information frictions are a major driver of imperfect insurance among couples.

Table 5: Relationship between Consumption Share and Income Share

	Female consumption share			
	(1)	(2)	(3)	(4)
Female income share	0.045**	0.018	0.047	-0.013
	(0.019)	(0.023)	(0.036)	(0.042)
Imperfectly informed		-0.033**		-
		(0.014)		-
(Female income share)×(Imperfectly informed)		0.073*		0.198***
		(0.037)		(0.075)
Couple fixed effect	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N observations	4459	4459	4459	4459
N couples	847	847	847	847
R-squared	0.03	0.03	0.34	0.34

Notes: This table shows the regression coefficients of female consumption share on female income share in levels. In all columns, we include year dummies, education dummies, and age of each partner as control variables. We include couple fixed effects in columns (3), and (4). Robust standard errors clustered at the couple level are reported in parentheses. $^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01.

We further investigate the relationship between income and consumption shares using a regression framework. Table 5 displays two sets of results. Columns (1) and (3) show the baseline relationship between the female income share and the female consumption share. Columns (2) and (4) show results when the female income share is interacted with the information sharing regime. Each set contains two specifications: a regression with couple-level controls and year fixed effects, and a regression that also includes couple fixed effects and is therefore identified using variation in relative consumption shares over time in a given couple.

Across the full sample, a one-percentage-point increase in the female income share is associated with a 0.05 percentage-point increase in the female consumption share

(Column 1). This is relationship is driven entirely by imperfectly informed couples, for whom the corresponding increase is 0.09 percentage points (Column 2).[14] In contrast, for fully-informed couples, the coefficient for the relationship between relative income and relative consumption is small and statistically indistinguishable from zero.

Adding couple fixed effects confirms the central role of information frictions in shaping intra-couple risk sharing. For the whole sample, changes in the female income share over time are not significantly related to changes in the female consumption share (Column 3). However, as Column 4 shows, for imperfectly informed couples, a one-percentage-point increase in the female income share is associated with a 0.19 percentage-point increase in the female consumption share. For fully-informed couples, once again the estimated coefficient is close to zero and insignificant. These findings confirm that risk sharing is incomplete among Dutch couples. The differential findings by information-sharing regimes suggest that private information is the reason for the lack of (full) insurance.

We also examine how imperfectly informed couples differ from those that are fully informed in terms of observable characteristics. Table 6 shows that imperfectly informed couples are younger and less likely to be married and to have children. Consistent with this, they are also more likely to hold separate bank account. Imperfectly informed couples are also more likely to be self-employed, another plausible source of imperfect information given the absence of a regular paycheck.

4.1 Robustness

Our results are robust to several potential concerns. First, our main specification excludes medical expenditures from our measure of private goods as they are arguably driven by health shocks and less related to bargaining power in the household. Since some of the previous literature includes medical expenditures in the measurement of private goods, we show in Appendix E.1 that our results are robust to this modification. Second, one might be concerned about measurement error due to respondents' limited recollection of expenditures over the year. Since the questionnaire also includes questions on public expenditures and asks these separately

[14] Calculated as 0.073 + 0.018.

Table 6: Summary Statistics by Couple Type

	Perfectly Informed Couples:				
	Yes		No		
	Mean	Obs.	Mean	Obs.	P-val. diff.
Female year of birth	1958	514	1968	333	0.00
Male year of birth	1956	514	1965	333	0.00
% who only own a joint bank account	61.7	514	32.4	333	0.00
% self-employed	6.9	510	12.4	330	0.01
% of females with college degree	28.2	514	36.9	333	0.01
% of males with college degree	38.1	514	42.9	333	0.16
% married	93.0	514	79.0	333	0.00
Has a child	85.7	503	77.6	322	0.00
# of children	1.9	503	1.7	322	0.04
Household income in euros	3422	498	3736	318	0.00
Female income share	30.3	498	32.1	317	0.17
Household consumption	578.8	364	577.2	206	0.95
Female consumption share	50.7	364	49.6	206	0.46

Notes: This table shows 2019 summary statistics of couples depending on whether they are imperfectly informed. The last column shows the p-values of the differences between the two group means. Differences in the number of observations are mostly due to differences in module response rates.

to both partners, reporting problems become visible when partners report different amounts of public expenditures. Appendix E.2 shows that such a mismatch occurs, but also that for most couples reports about public goods are close to the diagonal. To explore the robustness of our results to such misreporting, we exclude the 10 percent of couple-year observations with the largest mismatch on the public good reporting in our analysis, based on the assumption that misreporting public expenditures is indicative of misreporting private expenditures also. Results are robust to excluding these observations. A final concern may be that asking questions about hiding income and expenditures raises the salience of private information and subsequently changes people's behavior. To address this issue, we also show

that results are robust to including only data up until 2019, the year we had asked the questions about information sharing. See Appendix E.3 for details.

4.2 Private Information versus Limited Commitment

Table 7: Relationship between Consumption Share and Income Share, including Commitment

	Female consumption share					
Proxy for commitment	Has a child (2019)		# of children (2019)		Married (2019)	
	(1)	(2)	(3)	(4)	(5)	(6)
Female income share	0.118	0.026	0.043	-0.027	0.107	-0.029
	(0.096)	(0.101)	(0.076)	(0.075)	(0.090)	(0.093)
(Female income share)		0.186**		0.196**		0.201**
×(Imperfectly informed)		(0.082)		(0.079)		(0.078)
(Female income share)	-0.094	-0.048	-0.002	0.005	-0.068	0.017
×(Proxy for commitment)	(0.104)	(0.101)	(0.034)	(0.032)	(0.099)	(0.094)
Couple fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N observations	4387	4387	4387	4387	4459	4459
N couples	825	825	825	825	847	847
R-squared	0.33	0.33	0.33	0.33	0.34	0.34

Notes: This table shows the regression coefficients of female consumption share on female income share in levels. In all columns, we include year dummies, education dummies, age of each partner as control variables, and couple fixed effects. Robust standard errors clustered at the couple level are reported in parentheses. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$.

Recent contributions that model imperfect insurance in the family have emphasized limited commitment frictions (Mazzocco 2007; Voena 2015; Lise and Yamada 2019). In limited commitment models, changes in relative income affect outside options, which changes implicit bargaining weights and hence consumption shares. A potential concern about our findings is that, rather than capturing information asymmetries, the answers to our information questions may proxy the degree of commitment in couples. In other words, committed couples may share a lot of information,

while private information may be more prevalent among less committed ones. To examine this possibility, we introduce several proxies for limited commitment in our empirical analysis. In particular, we use an indicator for whether the couple has a child, the number of children, and whether the couple is married to proxy for the degree of commitment. These commitment proxies are at least weakly related to the information regime. As Table 6 shows, more informed couples are somewhat more likely to have a child (86 versus 78 percent), are more likely to be married (93 versus 79 percent) and on average have slightly more children (1.9 versus 1.7). We run separate regressions for each of these proxies, where each regression contains the proxy as an additional control and an interaction term between the female income share and the commitment proxy.

The results of this analysis are reported in Table 7. Our results on the impact of private information frictions turn out to be robust to controlling for the degree of commitment. For imperfectly informed couples, a one-percentage-point increase in the female income share over time is associated with an additional 0.18 to 0.2 percentage-point increase in the female consumption share, which is the same order of magnitude as our main result (column 4 in Table 5). Interestingly, the coefficients on the interaction term with the commitment indicator are small and statistically indistinguishable from zero in all cases. Hence, the results suggest that private information frictions rather than limited commitment frictions are the primary source of limited consumption insurance in our sample.

5 Conclusion

Social historians have long pointed to the central role of information frictions in family life. More recently, a vibrant literature in development economics has confirmed that private information is a key driver of family decisions in low-income countries. In this paper, we ask whether information frictions also matter for risk sharing among couples in a high-income setting.

Our analysis builds on a model of constrained-efficient insurance in a household in which one spouse has private information about their income and access to hidden consumption. We use a mechanism-design approach to show how the constrained-efficient allocation trades off risk sharing against incentive compatibility. The central prediction of the model is that there is a positive relationship between income

shares and consumption shares; intuitively, the privately informed spouse is rewarded for revealing more income with a larger consumption share. We also develop an extension in which constrained efficiency does not require full revelation. In this setting, there is private information about both income and hidden consumption opportunities. The constrained-efficient allocation is implemented in two steps: the informed spouse first decides how much income to bring home, and the resulting resources are then split between the spouses. This implementation is simpler than the revelation-principle benchmark and matches the genuine uncertainty about spousal finances documented in our survey.

We examine the predictions of our analysis using a nationally representative sample of Dutch couples from the LISS panel. Our bespoke survey module reveals that private information is pervasive: in roughly 40 percent of Dutch couples, at least one partner lacks full knowledge of the other's income. Linking these responses to panel data on individual income and consumption from 2009 to 2021, we find a positive gradient between income shares and consumption shares among imperfectly informed couples, as predicted by our model. For fully informed couples, the relationship is flat, consistent with efficient risk sharing in the absence of information frictions. This differential pattern is robust to the inclusion of couple fixed effects, and it is unchanged when controlling for standard proxies of limited commitment, such as marriage and the presence of children.

These results suggest that private information deserves a more prominent place in the study of household behavior in high-income countries. Direct evidence on spousal information asymmetries has so far come primarily from field experiments in developing economies. Expanding the empirical base—through survey instruments or experiments with private-information treatments—would open the door to studying how information frictions shape household decisions more broadly. For example, one could study how private information interacts with features such as tax filing rules and matrimonial property regimes, and what their impact is on a wider range of outcomes such as partnership formation, fertility, or divorce. Models of private information in the family may also lead to new policy implications, for example regarding requirements for spousal notification or consent when making major financial decisions. The theoretical and empirical framework developed here provides a starting point for this agenda.

References

Apedo-Amah, Marie Christine, Habiba Djebbari, and Roberta Ziparo. 2025. "Communication and Production in the Family Farm: Theory and Evidence from Rural Togo." Forthcoming, Economic Development and Cultural Change.

Armand, Alex, Orazio Attanasio, Pedro Carneiro, and Valérie Lechene. 2020. "The Effect of Gender-targeted Conditional Cash Transfers on Household Expenditures: Evidence from a Randomized Experiment." *The Economic Journal* 130 (631): 1875–1897.

Ashraf, Nava. 2009. "Spousal Control and Intra-Household Decision Making: An Experimental Study in the Philippines." *American Economic Review* 99 (4): 1245–1277.

Ashraf, Nava, Maxim Bakhtin, Erica Field, Alessandra Voena, and Roberta Ziparo. 2025. "Gendered Spheres of Learning and Household Decision-Making over Fertility." Forthcoming, Review of Economic Studies.

Ashraf, Nava, Erica Field, and Jean Lee. 2014. "Household Bargaining and Excess Fertility: An Experimental Study in Zambia." *American Economic Review* 104 (7): 2210–2237.

Attanasio, Orazio, and Sonya Krutikova. 2020. "Consumption Insurance in Networks with Asymmetric Information: Evidence from Tanzania." *Journal of the European Economic Association* 18 (4): 1589–1618.

Attanasio, Orazio, and Valérie Lechene. 2002. "Tests of Income Pooling in Household Decisions." *Review of Economic Dynamics* 5 (4): 720–748.

Bloch, Francis, and Vijayendra Rao. 2002. "Terror as a Bargaining Instrument: A Case Study of Dowry Violence in Rural India." *American Economic Review* 92 (4): 1029–1043.

Blundell, Richard, Pierre-André Chiappori, and Costas Meghir. 2005. "Collective Labor Supply with Children." *Journal of Political Economy* 113 (6): 1277–1306.

Buchmann, Nina, Pascaline Dupas, and Roberta Ziparo. 2025. "The Good Wife? Reputation Dynamics and Financial Decision-Making Inside the Household." *American Economic Review* 115 (2): 525–570.

Cao, Zhi, Arthur Lewbel, Wenchao Li, and Junjian Yi. 2024. "Collective Behavior with Information Asymmetry." Boston College Working Papers in Economics 1070.

Carranza, Eliana, Aletheia Donald, Florian Grosset-Touba, and Supreet Kaur. 2025. "The Social Tax: Redistributive Pressure and Labor Supply." *Econometrica* 93 (6): 2273–2308.

Castilla, Carolina. 2019. "What's Yours Is Mine, and What's Mine Is Mine: Bargaining Power and Income Concealing between Spouses in India." *Journal of Development Economics* 137:125–140.

Castilla, Carolina, and Thomas Walker. 2013. "Is Ignorance Bliss? the Effect of Asymmetric Information between Spouses on Intra-household Allocations." *The American Economic Review Papers and Proceedings* 103 (3): 263–268.

Cherchye, Laurens, Thomas Demuynck, Bram De Rock, and Frederic Vermeulen. 2017. "Household Consumption When the Marriage Is Stable." *American Economic Review* 107 (6): 1507–34.

Cherchye, Laurens, Bram De Rock, and Frederic Vermeulen. 2012. "Married with Children: A Collective Labor Supply Model with Detailed Time Use and Intrahousehold Expenditure Information." *American Economic Review* 102 (7): 3377–3405.

Chiappori, Pierre-André. 1992. "Collective Labor Supply and Welfare." *Journal of Political Economy* 100 (3): 437–467.

Delavande, Adeline, Gizem Koşar, and Basit Zafar. 2025. "Information Spillovers within Couples: Evidence from a Sequential Survey of Spouses." Federal Reserve Bank of New York, Staff Reports, No. 1154.

Doepke, Matthias, and Fabian Kindermann. 2019. "Bargaining over Babies: Theory, Evidence, and Policy Implications." *American Economic Review* 109 (9): 3264–3306.

Doepke, Matthias, and Michèle Tertilt. 2016. "Families in Macroeconomics." Chapter 23 of *Handbook of Macroeconomics*, edited by John B. Taylor and Harald Uhlig, Volume 2. Elsevier.

Doval, Laura, and Vasiliki Skreta. 2022. "Mechanism Design with Limited Commitment." *Econometrica* 90 (4): 1463–1500.

Dubois, Pierre, and Ethan A Ligon. 2011. "Incentives and Nutrition for Rotten Kids: Intrahousehold Food Allocation in the Philippines." Unpublished Manuscript, UC Berkeley.

Fehr, Dietmar, Johanna Mollerstrom, and Ricardo Perez-Truglia. 2024. "Listen to Her: Gender Differences in Information Diffusion within the Household." *Journal of Public Economics* 239:105213.

Fiala, Nathan, and Xi He. 2017. "Unitary or Noncooperative Intrahousehold Model? Evidence from Couples in Uganda." *World Bank Economic Review* 30:S77–S85.

Fon, Alexandre. 2021. "Asymmetric Information in Households, with an Application to Bangladesh." Unpublished Manuscript, UCLA.

Golosov, Mikhail, Aleh Tsyvinski, and Iván Werning. 2007. "New Dynamic Public Finance: A User's Guide." In *NBER Macroeconomics Annual 2006*, Volume 21, 317–388. MIT Press.

Hoel, Jessica B. 2015. "Heterogeneous Households: A Within-Subject Test of Asymmetric Information between Spouses in Kenya." *Journal of Economic Behavior and Organization* 118:123–135.

Humphries, Jane, and Ryah Thomas. 2023. "'The Best Job in the World': Breadwinning and the Capture of Household Labor in Nineteenth and Early Twentieth-century British Coalmining." *Feminist Economics* 29 (1): 97–140.

Hübner, Manfred. 1988. *Zwischen Alkohol Und Abstinenz: Trinksitten Und Alkoholfrage Im Deutschen Proletariat Bis 1914*. Schriftenreihe Geschichte. Berlin: Dietz Verlag.

Joseph, Thomas, Yaw Nyarko, and Shing-Yi Wang. 2018. "Asymmetric Information and Remittances: Evidence from Matched Administrative Data." *American Economic Journal: Applied Economics* 10 (2): 58–100.

Kebede, Bereket, Marcela Tarazona, Alistair Munro, and Arjan Verschoora. 2013. "Intra-household Efficiency: An Experimental Study from Ethiopia." *Journal of African Economies* 23 (1): 105–150.

Lise, Jeremy, and Ken Yamada. 2019. "Household Sharing and Commitment: Evidence from Panel Data on Individual Expenditures and Time Use." *Review of Economic Studies* 86 (5): 2184–2219.

Mazzocco, Maurizio. 2007. "Household Intertemporal Behaviour: A Collective Characterization and a Test of Commitment." *Review of Economic Studies* 74 (3): 857–895.

Mirrlees, James A. 1971. "An Exploration in the Theory of Optimum Income Taxation." *Review of Economic Studies* 38 (2): 175–208.

Munro, A. Alistair, Bereket Kebede, Marcela Tarazona-Gomez, and Arjan Verschoor. 2014. "Autonomy and Efficiency. an Experiment on Household Decisions in Two Regions of India." *Journal of The Japanese and International Economies* 33, no. 114-133.

Pahl, Jan. 1980. "Patterns of Money Management within Marriage." *Journal of Social Policy* 9 (3): 313–335.

Robinson, Jonathan. 2012. "Limited Insurance within the Household: Evidence from a Field Experiment in Kenya." *American Economic Journal: Applied Economics* 4 (4): 140–164.

Schaner, Simone G. 2015. "Do Opposites Detract? Intrahousehold Preference Heterogeneity and Inefficient Strategic Savings." *American Economic Journal: Applied Economics* 7 (2): 135–174.

Scherpenzeel, Annette C., and Marcel Das. 2010. "'True' Longitudinal and Probability-Based Internet Panels: Evidence From the Netherlands." Chapter 4 of *Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies*, edited by Marcel Das, Peter Ester, and Lars Kaczmirek. Boca Raton: Taylor & Francis.

Seccombe, Wally. 1993. *Weathering the Storm: Working-class Families from the Industrial Revolution to the Fertility Decline*. New edition. Verso. Originally from University of Virginia. Digitized May 15, 2008.

Theloudis, Alexandros, Jorge Velilla, Pierre-André Chiappori, J. Ignacio Giménez-Nadal, and José Alberto Molina. 2025. "Commitment and the Dynamics of Household Labour Supply." *The Economic Journal* 135 (665): 354–386.

Thomas, Jonathan, and Tim Worrall. 1990. "Income Fluctuation and Asymmetric Information: An Example of a Repeated Principal-agent Problem." *Journal of Economic Theory* 51 (2): 367–390.

Townsend, Peter. 1957. *The Family Life of Old People: An Inquiry in East London*. London: Routledge & Kegan Paul.

Voena, Alessandra. 2015. "Yours, Mine, and Ours: Do Divorce Laws Affect the Intertemporal Behavior of Married Couples?" *American Economic Review* 105 (8): 2295–2332.

von Gaudecker, Hans-Martin, Christian Zimpelmann, Moritz Mendel, Bettina Siflinger, Lena Janys, Jürgen Maurer, Egbert Jongen, Radost Holler, Renata Abikeyeva, and Felipe Augusto Azuero Mutis. 2020. *CoViD-19 Impact Lab Questionnaire Documentation*. Zenodo. DOI: 10.5281/zenodo.4616813.

Walther, Selma. 2017. "Moral Hazard in Marriage: The Use of Domestic Labor as an Incentive Device." *Review of Economics of the Household* 15 (2): 357–382.

Zhang, Sally. 2024. "Hidden in Plain Sight: Asymmetric Information and Hidden Income within the Household." Unpublished Manuscript, Tufts University.

Zimpelmann, Christian, Hans-Martin von Gaudecker, Radost Holler, Lena Janys, and Bettina Siflinger. 2021. "Hours and Income Dynamics during the Covid-19 Pandemic: The Case of the Netherlands." *Labour Economics* 73:102055.

APPENDIX

A Proofs for Propositions

Proof of Proposition 2: For part 1, from the definition of $\Gamma(y_f)$ in (10) and the optimality condition (14), it immediately follows that $\Gamma(\underline{y}_f) = \Gamma(\overline{y}_f) = 0$. From (16) we then get the first part of the proposition: hidden versus observable consumption is undistorted at the boundaries.

For part 2, from the truth-telling constraint (9) we have:

$$\frac{\tilde{c}(y_f)}{c_f(y_f)} = \phi \frac{1 - \tilde{c}'(y_f)}{c_f'(y_f)}.$$

From the resource constraint $c_f(y_f) + \tilde{c}_f(y_f) + c_m(y_f) = y_f + y_m$, we have that $c_f'(y_f) + \tilde{c}_f'(y_f) + c_m'(y_f) = 1$, so that:

$$\frac{\tilde{c}(y_f)}{c_f(y_f)} = \phi \frac{c_f'(y_f) + c_m'(y_f)}{c_f'(y_f)} > \phi,$$

where the inequality follows because optimal risk sharing requires $c_f'(y_f) > 0$ and $c_m'(y_f) > 0$ on the interior. While it would be feasible to assign constant consumption to one spouse for a range of y_f, doing so is never optimal.

Turning to part 3, from (15), the ratio c_f/c_m is given by:

$$\frac{c_f}{c_m} = \frac{\mu + \lambda_2}{1 - \mu}.$$

We therefore need to establish that λ_2 is increasing in y_f. Consider first the possibility that λ_2 might be strictly decreasing on some interval $y_f \in [a, b]$. We can now make the following variational argument. Holding $c_m(y_f)$ constant, we adjust the path for the wife's consumption to a counterfactual path $c_{f,\text{var}}(y_f)$, $\tilde{c}_{f,\text{var}}(y_f)$ such that $c_{f,\text{var}}(y_f) = c_m(y_f)\ c_f(a)/c_m(a)$ starting from $y_f = a + \epsilon$ for a small ϵ, and then increasing until $c_{f,\text{var}}(y_f)$ reaches $c_{f,\text{var}}(y_f) = c_f(b) - \epsilon$. The alternative path for hidden consumption follows from the budget constraint, $\tilde{c}_{f,\text{var}}(y_f) = y_f - c_m(y_f) - c_{f,\text{var}}(y_f)$. Outside of this interval, the counterfactual path is connected to the original one to satisfy smooth pasting. This counterfactual path relaxes truth telling constraints because it increases the wife's observable consumption (i.e., observable consumption

is taxed at a lower rate), and at the same time it increases utility, because the wife's initial consumption path is distorted towards higher hidden consumption, implying that a movement towards higher visible consumption for fixed total consumption increases utility. We conclude that the alternative path improves the allocation, implying that λ_2 cannot decrease.

To see that λ_2 actually has to increase, we note that $\tilde{c}_f/c_f > \phi$ (as required by part 2.) implies that $\Gamma > 0$ in the interior, which in turn, given (10), means that λ_2 has to be positive for high y_f. Given that λ_2 cannot decrease and, given (14), equals zero in expectation, λ_2 has to start out negative and thus increase in y_f. □

B Model Extensions

B.1 Constrained-Efficient Maximization Problem with Income and Preference Shocks

We consider a variant of our baseline model in which the utility weight $\phi \geq 0$ attached to hidden consumption $\tilde{c}_f$ is stochastic and private information for the wife. Specifically, $\phi \in \{\underline{\phi}, \overline{\phi}\}$, with $0 \leq \underline{\phi} < \overline{\phi}$, with $p \geq 0$ the probability of the low preference shock and $1 - p > 0$ the probability of the high shock. The distribution of the wife's income shock is given by $F(y_f|\phi)$. The choice objects for the constrained-efficient maximization problem using the revelation principle are $c_f(y_f, \phi)$, $\tilde{c}_f(y_f, \phi)$, and $c_m(y_f, \phi)$, meaning that the allocation is based on truthful reports of both y_f and ϕ. The constrained-efficient maximization problem can now be written as follows:

$$\max \Bigg\{ p \int_{\underline{y}_f}^{\overline{y}_f} \left[\mu \left(\log(c_f(y_f, \underline{\phi})) + \underline{\phi} \log(\tilde{c}_f(y_f, \underline{\phi}))\right) + (1-\mu) \left(\log(c_m(y_f, \underline{\phi}))\right)\right] f(y_f|\underline{\phi}) \, \mathrm{d}y_f$$
$$(1-p) \int_{\underline{y}_f}^{\overline{y}_f} \left[\mu \left(\log(c_f(y_f, \overline{\phi})) + \overline{\phi} \log(\tilde{c}_f(y_f, \overline{\phi}))\right) + (1-\mu) \left(\log(c_m(y_f, \overline{\phi}))\right)\right] f(y_f|\overline{\phi}) \, \mathrm{d}y_f \Bigg\}$$

subject to the budget constraints:

$$c_f(y_f, \phi) + \tilde{c}_f(y_f, \phi) + c_m(y_f, \phi) = y_f + y_m \quad \forall y_f, \phi$$

and the truth-telling constraints:

$$\log(c_f(y_f, \phi)) + \phi \log(\tilde{c}_f(y_f, \phi)) \geq \log(c_f(\tilde{y}_f, \tilde{\phi})) + \phi \log(\tilde{c}_f(\tilde{y}_f, \tilde{\phi}) + y_f - \tilde{y}_f) \quad \forall \tilde{y}_f, \tilde{\phi} \in \{\underline{\phi}, \overline{\phi}\}.$$

B.2 Public Goods

We consider an extension of our baseline model in which the spouses also care about a public good C. The utility functions are given by:

$$u_m(c_m, C) = \log(c_m) + \psi \log(C), \tag{17}$$

$$u_f(c_f, \tilde{c}_f, C) = \log(c_f) + \phi \log(\tilde{c}_f) + \psi \log(C). \tag{18}$$

Here $\psi \geq 0$ parametrizes the utility derived from the public good. As before, the husband has a fixed income y_m, while the wife's income is distributed according to distribution function $F(y_f)$ on the interval $[\underline{y}_f, \overline{y}_f]$, with density function $f(y_f)$.

The constrained-efficient allocation is characterized maximizing weighted welfare:

$$\max \Big\{ \mathrm{E} \big[\mu \left(\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) + \psi \log(C(y_f)) \right) \\ + (1-\mu) \left(\log(c_m(y_f)) + \psi \log(C(y_f)) \right) \big] \Big\}$$

subject to the resource constraint

$$c_f(y_f) + \tilde{c}_f(y_f) + c_m(y_f) + C(y_f) = y_f + y_m$$

and subject to truth-telling constraints that require that for any amount of reported income $\tilde{y}_f \in [\underline{y}_f, \overline{y}_f]$, it is weakly optimal to tell the truth rather than report a different income:

$$\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) + \psi \log(C(y_f)) \\ \geq \log(c_f(\tilde{y}_f)) + \phi \log(\tilde{c}_f(\tilde{y}_f) + y_f - \tilde{y}_f) + \psi \log(C(\tilde{y}_f)).$$

The marginal truth-telling constraint is given by:

$$\frac{c_f'(y_f)}{c_f(y_f)} + \psi \frac{C'(y_f)}{C(y_f)} = \phi \frac{1 - \tilde{c}_f'(y_f)}{\tilde{c}_f(y_f)}.$$

Here the left-hand side is the marginal loss from a lower assignment of observable and public consumption when less income is reported, and on the right-hand side is the marginal gain from lying in terms of more utility from hidden consumption.

Integrating this constraint gives

$$\log(c_f(y_f)) + \phi \log(\tilde{c}_f(y_f)) + \psi \log(C(y_f)) = U_{f,0} + \phi \int_{\underline{y}_f}^{y_f} \frac{1}{\tilde{c}_f(x)}\, dx$$

with $U_{f,0} = \log(c_f(\underline{y}_f)) + \phi \log(\tilde{c}_f(\underline{y}_f)) + \psi \log(C(\underline{y}_f))$. The constrained-efficient problem is then characterized by the following Lagrangian:

$$\begin{aligned} L = &\int_{\underline{y}_f}^{\overline{y}_f} \left(\mu \left(\log(c_f) + \phi \log(\tilde{c}_f)\right) + (1-\mu)\left(\log(c_m)\right) + \psi \log(C)\right) f(y_f)\, \mathrm{d}y_f \\ &\qquad - \int_{\underline{y}_f}^{\overline{y}_f} \lambda_1 \left(c_f + \tilde{c}_f + c_m + C - y_f - y_m\right) f(y_f)\, \mathrm{d}y_f \\ &+ \int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 \left(\log(c_f) + \phi \log(\tilde{c}_f) + \psi \log(C) - U_{f,0} - \phi \int_{\underline{y}_f}^{y_f} \frac{1}{\tilde{c}_f(x)}\, \mathrm{d}x \right) f(y_f)\, \mathrm{d}y_f \end{aligned}$$

Changing the order of integration in the integral term, this can be written as:

$$\begin{aligned} L = &\int_{\underline{y}_f}^{\overline{y}_f} \left(\mu \left(\log(c_f) + \phi \log(\tilde{c}_f)\right) + (1-\mu)\left(\log(c_m)\right) + \psi \log(C)\right) f(y_f)\, \mathrm{d}y_f \\ &\qquad - \int_{\underline{y}_f}^{\overline{y}_f} \lambda_1 \left(c_f + \tilde{c}_f + c_m + C - y_f - y_m\right) f(y_f)\, \mathrm{d}y_f \\ &\qquad + \int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 \left(\log(c_f) + \phi \log(\tilde{c}_f) + \psi \log(C) - U_{f,0} \right) f(y_f)\, \mathrm{d}y_f \\ &\qquad\qquad - \phi \int_{\underline{y}_f}^{\overline{y}_f} \left(\frac{1}{\tilde{c}_f} \Gamma(y_f) \right) \mathrm{d}y_f, \end{aligned}$$

where, as before:

$$\Gamma(y_f) = \int_{y_f}^{\overline{y}_f} \lambda_2(x) f(x)\, \mathrm{d}x.$$

Note that $\Gamma'(y_f) = -\lambda_2(y_f) f(y_f)$ and $\Gamma(\overline{y}_f) = 0$. The first-order conditions for c_f, c_m,

$\tilde{c}_f$, C, and $U_{f,0}$ are:

$$\begin{aligned}
\frac{\mu}{c_f} &= \lambda_1 - \lambda_2 \frac{1}{c_f}, \\
\frac{1-\mu}{c_m} &= \lambda_1, \\
\frac{\mu\phi}{\tilde{c}_f} &= \lambda_1 - \lambda_2 \frac{\phi}{\tilde{c}_f} - \frac{\phi}{(f(y_f)\tilde{c}_f^2}\Gamma, \\
\frac{\psi}{C} &= \lambda_1 - \lambda_2 \frac{\psi}{C}, \\
\int_{\underline{y}_f}^{\overline{y}_f} \lambda_2 f(y_f)\,\mathrm{d}y_f &= 0.
\end{aligned}$$

The first four conditions can be solved for λ_1:

$$\begin{aligned}
\frac{\mu + \lambda_2}{c_f} &= \lambda_1, \\
\frac{1-\mu}{c_m} &= \lambda_1, \\
\phi\frac{\mu + \lambda_2 + \Gamma f(y_f)^{-}1\tilde{c}^{-1}}{\tilde{c}_f} &= \lambda_1, \\
\frac{\psi(1+\lambda_2)}{C} &= \lambda_1,
\end{aligned}$$

This system of equations is similar to the conditions that we got for the case without public goods. The ratio of c_f and c_m is again given by:

$$\frac{c_f}{c_m} = \frac{\mu + \lambda_2}{1-\mu}.$$

Hence, if the truth-telling constraint is binding ($\lambda_2 \neq 0$), the ratio of the spouses' consumption is distorted from the first best in the same way as before. Taking the ratio of the conditions for c_f and $\tilde{c}_f$ gives:

$$\frac{\tilde{c}_f}{c_f} = \phi\frac{\mu + \lambda_2 + \Gamma f(y_f)^{-1}\tilde{c}_f^{-1}}{\mu + \lambda_2},$$

which is also unchanged from the case without public goods. Considering the ratio

of c_f and C, we get:

$$\frac{c_f}{C} = \frac{\mu + \lambda_2}{\psi(1 + \lambda_2)}.$$

Given that $\mu < 1$, this ratio is increasing in λ_2. Both c_f and C are increasing relative to c_m when truth-telling constraints become more binding, but c_f increases at a faster rate, because c_f generates utility exclusively for the spouse subject to the truth-telling conditions.

Overall, we see that the model with public goods leads to the same qualitative implications as the model with $\psi = 0$.

C Data Details

The LISS (Longitudinal Internet Studies for the Social Sciences) Core Study is a longitudinal study gathered by CentERdata (Scherpenzeel and Das 2010) that started in 2007. The primary panel comprises about 5,000 households and is representative of the Dutch population. It is repeated yearly and covers various socioeconomic topics to describe the living conditions of the interviewees.

In this paper, we use two of the regular modules: (1) "Background Variables," which includes information on gender, age, education, income, and family structure. All interviewees provide their information upon joining the panel and are prompted monthly to update any changes. (2) "Family and Household," which includes information on family structure, specifically detailing the date couples formed or married and their current relationship status. In addition, we use two additional modules: one on information sharing and finances and a second one on time use and consumption.

In 2019, we introduced a module on information sharing and finances within couples. Both partners from 931 different-sex couples completed our online questionnaire. An additional 1,376 individuals participated without responses from their partners and are excluded since the information status of these couples cannot be determined. This unique dataset, comprising around twenty questions, provides detailed insights into partners' knowledge of each other's finances, debts, and perspectives on financial management, which we analyze throughout this paper.

We also use data from the Time Use and Consumption module. The initial waves of this survey were designed and analyzed by Cherchye, De Rock, and Vermeulen

(2012) and Cherchye et al. (2017). In collaboration with a larger team, we expanded the survey with four additional waves between 2019 and 2021. Responses from the Covid period were analyzed by Zimpelmann et al. (2021), with all questions documented in von Gaudecker et al. (2020). This module includes information on private expenditures, including food and drinks, as well as clothing, leisure, and personal care that Table A1 presents. The consumption modules provide detailed assignable (nondurable) expenditure data at both the individual and household levels.

Combining all those modules, and after trimming the bottom and top 1 percent of private expenditure, our final sample comprises 4,459 year-couple observations and 847 unique different-sex couples whose partners answered our private information module and at least one of the time use and consumption modules. In each wave, between 410 and 570 couples answered our survey. Table A2 describes our final sample in each survey wave.

C.1 Data Construction

Below, we provide further details on the construction of the main variables we use for the analysis.

Fully informed couple status: Based on the 2019 LISS module on private information, we define a couple as fully informed if both partners respond with "I strongly agree" to each of the following statements: "I know how much my partner earns (including retirement income)" and "My partner knows how much I earn (including retirement income)." Couples failing to meet this criterion are classified as *imperfectly informed*.

Income shares: Using data from the Background Variables module, taken in the same year and month as the Time Use and Consumption module, we calculate the female income share by dividing the wife's imputed personal net monthly income in Euros (`nettoink_f`) by the household's imputed net monthly income in Euros (`nettohh_f`). Both `nettoink_f` and `nettohh_f` are pre-existing variables in the dataset.

Consumption shares: Using the Time Use and Consumption module, we first compute the private consumption of both couple partners. As a general rule, private consumption is the sum of private expenses in food, cigarettes, clothing, care, leisure,

Table A1: Consumption Module

Survey Wave	**Questions on Private Consumption**
2009 2010 2012	For each type of expenditure, please indicate how many euros you spend on this per month, on average. Consider as reference period the past twelve months. *Note: This only concerns expenditure for your own personal consumption.* - a - food and drinks outside the house (restaurant, café, company canteen, etc., but NO restaurant bills for the family) - b - cigarettes and other tobacco products - c - clothing (clothes, shoes, jewelry, etc.) - d - personal care products and services (hair care, body care, hairdresser, manicure, etc., but NO medical care) - e - leisure time expenditure (film, theater, hobbies, sports activities, photography, books, CDs/DVDs, expenditure during daytrips or travel without family, etc. - f - (further)schooling (expenditure on courses, enrolment fees, etc.) - g - donations and gifts (for family, friends, charity, etc.) - h - other
2015 2017	Please indicate how many euros you spent on average per month on other personal expenditures for yourself in the past 12 months? For example, you can think of food and drinks outside the house, cigarettes and other tobacco products, clothing, personal care products, and services, leisure time expenditure (film, theater, hobbies, sports activities, photography, books, etc.), (further)schooling and donation or gifts.
2019 2020 2020 2021	Can you indicate for each type of expenditure how many euros are spent on yourself on average per month? - a- eating indoors (food, drinks, candy, etc.) - b - eating outdoors (restaurants, canteen, takeaway, etc.) - c - clothing - d - electronic devices, software and subscriptions (laptops, computers, software, smartphones, televisions, streaming providers, TV channels, etc.) [2020, 2020] - e - other expenditures on leisure time (sports activities, hobbies, magazine subscriptions, TV/Film/Gaming services, going out, etc.,) [2021] - f - other expenditures
	Medical Expenditure
2009 2010 2012	For each type of expenditure, please indicate how many euros you spend on this per month, on average. Consider as reference period the past twelve months. Note: This only concerns expenditure for your own personal consumption. - medical care and health costs NOT covered by insurance (medicines, doctor, dentist, hospital bills, maternity care, spectacles, hearing aids, etc.)
2015 2017	Please fill out how many euros you spend per month on average on medical care health costs that are NOT covered by insurance (medicines, doctor, dentist, hospital bills, maternity care, spectacles, hearing aids, etc.)? Consider as reference period the past twelve months.
2019 2020 2020 2021	Can you indicate for each type of expenditure how many euros are spent on yourself on average per month? - medical care and health costs NOT covered by insurance (medicines, physiotherapy, dentist, hospital bills, maternity care, spectacles, hearing aids, etc.)

Notes: This table presents the expenditure module questions on private consumption for each survey wave.

Table A2: Data Description

Survey wave	N couples	% imperfectly informed
Sept. 2009	410	34%
Sept. 2010	439	34%
Oct. 2012	482	33%
Mar. 2015	537	36%
Jul. 2017	533	37%
Nov. 2019	570	36%
Apr. 2020	463	32%
Nov. 2020	517	33%
Nov. 2021	508	33%
N observations	4,459	34%

Notes: This table shows the number of couples in each survey wave and the share of imperfectly informed couples.

schooling, donations, and others. We do not include "medical care and health costs not covered by insurance" in the main analysis but add it as a robustness check. Questions slightly vary across survey waves. Table A1 presents the details. We calculate total household private consumption by adding up the private consumption of each couple member. Consumption shares are then defined as the ratio of each member's private consumption to the total household private consumption.

D Additional Results

Table A3 provides additional details on within couple answers.

Table A3: How Correlated is Private Information Between Partners?

		Income		Debts		Expenses	
Panel A: I am perfectly informed							
		Husband					
		0	1	0	1	0	1
Wife	0	9.1	15.3	3.9	9.7	3.7	6.3
	1	10.0	65.6	5.9	80.6	8.1	82.0
Panel B: My partner is perfectly informed							
		Husband					
		0	1	0	1	0	1
Wife	0	7.6	11.5	3.8	8.6	3.7	8.1
	1	13.4	67.5	6.7	81.0	7.0	81.3

Notes: This table shows the distribution of answers within couples. 1 corresponds to the answer *strongly agree* to the question "I know how much my partner earns (including retirement income)" in Panel A, or to " My partner knows how much I earn (including retirement income)" in Panel B. 0 corresponds to the other answers, denoting imperfect information. N = 931.

Tables A4 to A6 correspond to Tables 1, 3 and 4 when we restrict the sample to those couples that answered both modules.

Table A4: Share of Imperfectly Informed Couples (Percent) - Final Sample

	Imperfectly informed							Fully informed
	Couples	Individuals						
				Strongly disagree	Somewhat disagree	Not sure	Somewhat agree	Strongly agree
Income	39.3	26.9	I know	2.6	3.0	1.7	13.4	79.3
			Partner knows	1.9	2.5	1.5	13.5	80.6
Large expenses	22.4	14.0	I know	1.5	1.4	0.4	7.2	89.6
			Partner knows	1.3	1.5	0.5	7.8	89.0
Debt	20.8	12.6	I know	4.0	1.1	1.1	4.8	89.1
			Partner knows	3.8	1.4	0.9	4.4	89.4

Notes: This table shows how often couples' partners have private financial information. In the first column, a couple is imperfectly informed if at least one partner does not strongly agree that both partners know about their respective [income/debt/large expenses]. The second column presents the same statistic using only individual-level responses. The last five columns present the results for each statement separately, based on individual-level data. N = 847.

Table A5: Financial Disagreement in the Family (Percent) - Final Sample

	Couples	Individuals				
	Some financial disagreement	Some financial disagreement		No strong disagreement		
		Strongly agree	Somewhat agree	Neither	Somewhat disagree	Strongly disagree
1- Partner spends too much	10.0	0.8	4.4	9.2	10.8	74.9
2- Finance most stressful facet	12.4	1.8	5.8	8.9	9.7	73.9
3- Partner lacks financial skills	14.4	3.2	4.2	9.0	19.0	64.5
(1) or (2) or (3)	27.6					
		Very frequently	Frequently	Sometimes	Rarely	Never
Money arguments*	17.0	0.4	2.1	8.9	22.1	66.6

Notes: This table shows the share of couples (first column) and individuals (last five columns) who experience a form of financial disagreement. In the first two rows, we define a couple to experience financial disagreement if at least one of the partners does not (strongly) disagree with the following statements *Finance is one of the most stressful facets of my relationship with my partner*, *My partner spends too much money*. In the third one, we define a couple to experience financial disagreement if at least one of the partners does not (strongly) agree with the statement *My partner is competent at dealing with money and finances*. In the last row, we define a couple to experience financial disagreement if one of the partners declared in the last 12 months that they sometimes or (very) frequently argued about money. N = 847.

* This question asks about the frequency of arguments about money. Respondents may choose from: very frequently, frequently, sometimes, rarely, or never.

Table A6: Support for positive Income-Consumption Relationship: Should the person who receives an increase in income have more say in how to use it (Percent) - Final Sample

	Couples		Individuals				
	Support for positive relationship		Positive income-consumption relationship		Flat income-consumption relationship		
			Strongly agree	Somewhat agree	Neither	Somewhat disagree	Strongly disagree
Regular	15.8	If I	3.4	4.6	12.1	6.1	73.7
		If partner	3.5	5.1	12.2	7.7	66.1
Unexpected	22.8	If I	4.7	8.4	11.9	7.3	67.7
		If partner	5.1	8.6	12.5	7.7	66.1

Notes: This table shows the percentage of individuals and couples in which at least one of the partners believes that the partner who earns more income should have greater influence over how it's spent. The statements are: *If [I/my partner] receive(s) an increase in regular income (such as a wage or pension increase or starting a new job at higher pay), [I/they] should have more say on how to use the extra income than [I do/they do]* and *If [I/my partner] receive(s) an unexpected increase in income (such as a bonus payment, a lottery winning, an inheritance, temporary consulting income, or tips), [I/my partner] should have more say in how to use the extra income than [I do/my partner does].* N = 847.

E Robustness Analysis

This section contains robustness checks of Table 5.

E.1 Medical Expenditures as Private Goods

In Table A7, we show that our main results are robust to the inclusion of medical expenditures in our measure of private goods.

Table A7: Relationship between Consumption Share and Income Share, Including Medical Expenditures as Private Goods

	Female consumption share			
	(1)	(2)	(3)	(4)
Female income share	0.053***	0.036	0.055*	0.010
	(0.018)	(0.023)	(0.036)	(0.042)
Imperfectly informed		-0.023*		-
		(0.013)		-
(Female income share).(Imperfectly informed)		0.047		0.152**
		(0.037)		(0.075)
Couple fixed effect	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N observations	4459	4459	4459	4459
N couples	847	847	847	847
R-squared	0.03	0.03	0.34	0.34

Notes: This table shows the regression coefficients of female consumption share, including medical expenditures, on female income share in levels. In all columns, we include year dummies, education dummies, and age of each partner as control variables. We include couple fixed effects in columns (3), and (4). Robust standard errors clustered at the couple level are reported in parentheses. $^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01.

E.2 Removing Couples with Mismatch on Public Good Reporting

Figure A1 displays the reporting of public expenditures by both partners. Although some discrepancies exist, the majority of couples report public goods expenditures that lie close to the diagonal.

Table A8 presents results analogous to those in Table 5, excluding the 10 percent of couple-year observations with the greatest discrepancy in public good reporting. The results are robust to the exclusion of these observations.

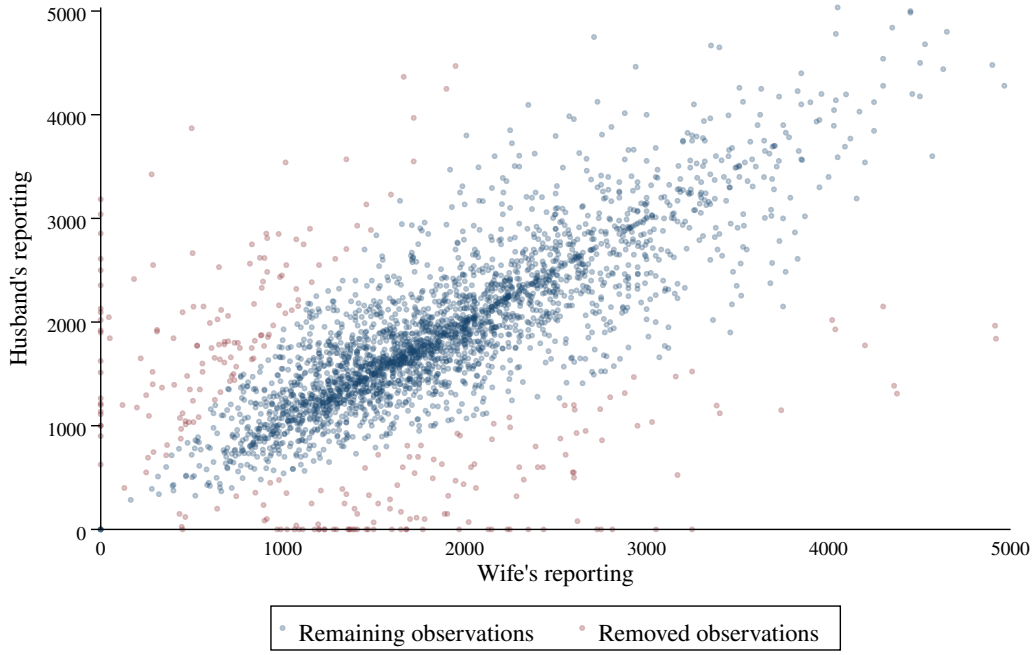


Figure A1: Public Good Reporting (euros/month)

Notes: The figure plots wives' versus husbands' public good reportings. Observations in red represent the 10 percent of couple-year observations with the largest reporting discrepancies. Those in blue represent the remaining 90 percent of observations, with a correlation between spouses' reportings of 0.94.

Table A8: Relationship between Consumption Share and Income Share, Removing Observations with Mismatch on Public Good Reporting

	Female consumption share			
	(1)	(2)	(3)	(4)
Female income share	0.037**	0.018	0.052	-0.006
	(0.019)	(0.023)	(0.036)	(0.041)
Imperfectly informed		-0.027*		-
		(0.014)		-
(Female income share).(Imperfectly informed)		0.053		0.199***
		(0.037)		(0.075)
Couple fixed effect	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N observations	4159	4159	4159	4159
N couples	840	840	840	840
R-squared	0.03	0.03	0.34	0.34

Notes: This table shows the regression coefficients of female consumption share on female income share in levels. We remove the 10 percent of couple-year observations with the highest mismatch on public good reporting from the sample. In all columns, we include year dummies, education dummies, and age of each partner as control variables. We include couple fixed effects in columns (3), and (4). Robust standard errors clustered at the couple level are reported in parentheses. $^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01.

E.3 Using data before the 2019 module on information sharing and finances within couples

Table A9 shows that the results are robust to restricting the sample to data up to and including 2019, the year in which the survey questions on financial information sharing were administered.

Table A9: Relationship between Consumption Share and Income Share, before 2019

	Female consumption share			
	(1)	(2)	(3)	(4)
Female income share	0.043	0.005	0.052	-0.053
	(0.026)	(0.032)	(0.069)	(0.077)
Imperfectly informed		-0.041**		-
		(0.019)		-
(Female income share).(Imperfectly informed)		0.105**		0.329**
		(0.051)		(0.141)
Couple fixed effect	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N observations	2401	2401	2401	2401
N couples	769	769	769	769
R-squared	0.02	0.02	0.48	0.48

Notes: This table shows the regression coefficients of female consumption share on female income share in levels. We restrict the sample to data collected before the module on information sharing and finances in couples (2019). In all columns, we include year dummies, education dummies, and age of each partner as control variables. We include couple fixed effects in columns (3), and (4). Robust standard errors clustered at the couple level are reported in parentheses. $^{*}p$ <0.1; $^{**}p$ <0.05; $^{***}p$ <0.01.