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#### **ABSTRACT**

## Inheritance Shocks and Expenditure Patterns: A Dynamic Collective Approach\*

Understanding how household decisions react to economic shocks is important for effective policy design. Using detailed individual consumption data, we investigate how household consumption responds to unexpected inheritance realizations within an intertemporal collective framework. Inheritances constitute personal assets that are not equally divided upon divorce among spouses according to matrimonial property laws, and they play the role of stochastic distribution factors affecting intra-household bargaining dynamics. Estimating a dynamic collective model, the analysis provides evidence consistent with dynamic bargaining effects. In particular, heirs immediately increase their consumption growth, while their partners experience a decline in their consumption. These findings are not driven by liquidity- or credit-constrained households, which could otherwise lead households to overreact to inheritance receipts.

JEL Classification: D12, D13, D15, D31, E21

**Keywords:** inheritances, consumption, commitment, dynamic collective

model

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#### 1 Introduction

How households respond to economic shocks is important for policy design. As a result, much of the effort from different areas of economic research in the macroeconomics and labor economics literature has focused on the transmission of economic shocks to household decisions such as consumption and labor supply (see Blundell et al. (2008), Blundell et al. (2016), or references of this literature provided in Jappelli and Pistaferri (2010) and Crawley and Theloudis (2026)). However, such household decisions can be analyzed using different models of household behavior, which are implicitly based on different assumptions. As a result, the analyses we can perform in general, and the conclusions we derive in particular, depend on the particular model adopted (Chiappori and Mazzocco, 2017).

Traditionally, household behaviors have been analyzed under the so-called unitary framework, which considers the household as a single agent that maximizes a unique utility function under a joint budget constraint.<sup>1</sup> Suppose for instance that a spouse receives an unexpected inheritance, a scenario that we examine throughout this paper. Theoretically, according to this setting and the simplest version of the life-cycle consumption model, this inheritance should shift current household expenses, assuming that households consume normal goods and inheritances were not anticipated in the past. This framework assumes that inheritances are shared equally within the household and cannot analyze intra-household issues such as whether the identity of the recipient is important for household decisions, and thus whether the inheritance receipt may modify the spouses' respective bargaining powers within the household. However, in addition to this "pure" wealth effect, inheriting can affect consumption through other channels.

In this paper we move from the unitary model of household behavior and take a collective approach to analyze the above question in an inter-temporal context. Collective household models (Apps and Rees, 1988; Chiappori, 1988, 1992) view households as economic environments in which spouses, who have their own utility functions, always reach Pareto-efficient decisions that result from an intra-household bargaining process. Nevertheless, this literature has focused almost exclusively on static formulations, ignoring inter-temporal aspects of household decisions. Several issues justify this limited research attention to model intra-household allocation in an inter-temporal context, mostly due to the strict data requirements of the dynamic setting.

One crucial issue is the identifiability of stochastic distribution factors, which play a particularly important role (Mazzocco, 2007). These should exogenously shape intra-household

<sup>&</sup>lt;sup>1</sup>Donni and Chiappori (2011), Chiappori and Mazzocco (2017), Donni and Molina (2018), Almås et al. (2023) and Donni (2026) provide surveys of different approaches for modeling household decisions.

bargaining power across periods, conditional on income and wealth effects, meaning that they must be both assignable within the household and time-varying. In this context, recent contributions to this literature have proposed realized wage shocks (Lise and Yamada, 2019; Theloudis et al., 2025) or alimony payments (Chiappori et al., 2017; Foerster, 2025; Toriyabe, 2025) as stochastic distribution factors that influence household decisions only through changes on the relative bargaining power of spouses.

From a collective perspective, inheritances are individual assets according to current matrimonial property laws (Blau and Goodstein, 2016), not equally shared among spouses in the event of divorce, so that inheriting may favor the distribution of relative bargaining power within the household towards the inheritance recipient by shifting her/his outside option from the marriage (e.g., divorce). Inheritances are thus excellent candidates for stochastic distribution factors: they are assignable (i.e., individual assets) within the household and vary stochastically over time across individuals. The focus on asset components also minimizes sample selection biases arising from related works on labor income components among dual-earner households (Blundell et al., 2008, 2016; Lise and Yamada, 2019; Arellano et al., 2024; Belloc et al., 2025; Theloudis et al., 2025), as inheritances represent wealth changes not linked to labor effort.<sup>2</sup> In this context, most of the literature has focused on the consumption responses to unexpected income changes (Christelis et al., 2021).

The previous literature that examines the effect of inheritances on household consumption is rather scant and restricted to the United States (Joulfaian and Wilhelm, 1994; Belloc et al., 2025a).<sup>3</sup> In short, these papers focus on the wealth effect from inheritance receipt, as they can only analyze aggregate expenditure data at the household level. First, Joulfaian and Wilhelm (1994) show small positive effects from inheritances receipt on household food consumption. On the other hand, Belloc et al. (2025a) analyze the allocation of household expenses across durable and nondurable goods using recent data from the Panel Study of Income Dynamics (PSID), and report an average marginal propensity to consume (MPC) from the inheritance receipt at 10% for durable goods and nonlinear effects, with only large inheritances increasing the household consumption growth on both durables and nondurables goods.<sup>4</sup>

Our paper contributes both theoretically and empirically to this literature by analyzing the effects of inheritance receipt on consumption within the household. That is, we focus on

<sup>&</sup>lt;sup>2</sup>This is a frequent limitation when estimating collective models. For proposed solutions to nonparticipation in employment, refer to Donni (2003) and Blundell et al. (2007).

<sup>&</sup>lt;sup>3</sup>Recent research has also focused on food consumption expenses and inheritances in Europe (Suari-Andreu, 2023).

<sup>&</sup>lt;sup>4</sup>Initially, the PSID collected expenditures only on food items (Lundberg et al., 2003; Attanasio and Pistaferri, 2016; Alan et al., 2018).

the private and public consumption expenses of all household members, in contrast to what is usually the case when studying consumption outcomes with current datasets, together with the amount inherited by each spouse, if any.<sup>5</sup> To do so, we use annual longitudinal data collected from the Japanese Panel Survey of Consumers over 2003–2019, a household survey which provides consistent information on individual consumption and inheritances on an annual basis, thus minimizing time frequency issues from data (Crawley, 2020). Our approach resembles the reduced-form strategy of recent inter-temporal advances on household behavior (Theloudis et al., 2025) and study how private and public expenses of the household respond to individual inheritance receipt. We interpret the receipt of an inheritance as a stochastic distribution factor and hence focus on bargaining effects arising from the receipt of unexpected inheritances on the intra-household allocation of consumption. Besides, a limitation of previous works analyzing consumption responses to inheritances is their inability to distinguish between anticipated and unanticipated inheritances (Joulfaian and Wilhelm, 1994; Belloc et al., 2025a), an issue we address in our analysis.

Our results suggest that inheriting alters the marital contract in favor of the spouse who inherits, consistent with the collective household model. Specifically, inheritances received by husbands and wives increase their own private consumption, whereas unexpected inheritances received by wives reduce the consumption growth of their husbands. These findings are consistent with bargaining effects within the household, where inheriting empowers the recipient in household decisions, and vice versa for the partner, as bargaining power is relative inside the household. We also study whether the size of the inheritance matters and find that only relatively large, unexpected inheritances trigger meaningful consumption increases among wives, in line with recent findings in the literature (Lise and Yamada, 2019; Belloc et al., 2025a; Georgarakos et al., 2025). All in all, we find that the identity of the inheritance recipient is important for observed household decisions, and inheritances are not equally distributed between spouses. These results therefore contribute to the literature on inheritances, which has so far mostly focused on labor supply behaviors and wealth concentration, from a novel perspective.<sup>6</sup> Such results could inform the design of inheritance tax policy.

The remainder of the paper is organized as follows. Section 2 summarizes the theoretical framework. Section 3 presents the data, whereas Section 4 describes the econometric strategy.

<sup>&</sup>lt;sup>5</sup>This latter information is also a rare feature in this regard, as wealth components are usually measured at the household level (Frémeaux and Leturcq, 2020; Heathcote et al., 2023; Belloc et al., 2025a; Morelli et al., 2025).

<sup>&</sup>lt;sup>6</sup>Many articles have documented that inheritances reduce labor effort (Brown et al., 2010; Blau and Goodstein, 2016; Belloc et al., 2025b) and increase wealth inequality (Elinder et al., 2018; Nekoei and Seim, 2023; Morelli et al., 2025).

Sections 5 and 6 show and discuss the main results, respectively. Finally, Section 7 concludes.

#### 2 Theoretical framework

We follow the collective model (Chiappori, 1988, 1992), which relies on cooperative game theory and assumes that individuals reach Pareto-efficient outcomes. In particular, the theoretical framework is a life-cycle collective model (Mazzocco, 2007; Chiappori and Mazzocco, 2017; Lise and Yamada, 2019; Theloudis et al., 2025). Households consist of a male (j = 1) and a female (j = 2) that get married at time t = 0 and live for T periods. Spouses enjoy utility from private consumption  $(q_{jt})$  and public consumption  $(Q_t)$ , and disutility from work hours  $(h_{jt})$ , and are subject to a standard budget constraint. Then, households solve the following problem:

$$\max_{\{\mathbf{C}_t\}_{t=0}^T} \sum_{j=1}^2 \mathbb{E}_0 \sum_{t=0}^T \beta^t \mu_{jt} u_j(q_{jt}, Q_t, h_{jt})$$
s.t. period budget constraints, and
marital participation constraints,
$$(1)$$

where  $\mathbf{C}_t = \{q_{1t}, q_{2t}, Q_t, h_{1t}, h_{2t}\}$  is the set of household choice variables in period t.

The terms  $\mu_{jt}$  are the so-called Pareto weights, which summarize the intra-household contract and represent how spouses allocate resources between them. For instance, spouses commit to future allocations as long as marital participation constraints are not violated (Mazzocco, 2007). If one spouse would be better off outside the household, then the marital participation constraint would bind, with two potential outcomes: a renegotiation of the marital contract so that the constrained spouse would increase his/her bargaining power, or the household dissolution if the renegotiation is not feasible (Voena, 2015).

Mazzocco (2007), Lise and Yamada (2019), and Theloudis et al. (2025) show the dynamics of the Pareto weights under three prominent commitment regimes. Under full commitment, the Pareto weights are fully determined at marriage and remain constant over time; as a consequence, only variables observed or predicted at t = 0,  $\Theta_0$ , should induce bargaining effects on behavior. In other words, full commitment corresponds to a scenario in which participation constraints never bind. By contrast, in limited and no commitment, the Pareto weights change over time in terms of the information available, namely spousal wages  $w_{jt}$ , wealth  $a_t$ , and distribution factors  $\mathbf{Z}_t$ . Thus, information that reveals each time period determines the

 $<sup>\</sup>overline{{}^{7}\mathbf{Z}_{t}}$  represents stochastic distribution factors, i.e., variables that change over time and that affect the

intra-household contract that summarizes current behavior in non-full commitment modes. The literature has consistently rejected full commitment in Japan, with results aligning with limited commitment (Lise and Yamada, 2019; Belloc et al., 2025).<sup>8</sup>

Besides that, the dynamics of the Pareto weight are slightly different in no commitment and in limited commitment. Under no commitment, the intra-household contract needs to be renegotiated every time period, and renegotiations are independent. Conversely, under limited commitment, participation constraints bind only if spouses experience large enough shocks to their economic environment, so that Pareto weights have *memory* and depend on the past weights reflecting a Markov behavior (Theloudis et al., 2025). Thus, the Pareto weights under non-full commitment regimes can be expressed as:

$$\mu_{jt} = \mu_{jt}(\boldsymbol{\Theta}_0, \underbrace{w_{1t}, w_{2t}, \mathbf{Z}_t, a_t}_{\text{current news at } t}, \underbrace{\mu_{jt-1}}_{\text{past}}), \tag{2}$$

where  $\Theta_0$  represents the type of game played by the spouses, and the past weight, though unobserved, enters only in limited commitment due to the law of motion of the weights in this regime (Chiappori and Mazzocco, 2017; Theloudis et al., 2025), but does not enter in no commitment.

Despite that, under both limited commitment and no commitment, equation (2) illustrates that news to the household economic environment affects intra-household behavior and the allocation of resources between spouses (Mazzocco, 2007). Besides, the literature has long established that the optimal behavior that solves (1) depends on the Pareto weights. Thus, the optimal private and public consumption of households at date  $t \geq 1$  can be expressed as:

$$q_{jt} = q_{jt}^* \left( w_{1t}, w_{2t}, a_t, \mu_{jt}(\boldsymbol{\Theta}_0, w_{1t}, w_{2t}, \mathbf{Z}_t, a_t, \mu_{jt-1}) \right), \ j = 1, 2,$$

$$Q_t = Q_t^* \left( w_{1t}, w_{2t}, a_t, \mu_{jt}(\boldsymbol{\Theta}_0, w_{1t}, w_{2t}, \mathbf{Z}_t, a_t, \mu_{jt-1}) \right).$$
(3)

Equation (3) illustrates that some variables impact behavior both directly and through bargaining (i.e., through the Pareto weight). In words, wages and wealth affect behavior through substitution, income, wealth and bargaining effects, and disentangling these effects requires either a fully specified model (e.g., Lise and Yamada, 2019) or a partially specified

intra-household allocation of resources but not preferences or the budget constraint, conditional on income (Bourguignon et al., 2009). Conversely,  $\Theta_0$  represents *initial* distribution factors, i.e., variables that determine the initial formation of the Pareto weight and that remain unchanged during the course of the marriage.

<sup>&</sup>lt;sup>8</sup>Other authors have also rejected full commitment in the US and Europe (see, e.g. Mazzocco, 2007; Blau and Goodstein, 2016; Theloudis et al., 2025).

approach (Theloudis et al., 2025). On the other hand, distribution factors  $\mathbf{Z}_t$  impact behavior only through bargaining, and the *sign* of these effects is *disciplined*. For example, if a given variable  $z_{jt} \in \mathbf{Z}_t$  empowers spouse j, increasing j's Pareto weight, he/she should accrue a larger share of household resources, increasing his/her private consumption at t.<sup>9</sup> This intuition can be expressed as follows:

$$\frac{\partial q_{jt}}{\partial z_{jt}} = \frac{\partial q_{jt}}{\partial \mu_{jt}} \times \frac{\partial \mu_{jt}}{\partial z_{jt}} > 0,$$

where  $\partial q_{jt}/\partial \mu_{jt} > 0$  as consumption is assignable, and  $\partial \mu_{jt}/\partial z_{jt} > 0$  as by definition  $z_{jt} \in \mathbf{Z}_t$  empowers spouse j.<sup>10</sup>

Stochastic distribution factors  $\mathbf{Z}_t$  include variables that change over the course of the marriage, and shift the intra-household allocation of resources. This refers to, e.g., laws governing divorce (Chiappori et al., 2002; Voena, 2015), characteristics of the marriage market such as the sex-ratio (Chiappori et al., 2002), spouses' non-labor income (Bargain et al., 2022), or physical attractiveness (Chiappori et al., 2012). In this context, Blau and Goodstein (2016) use inheritances as stochastic distribution factors, as they are of exclusive property of the recipient spouse and are not divided at divorce. Then, conditional on wealth and on inheritance expectation, inheritances raise that spouse's outside value and thus the respective Pareto weight, shifting bargaining power. However, Blau and Goodstein (2016) focus their analysis on how inheritances impact spouses' labor force participation in the US. We thus complement their analysis by analyzing spouses' private consumption and household public consumption, rather than spouses' labor supplies.

The theory disciplines the impact of inheritances (and, more generally, stochastic distribution factors  $\mathbf{Z}_t$ ) on private consumption because private consumption is assignable (Theloudis et al., 2025), that is, because  $\partial q_{jt}/\partial \mu_{jt} > 0$ . Conversely, public consumption  $Q_t$  is not assignable, as it depends on the preferences for the public good. If spouse j has a stronger preference for the public good than the partner, then an increase in j's Pareto weight should increase the consumption of the public good (Blundell et al., 2005; Cherchye et al., 2025). The opposite should be observed if spouse -j has a stronger preference for the

<sup>&</sup>lt;sup>9</sup>As bargaining power in the household is relative,  $\mu_{1t} + \mu_{2t} = \text{constant}$ , an increase in j's Pareto weight at t relates to a decrease in the Pareto weight of the partner.

 $<sup>^{10}</sup>$ The past weights  $\mu_{jt-1}$  are unobserved. However, Theloudis et al. (2025) show that they can be approximated by past shocks to the household economic environment, so that a shock to  $z_{jt-\tau}$  would empower spouse j at date  $t-\tau$ , and this would impact the Pareto weights at that date, but also at future dates. The objective of this paper is not to estimate the dynamics of the Pareto weights (see, e.g., Lise and Yamada, 2019; Belloc et al., 2025, for analyses on this topic in Japan), but to study the impact of inheritances on household consumption behavior and intra-household allocations. Analyzing the impact of inheritances on the law of motion of Pareto weights is left for further analyses.

public good, and only in the extreme case that both spouses have the same preferences for the public good the impact of changes in the bargaining position should be negligible. As a consequence, the theory establishes that current and past news to the household economic environment should almost always impact the household public expenditure, although the sign of the effects remains ambiguous.<sup>11</sup> However, because inheritances are assignable, one could determine who has a stronger preference for the public good within the household by examining how inheritances impact public consumption.

#### 3 Data

#### 3.1 Sample selection

This paper uses data from the Japanese Panel Survey of Consumers (hereafter, JPSC), the longest-running nationwide household panel survey in Japan.<sup>12</sup> The JPSC has been fielded annually each October since 1993 and currently comprises five distinct cohorts of women. The initial wave in 1993 surveyed 1,500 women aged 24–34. While sample attrition is reported to be low and response rates remain high, four additional cohorts of young and middle-aged women were incorporated into the sample in 1997, 2003, 2008, and 2013 to maintain representativeness for the relevant age groups. For our empirical analysis, we use seventeen yearly waves of the JPSC covering the period 2003–2019 (waves 11–27), as wave 11 was the first to include questions on inheritance receipts.<sup>13</sup>

Our sample selection proceeds as follows. The JPSC administers two questionnaires depending on the marital status of women: one for married women and another for unmarried women. In married households, the female respondent (i.e., the main survey participant) provides similar information both for herself and for her husband. As discussed in Section 2, our analysis focuses on married women. These households represent stable couples, meaning that we account for significant changes in household composition, such as divorce and remarriage (Blundell et al., 2008, 2016; Fagereng et al., 2021; Theloudis, 2021; Arellano

<sup>&</sup>lt;sup>11</sup>This is the intuition of the seminal work of Mazzocco (2007), who proposed the first test for intrahousehold commitment analyzing how household expenditures responded to shocks to the household economic environment.

<sup>&</sup>lt;sup>12</sup>More information on the JPSC is available at https://www.pdrc.keio.ac.jp/en/paneldata/datasets/japanese-panel-survey-of-consumers-jpsc/. The survey was initially administered by the Institute for Research on Household Economics, and since 2018, it has been conducted by the Panel Data Research Center at Keiō University.

<sup>&</sup>lt;sup>13</sup>See Niimi (2022) or Hamaaki and Ibuka (2024) for recent analyses on the impact of inheritance receipt on wealth accumulation and labor supply using the JPSC.

<sup>&</sup>lt;sup>14</sup>This is similar to other household surveys, such as the PSID.

 $<sup>^{15}</sup>$ Same-sex marriage is not legally recognized under current Japanese law.

et al., 2024; Belloc et al., 2025a; Theloudis et al., 2025). <sup>16</sup> Furthermore, we exclude observations with missing or inconsistent responses on inheritance realizations and expectations, basic demographics characteristics (e.g., age, education, household composition), consumption, income and wealth. Similarly, we exclude all observations where respondents indicated that their total, private or public expenses are zero, in order to define appropriately concurrent growth rates in consumption. Finally, we restrict the sample to households present in at least two consecutive years, so we can construct first differences and use lagged variables for the estimation. After applying these restrictions, the final sample consists 3,991 household-year observations from 772 households, each observed for an average of 5.2 years between 2003 and 2019. <sup>17</sup>

#### 3.2 Variables

The key stochastic distribution factor in our analysis is the realization of inheritances. Since 2003, the JPSC has collected information on inheritance receipt through the following two questions: "Have you and your spouse received any financial assets or tangible assets from your parents during the past year (October of the previous survey year to September of the current survey year) as an inheritance? If so, please enter the value" and "Have you and your spouse received any financial assets or tangible assets from your husband's parents during the past year (October of the previous survey year to September of the current survey year) as an inheritance? If so, please enter the value". 18

These questions allow us to identify whether the household received any inheritance during the past year from the husband's or the wife's parents, if any. In Japan, as in many other developed countries (OECD, 2021; Hamaaki and Ibuka, 2024; Belloc et al., 2025b), children of the deceased are legally recognized as 'forced heirs', implying that decedents cannot disinherit their children and a fixed share of the net worth must be transferred to them if it is positive. On the other hand, heirs in Japan can refuse the inheritance if debts are passed on to the heirs. Accordingly, we define two dummy variables that take the value 1 if the wife or the husband received an inheritance from their parents in the previous year, and 0 otherwise. <sup>19</sup>

<sup>&</sup>lt;sup>16</sup>In our sample, about 3.53% of married women experience divorce and subsequently remarry with a different spouse to form a new household. The study of household formation and dissolution decisions is beyond the scope of this article, and we refer to Basiglio (2022) for a recent analysis of the relationship between inheritances and divorce in Italy.

<sup>&</sup>lt;sup>17</sup>The number of observations in the econometric analysis is lower than 3,991, as the estimating equations are in first difference.

<sup>&</sup>lt;sup>18</sup>There are no couples who declare the same amount of inheritance for either husband's or wife's parents, conditional on inheriting.

<sup>&</sup>lt;sup>19</sup>This approach resembles the identification strategy used by Blau and Goodstein (2016) and Belloc et al.

We further exploit questions on inheritance expectations: "Do you and your husband expect to receive financial and real assets from your parents in the future?", and "Do you and your husband expect to receive financial and real assets from your husband's parents in the future?", with the possible answers being "Yes", "No", or "My parents/parents-in-law have passed away", to control for anticipation signs among forward-looking spouses (Kindermann et al., 2020; Basiglio et al., 2023; Malo and Sciulli, 2023). We define two dummy variables that take the value 1 if the corresponding spouse expects to receive an inheritance from their parents in the future, and 0 otherwise, excluding cases where both spouses' parents are deceased since no uncertainty remains in such cases. Therefore, the sample includes only those households that face uncertainty related to the size and reception of inheritance either from parents or parents-in-law, or from both (Druedahl and Martinello, 2022; Hamaaki and Ibuka, 2024).

A distinctive feature of the JPSC dataset is its rich information on household consumption (Lise and Yamada, 2019). Specifically, the survey asks: "How much did your household spend this past September? If the amount is 0 yen, please fill in 0".<sup>21</sup> Additionally, the JPSC dataset asks for the breakdown of household expenditures across five mutually exclusive beneficiary categories: (1) Expenses for the household as a whole, (2) Expenses for the wife, (3) Expenses for the husband, (4) Expenses for children, and (5) Expenses for other household members.<sup>22</sup> This question is uncommon, as consumption is typically collected at the household level as a Hicksian aggregate commodity, and allows us to make the distinction between private and public consumption. Following Fujii and Ishikawa (2013), Lise and Yamada (2019), Chiappori et al. (2025), Hwang and Nguyen (2025), and Sakamoto and Kohara (2025), we categorize categories 1, 4, and 5 as expenditures to produce the household public good, and categories 2 and 3 as private consumption of the wife and the husband, respectively.

(2025b) in ageing surveys from Europe and the US. From an overview of the institutional background on inheritances in Japan, see Niimi (2022). In contrast, datasets such as the German Socio-Economic Panel (SOEP) Study, the Household, Income and Labour Dynamics in Australia (HILDA), the Household Finance and Consumption Survey (HFCS), and the PSID collect information for inheritances only at the household level, which precludes such intra-household analyses (Hamaaki and Ibuka, 2024; Belloc et al., 2025a).

<sup>&</sup>lt;sup>20</sup>This measure is dichotomous, similar to the SOEP dataset (Doorley and Pestel, 2020), and arguably less informative than a probabilistic question, as widely discussed in the literature on subjective expectations. However, our article focuses on inheritance *realizations*.

<sup>&</sup>lt;sup>21</sup>This question refers to total monthly living expenses and does not refer to specific good categories. Nevertheless, the JPSC dataset collects mainly information for nondurable goods, such as food, renting, utilities, furniture, clothing, healthcare, transportation, communication, education, culture and entertainment, social expenses, remittances to family members, and other expenses.

<sup>&</sup>lt;sup>22</sup>This design provides beneficiary-level expenditure data, addressing the question of 'who consumes what' within the household. Similar data for the consumption of individuals inside households exist for other developed countries, such as Belgium (Browning et al., 2024), Denmark (Bonke and Browning, 2011), Italy (Menon et al., 2012), and the Netherlands (Cherchye et al., 2012).

We also define variables for spouses' annual incomes and employment status, and basic demographic characteristics such as age and educational attainment. At the household level, we include measures of wealth, income of all household members, composition (household size and number of children), and prefecture of residence.<sup>23</sup> Spousal income is defined as the sum of labor (e.g., wages and self-employment income) and non-labor (e.g., social security benefits and asset income) sources (Mazzocco, 2007).<sup>24</sup> Household wealth is constructed by the sum of all financial and real assets (savings and deposits, plus housing and other real estate) net of mortgages and other debts (Niimi, 2022). All monetary values (consumption, income, wealth, inheritance) are deflated using the Consumer Price Index from the Statistics Bureau of Japan and expressed in 2019 prices.

#### 3.3 Summary statistics

Table 1 presents the summary statistics for the key characteristics of our sample. On average, husbands spend 524,775 yen, while wives spend 319,616 yen. This implies a gender consumption gap of 205,160 yen, which is statistically significant at the 1% level. With respect to inheritance, about 1.1% of husbands and 0.8% of wives received an inheritance during the past year. The average inheritance amount is 11,421,640 yen for husbands and 6,596,131 yen for wives, both conditional on inheriting. Moreover, 47.3% of husbands expect to receive an inheritance from their parents in the future, compared with 38.9% of wives. Average annual income amounts to 6,119,623 yen for husbands and 2,239,595 yen for wives.

Turning to demographics, 98.9% of husbands are employed, compared with 89.4% of wives. The average spousal age gap is 2.35 years, with wives being younger, and husbands report more years of education on average. Regarding household characteristics, average public consumption amounts to 2,851,311 yen, and constitutes the largest share of total household consumption (i.e., about 76.1%). The mean level of household wealth and income is 20,173,670 and 9,277,813 yen, respectively. Households consist, on average, of four members, including two children. These statistics are broadly consistent with previous studies using the same dataset (Lise and Yamada, 2019; Sakamoto and Morita, 2024; Chiappori et al., 2025; Hwang and Nguyen, 2025; Sakamoto and Kohara, 2025).

<sup>&</sup>lt;sup>23</sup>We obtained special permission to access detailed prefectural codes (47 categories), as opposed to the broader eight-region classification for respondents' place of residence available in the standard dataset. Similar results are found if we use the most general variable for the region of residence.

<sup>&</sup>lt;sup>24</sup>Income variables are retrospective, with the 2020 survey providing 2019 earnings.

<sup>&</sup>lt;sup>25</sup>At the household level, 1.8% of households inherited during the observation period, matching recent statistics on household inheritances using the SOEP (Kindermann et al., 2020). These statistics are not comparable to other studies using ageing surveys (Blau and Goodstein, 2016; Belloc et al., 2025b).

Table 1: Summary statistics

	Hush	ands	Wi	ves	
Spouse variables	Mean	Std. Dev.	Mean	Std. Dev.	Diff.
Private consumption $q_{jt}$	524.775	358.359	319.616	347.587	205.160***
Share of consumption (%)	0.149	0.083	0.090	0.073	0.060***
$\Delta \log q_{jt}$	0.013	0.662	0.018	0.770	-0.005
Inheritance receipt	0.011	0.104	0.008	0.091	0.003
Inheritance value	125.921	1,738.071	54.541	903.629	71.381**
Inheritance value   receipt	11,421.640	12,177.620	$6,\!596.131$	7,570.698	4,825.509**
Inheritance expectation	0.473	0.499	0.389	0.487	$0.085^{***}$
Income $y_{jt}$	$6,\!119.623$	2,992.026	$2,\!239.595$	$2,\!139.326$	3,880.028***
$\Delta \log y_{jt}$	0.005	0.250	0.042	0.596	-0.037***
Age	43.933	8.511	41.586	7.786	2.347***
Education (years of schooling)	13.953	2.120	13.721	1.635	0.232***
Employment status	0.989	0.106	0.894	0.308	0.095***
Household variables		Mean	Std. Dev.		
Total consumption		3,695.701	1,831.529		
$\Delta \log \text{ total consumption}$		0.018	0.352		
Public consumption $Q_t$		2,851.311	1,651.815		
Share of consumption $(\%)$		0.761	0.124		
$\Delta \log Q_t$		0.019	0.424		
Inheritance receipt		0.018	0.133		
Wealth $a_t$		20,173.670	23,639.580		
$\Delta \log a_t$		0.061	0.711		
Income $y_t$		$9,\!277.813$	$4,\!238.812$		
$\Delta \log y_t$		0.011	0.220		
Household size		3.833	1.378		
Number of children		1.633	0.953		
Total observations		3,9	991		
Number of households		7'	72		

*Notes*: Data come from the JPSC 2003–2019. The sample is rectricted to married couples observed for at least two consecutive periods. Private and public consumption represent annual consumption. All monetary amounts are expressed in 2019 Japanese yen (\$1,000 per year). \*\*\* significant at the 1%; \*\* significant at the 5%; \* significant at the 10%.

### 4 Econometric strategy

The optimal household consumption behavior is shown in (3) in reduced form. Specifically, both spouses' individual private consumption and household public consumption depend on income, wealth, and the Pareto weights. In turn, under limited commitment, the Pareto weights depend on current and past news to the household economic environment, namely current and past wages, wealth, and distribution factors. However, we cannot observe Pareto weights, and a structural implementation would require fully specifying preferences and the law of motion of the Pareto weights, which is not our objective. The quasi-structural

approach based on a log-linearization of the Pareto weight is also not applicable to our context, as inheritances often take the value zero. We therefore adopt a reduced-form strategy consistent with (3).

For a household i formed by spouses j = 1, 2 observed at year t, we estimate the following equation for spouse j's private consumption:

$$\Delta \log q_{ijt} = \alpha + \underbrace{\beta_{j[z_{1t}]} z_{i1t} + \beta_{j[\mathbb{E}_{1t-1}]} \mathbb{E}_{i1t-1}}_{\text{current own distribution factor}} + \underbrace{\beta_{j[z_{2t}]} z_{i2t} + \beta_{j[\mathbb{E}_{2t-1}]} \mathbb{E}_{i2t-1}}_{\text{current spouse distribution factor}} \mathbb{E}_{i2t-1}$$

$$+ \gamma_{j1} \Delta h_{i1t} + \gamma_{j2} h_{i1t-1} + \gamma_{j3} \Delta h_{i2t} + \gamma_{j4} h_{i2t-1}$$

$$+ \xi_{j1} \Delta \log y_{i1t} + \xi_{j2} \log y_{i1t-1} + \xi_{j3} \Delta \log y_{i2t} + \xi_{j4} \log y_{i2t-1}$$

$$+ \xi_{j5} \Delta \log a_{it} + \xi_{j6} \log a_{it-1} + \xi_{j7} \Delta \log y_{it} + \xi_{j8} \log y_{it-1}$$

$$+ \xi_{j8} \Delta \log q_{i2t} + \xi_{j9} \log q_{i2t-1} + \xi_{j10} \Delta \log Q_{it} + \xi_{j11} \log Q_{it-1}$$

$$+ \mathbf{b}'_{i} \Delta \mathbf{x}_{it} + \tau_{t} + \eta + \varepsilon_{ijt},$$

$$(4)$$

where, disregarding sub-indexes,  $\Delta \log q$  is the growth (first log-difference) of private consumption, z represents the spouse inheritance actually received,  $\mathbb E$  is the expectation of inheriting in the future, h captures employment status and changes, y represents incomes, a is wealth, Q is household public consumption,  $\mathbf x$  is a vector of demographic controls at the household level (including household size and the number of children), and  $\varepsilon$  is the error term. <sup>26</sup>

Equations (4) are estimated using Ordinary Least Squares (OLS), and we include year fixed effects  $\tau_t$ , to capture potential macroeconomic shocks and common changes in prices and/or policies, and prefecture fixed effects  $\eta$  (we omit the region sub-index for the sake of simplicity), to control for regional differences in consumption.<sup>27</sup> Standard errors are cluster-robust at the household level to allow for arbitrary serial correlation and heteroskedasticity at the household level (Cameron and Miller, 2015).

For household public consumption, we estimate an equation analogous to (4), though the dependent variable is  $\Delta \log Q_{it}$ , the growth (first log-difference) of household public consumption. In words, we model responses in variations of consumption to current spouses' inheritances, inheritance expectations, incomes, employment, private consumption, household income, and household wealth, controlling for time-varying observables.

The identification of the bargaining effects in (4) relies on inheritances and their expecta-

<sup>&</sup>lt;sup>26</sup>Year born and education level are constant, meaning that we cannot incorporate these individual demographic controls in the specification.

<sup>&</sup>lt;sup>27</sup>Similar results are found if we allow for time-varying differences at the regional level and further include region-year fixed effects. This set of results is available from the authors upon request.

tions acting as stochastic distribution factors. The intuition resembles Blau and Goodstein (2016), as inheritances are individual assets according to current matrimonial property laws and thus not equally split in the event of divorce.<sup>28</sup> Conditional on expectations, income, wealth, family composition, and complementarities in consumption, inheritance realizations do not alter preferences or the budget constraint, but they do affect spouses' outside options empowering the recipient spouse. The simultaneous inclusion of inheritance receipt and past expectations as in Blau and Goodstein (2016) ensures that any sign of anticipation is captured and netted out by the expectation term, leaving the terms of interest  $\beta_{j[z_{it}]}$ ,  $i, j \in \{1, 2\}$  to capture the bargaining effects of inheritances. Besides, since we do not impose a parametrization on the Pareto weight, the results are interpreted as reduced-form effects consistent with the model, without attempting to disentangle separate income/substitution/bargaining channels.

#### 5 Results

#### 5.1 Baseline results

Table 2 presents the main results from estimating equation (4), separately for husbands and wives. (Full estimates are shown in Table A.1 in the Appendix A.) We find that the identity of the recipient is important, and the results align with bargaining effects within the household. Specifically, husbands and wives increase their consumption growth after receiving an unexpected inheritance, whereas husbands reduce their consumption growth if their partners receive an unexpected inheritance. Numerically, own-inheritances increase husbands' and wives' consumption growth by 32.6% and 26.7%, respectively.<sup>29</sup> Concerning the estimation results on spousal inheritances, the cross-inheritance coefficient is negative for both partners, consistent with a bargaining effect within the household. Besides, it exhibits a statistically significant coefficient in the equation for husbands' consumption growth, suggesting that unexpected inheritances received by wives reduce husbands' consumption growth by 27.1%.

Given that we have individual-level information on inheritance amounts, we further dichotomize this variable into two categories: small and large inheritances (not receiving is the reference category). We define these categories using the 90th percentile amount for each spouse. For wives, the threshold is set at 2,125,480¥, and for husbands at 2,956,110¥.

<sup>&</sup>lt;sup>28</sup>Since the implementation of the Civil Code in 1898, the default and compulsory marital property regime in Japan is the separation of property, under which each spouse hold sole ownership of all the assets, including the associated returns, that he or she accumulates during marriage.

<sup>&</sup>lt;sup>29</sup>To express this effect as a percentage change, we compute  $(e^{\beta_{j[z_{jt}]}} - 1) \cdot 100\%$ .

<sup>&</sup>lt;sup>30</sup>We also check other threshold amounts, such as the median or the 3rd quartile, but no significant

Table 2: Impact of inheritance receipt on individual consumption growth

-	Husbands	Wives
T 1 ', ' ',	Traco arrac	112.00
Inheritance recipient		
Self	$0.282^{***}$	$0.237^{**}$
	(0.082)	(0.120)
Spouse	-0.316**	-0.157
	(0.149)	(0.103)
Past inheritance expectate	ion	
Self	0.006	-0.013
	(0.018)	(0.023)
Spouse	0.001	-0.030
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

Notes: The sample (JPSC 2003–2019) is restricted to married couples observed for at least two consecutive periods. Standard errors clustered at the household level are reported in parentheses. Additional coefficients are reported in Table A.1 in the Appendix A. \*\*\* significant at the 1%; \*\* significant at the 5%; \* significant at the 10%.

The main results are reported in Table 3. In this context, we find that both small and large inheritances increase consumption growth among husbands, whereas wives increase their consumption growth only after receiving a large inheritance. Specifically, large inheritances increase wives' consumption growth by 124.8%, while both small and large inheritances increase husbands' consumption growth by 31.3% and 40.4%, respectively.<sup>31</sup> Besides, both small and large inheritances received by women reduce consumption growth among husbands by 27.4–28.2%. Alternatively, to prove further heterogeneity according to the household financial situation, we normalize the inheritance amount by household income over the observed period and find that an increase in inheritance equivalent to the household income (9,277,813¥, on average) raises husbands' and wives' consumption growth by 9.2% and 28.8%, respectively. The corresponding results are reported in Table 4.<sup>32</sup>

All in all, we show that inheriting alters household observed choices and the identity of the recipient is important to explain such changes. Own-inheritances appear to shift consumption growth among husbands and wives, whereas husbands reduce their consumption growth if their wives have received an unexpected inheritance. The results that husbands and wives

heterogeneities are found.

<sup>&</sup>lt;sup>31</sup>We cannot reject that these two latter estimates are equal based on a t-type test (p = 0.758).

<sup>&</sup>lt;sup>32</sup>Consistent effects are found if we use the first lag for the household income, as shown in Table A.2.

Table 3: Impact of inheritance amounts on individual consumption growth

	Husbands	Wives
Small inheritance recipie	$\overline{nt}$	
Self	0.272***	$0.206^{*}$
	(0.087)	(0.124)
Spouse	-0.320**	0.164
	(0.158)	(0.116)
Large inheritance recipier	nt	
Self	$0.339^*$	0.810***
	(0.205)	(0.237)
Spouse	-0.332**	-0.092
	(0.166)	(0.126)
Past inheritance expectat	ion	
Self	0.006	-0.013
	(0.018)	(0.023)
Spouse	$0.001^{'}$	-0.030
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

only increase their consumption growth when they inherit, whereas husbands reduce their consumption growth if their partners receive an inheritance, are in line with the collective household model, where economic resources are not totally pooled and the individual contributions to the household budget constraint matter. In this context, inheriting alters the marital pie (i.e., the distribution of household resources from the intra-household bargaining process) in favor of the inheritance recipient, who ultimately raises their consumption.

Once anticipation signs (i.e., past inheritance expectations) have been accounted for, inheritance realizations should not matter for household observed choices according to full commitment (Mazzocco, 2007; Blau and Goodstein, 2016; Lise and Yamada, 2019; Theloudis et al., 2025), as they were fully anticipated in the past among forward-looking spouses. However, we show that inheriting changes household observed choices, consistent with nonfull commitment. Similar results have been found for household labor supply responses to inheritances in the US (Blau and Goodstein, 2016), or consumption responses to wage shocks in the US (Mazzocco, 2007) and Japan (Lise and Yamada, 2019). In short, by documenting a

Table 4: Impact of re-scaled inheritance amounts on individual consumption growth

	Husbands	Wives
Inheritance amount scale	d by household income	
Self	0.088**	0.253**
	(0.043)	(0.120)
Spouse	-0.360	-0.067
	(0.236)	(0.059)
Past inheritance expectate	ion	
Self	0.007	-0.013
	(0.018)	(0.023)
Spouse	0.001	-0.030
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

significant change in the dynamics of household consumption in Tables 2, 3 and 4, we similarly reject full commitment among Japanese households in favor of non-full commitment models of intertemporal behavior.

Robustness checks We have run some robustness checks. First, we restrict the sample to legally married couples that never divorce (Mazzocco, 2007; Blundell et al., 2008; Blau and Goodstein, 2016) to reduce heterogeneity from differences related to cohabitation and remarriage. Second, we limit the sample to couples between 25 and 60 years (Blundell et al., 2016; Arellano et al., 2024) to mitigate life-cycle decisions related to fertility or retirement.<sup>33</sup> Third, there may be concerns regarding some controls in our approach (i.e., wealth, income, or employment changes), but excluding such variables does not materially alter our findings. Relatedly, we include households who declare zero amounts of income or negative amounts for wealth. Fifth, we conduct a placebo analysis replacing the two dummy variables denoting inheritance receipt by two random inheritance indicators that match the original distribution. Sixth, we exclude households who exhibit extreme jumps in the husband's or wife's consumption growth (Blundell et al., 2016; Theloudis, 2021; Ghosh and Theloudis, 2025), as they can be considered as outliers. Finally, we include household fixed effects in the

<sup>&</sup>lt;sup>33</sup>Our main sample does not include spouses younger than 23, whereas it contains 7 observations from husbands older than 65. Similar results are found if we exclude such observations in Table A.5.

estimates, to further capture and net out household unobserved heterogeneity.<sup>34</sup> Across all these checks, the results remain qualitatively robust; see Appendix Tables A.3, A.4, A.6, A.7, A.8, A.9, and A.10.

#### 5.2 Additional results

We have conducted some additional analyses. First, so far we have focused on the private consumption of wives and husbands. Nevertheless, our dataset provides information on consumption for other household members. Table 5 reports the main estimates for that alternative dependent variable, although no statistically significant results are reported regardless of the definition used for inheritances. If any, we show that an increase in the inheritance amount received by the wife equal to the family income reduces the household consumption growth on public goods by 17.4%.

In our benchmark analysis, we compare heirs to nonheirs and interpret the receipt of an inheritance as an unexpected wealth shock, as we control for past anticipation effects through the past inheritance expectation. We focus instead on a homogeneous sample involving households, either recipient or nonrecipient, with similar characteristics. That is, we use a propensity score matching (Rosenbaum and Rubin, 1983; Bø et al., 2019) to find a suitable control group of nonheirs. Although this approach substantially reduces the sample available for the econometric analysis, the results remain identical, as shown in Table 6, overcoming concerns about potential differences among heirs and nonheirs in our main sample. Alternatively, we focus on a sample that includes households who expect to inherit at some point in the future in Table 7 (Druedahl and Martinello, 2022), and find analogous estimates.

Finally, liquidity constraints may lead to a strong consumption response to inheritances. In our identification strategy, we treat the receipt of an inheritance as an unexpected shock after controlling for past inheritance expectations. Alternatively, we remove households who are likely to be liquidity/credit constrained from the sample, to check whether they have driven our results. Specifically, we exclude households who have been denied credit or did not apply for credit due to fears of rejection, as a proxy for credit constraints (Jappelli et al., 1998; Rossi and Trucchi, 2016; Paiella and Pistaferri, 2017; Hamaaki and Ibuka, 2024; Sala and Trivin, 2024). Results, reported in Table 8 are fairly similar, suggesting that this household group has not driven our main findings.<sup>35</sup>

<sup>&</sup>lt;sup>34</sup>To appropriately include household fixed effects, we restrict the sample to households observed for at least three consecutive periods.

<sup>&</sup>lt;sup>35</sup>We also exclude households who have a liquidity-to-asset income ratio (LAR) lower than 2.5%, or are situated in the first quintile of this variable (Belloc et al., 2025a), and find similar results. For further details,

Table 5: Impact of inheritances on household public consumption growth

Depen	ndent variable: Pu	blic consumption grow	vth
Inheritance recipient			
Husband	0.019		
	(0.082)		
Wife	-0.102		_
	(0.082)		
Small inheritance			
Husband	_	0.031	_
		(0.092)	
Wife	_	-0.102	_
		(0.087)	
Large inheritance			
Husband		-0.044	_
		(0.142)	
Wife	_	0.007	_
		(0.193)	
Inheritance amount scal	led by household in	ncome	
Husband			-0.000
			(0.045)
Wife	_	_	-0.191*
			(0.114)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Observations	2,856	2,856	2,856
Households	772	772	772

Table 6: Alternative control group with similar characteristics from the propensity score

	Husbands	Wives
Inheritance recipient		
Self	0.350***	0.194
	(0.111)	(0.160)
Spouse	-0.357**	-0.217*
	(0.178)	(0.128)
Past inheritance expectate	ion	
Self	-0.008	-0.013
	(0.059)	(0.056)
Spouse	-0.015	-0.055
	(0.053)	(0.087)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	510	510
Households	148	148

Table 7: Main results including households who expect to inherit in the future

	Husbands	Wives
Inheritance recipient		
Self	0.260***	$0.239^*$
	(0.084)	(0.123)
Spouse	-0.327**	-0.159
	(0.150)	(0.107)
Past inheritance expectati	on	
Self	0.013	-0.026
	(0.021)	(0.027)
Spouse	0.012	-0.046*
	(0.023)	(0.024)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,336	2,336
Households	588	588

Table 8: Main results omitting credit contrained households

	Husbands	Wives
Inheritance recipient		
Self	0.286***	$0.225^{*}$
	(0.082)	(0.124)
Spouse	-0.334**	-0.153
	(0.156)	(0.101)
Past inheritance expectate	ion	
Self	0.008	-0.014
	(0.019)	(0.024)
Spouse	-0.002	-0.028
	(0.020)	(0.022)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,773	2,773
Households	755	755

#### 6 Discussion

This paper contributes to the literature by reporting bargaining effects within the household arising from inheritance receipt. Whereas previous works have reported that inheriting empowers the recipient within household decisions focusing on household labor supply behaviors (Blau and Goodstein, 2016; Belloc et al., 2025b),<sup>36</sup> the novelty of our approach emerges from our focus on consumption dynamics in an inter-temporal collective model, so far not explored in this regard. In this context, our results significantly contrast with recent evidence centering on consumption responses to inheritance receipt at the household level (Belloc et al., 2025a), which focuses on positive wealth effects within a unitary decision-making setting. Hence, they abstract from issues of intra-household bargaining and analyze outcomes at the household level.

The unitary framework has long been theoretically and empirically rejected, as they disregard key economic predictions, such as individualism and conflicting preferences among

refer to Tables B.1 and B.2.

<sup>&</sup>lt;sup>36</sup>Other recent works studying individual labor supply responses to inheritance receipt, building on the 'Carnegie conjecture' where inheriting should reduce labor effort, include Brown et al. (2010), Elinder et al. (2012), Bø et al. (2019), Niizeki and Hori (2019), Doorley and Pestel (2020), Suari-Andreu (2023), and Hamaaki and Ibuka (2024). Cox (2014) and Horioka (2025) provide a survey of this extensive literature.

household members, and is unable to explain household decisions. In contrast, the collective household model views household decisions as the outcome of a bargaining process among spouses with distinct preferences, who cooperate to reach Pareto-efficient decisions (Chiappori, 1988, 1992). Nevertheless, most of the literature on collective models remains in a static setting, and limited contributions are set in a dynamic framework (Mazzocco, 2007; Voena, 2015; Lise and Yamada, 2019; Belloc et al., 2025; Theloudis et al., 2025).

A key obstacle of the inter-temporal context, in addition to data requirements imposed by such framework, is finding suitable *stochastic* distribution factors (i.e., factors that exogenously shape intra-household bargaining power across periods without affecting individual preferences or budget constraints). Within this context, inheritances constitute a promising stochastic distribution factor, and they are readily available in many household surveys (Blau and Goodstein, 2016; Belloc et al., 2025b). Similar to wages (we refer to Theloudis et al. (2025) for a detailed summary of the advantages of using individual wages as stochastic distribution factors in this context), inheritances represent assignable assets within the household that vary stochastically over time across individuals. Besides, they can be received by the overall population, which minimizes sample selection issues of other works focusing on dual-earner households for the estimation of collective models (Donni, 2003; Blundell et al., 2007).<sup>37</sup>

The intuition for the bargaining effect from inheritances arises from the individual assignability of inheritances within the household, as they belong exclusively to the recipient according to current marital property laws. As a result, inheritances may favor the distribution of household resources towards the inheritance recipient, increasing his/her Pareto weight. Consequently, he/she should increase his/her consumption immediately after inheriting, and vice versa for his/her partner who should decrease her/his consumption, as bargaining power is relative inside the household and she/he has been weakened on household decision-making (i.e., she/he attracts a lower share of household resources from the allocation process). We test this prediction using an inter-temporal collective framework for consumption decisions, and report consistent effects. Therefore, inheriting appears to empower spouses in Japan.

<sup>&</sup>lt;sup>37</sup>Possible examples of distribution factors from a static perspective include sex ratio in the marriage market, or within-household variables such as the relative age, education level or body mass index of the two partners (Chiappori et al., 2002, 2012; Browning et al., 2014; Lise and Yamada, 2019; Hwang and Nguyen, 2025; Theloudis et al., 2025), but they *mostly* vary cross sectionally across households.

#### 7 Conclusions

This paper examines how inheritances impact household behavior, focusing on bargaining effects within the household. Specifically, it investigates how the receipt of unexpected inheritances impacts household consumption through a dynamic collective model. We contribute to this literature by studying private consumption, rarely observed in household surveys. The intuition behind our approach lies in the individual assignability of inheritances, as they belong exclusively to the recipient and are not equally divided upon divorce under current matrimonial property laws, thereby potentially altering the distribution of bargaining power within the household.

Using data from the JPSC over 2003–2019, which provides continuous information on individual consumption and inheritances for both spouses, we find evidence consistent with the bargaining mechanism. Inheritances received by one partner lead to significant increases in their own consumption, while inheritances received by women reduce their husbands' consumption growth. These results are in line with non-full commitment models of intertemporal household behavior, suggesting that bargaining power within the household evolves over time in response to unexpected changes in household economic resources.

This study is not without limitations. First, the JPSC dataset primarily targets young women. This implies that variables related to husbands may be subject to greater measurement error, whereas older cohorts are underrepresented in the data. The limited sample size also constrains the inclusion of additional lags of inheritance receipt to properly distinguish between different commitment regimes (Theloudis et al., 2025). Although this article does not aim to identify the degree of commitment within households (Belloc et al. (2025) provides recent evidence for Japan), future research could extend our framework to assess the persistence of our estimates under limited commitment.<sup>38</sup>

Our findings have important policy implications. They show that inheritances alter the intra-household allocation of consumption and that receiving an inheritance may induce negative consumption responses among partners. This implies that not all inheritances trigger consumption increases and flow to the economic activity, in contrast to the unitary results reported in Belloc et al. (2025a). While much of the existing literature on inheritances has focused on labor supply and wealth accumulation, our results can inform current policy debates on the design of inheritance taxation.

 $<sup>^{38}</sup>$ Preliminary results based on a reduced-form limited commitment specification (Belloc et al., 2025; Theloudis et al., 2025) suggest that inheritances at t-1 are not statistically significant, while the effect of inheritances at t remains qualitatively unchanged from the baseline. Moreover, the sign of the coefficients for inheritances at t-1 does not support a bargaining mechanism. See Table C.1 in Appendix C for details.

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## Appendix

## A Additional results

Table A.1: Full estimates

	Husbands	Wives
$z_{i1t}$	0.282***	0.237**
	(0.082)	(0.120)
$\mathbb{E}_{i1t-1}$	0.006	-0.013
	(0.018)	(0.023)
$z_{i2t}$	-0.316**	-0.157
	(0.149)	(0.103)
$\mathbb{E}_{i2t-1}$	0.001	-0.030
	(0.020)	(0.021)
$\Delta h_{i1t}$	0.044	0.072
	(0.182)	(0.060)
$h_{i1t-1}$	0.077	0.032
	(0.202)	(0.077)
$\Delta h_{i2t}$	-0.095*	$-0.036^{'}$
	(0.056)	(0.150)
$h_{i2t-1}$	-0.101*	-0.279
	(0.057)	(0.172)
$\Delta \log y_{i1t}$	$0.053^{'}$	$0.041^{'}$
	(0.085)	(0.041)
$\log y_{i1t-1}$	$0.014^{'}$	$0.021^{'}$
0.0010 1	(0.028)	(0.017)
$\Delta \log y_{i2t}$	0.037	0.005
— 0 g i 2 i	(0.028)	(0.079)
$\log y_{i2t-1}$	0.045***	0.056
	(0.015)	(0.038)
$\Delta \log a_{it}$	0.014	0.021
0 **tt	(0.019)	(0.024)
$\log a_{it-1}$	0.002	-0.002
38 wtt-1	(0.008)	(0.010)
$\Delta \log y_{it}$	-0.075	0.183*
- 108 <i>911</i>	(0.107)	(0.111)
og $y_{it-1}$	-0.081**	-0.036
08 91t-1	(0.040)	(0.046)
$\Delta \log q_{i-jt}$	0.260***	0.381***
$-108  q_{i-jt}$	(0.030)	(0.036)
$\log q_{i-jt-1}$	-0.046***	0.010
$\log q_i - jt - 1$	(0.016)	(0.018)
$\Delta \log Q_{it}$	-0.029	-0.070
$\Delta \log Q_{it}$	(0.036)	(0.044)
$\log Q_{it-1}$	0.018	-0.029
$\log \varphi_{it-1}$	(0.022)	(0.026)
	,	(0.020)
Other household controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

Table A.2: Impact of re-scaled inheritance amounts on individual consumption growth

	Husbands	Wives
Inheritance amount scale	d by household income at t -	- 1
Self	0.090**	0.169
	(0.041)	(0.204)
Spouse	-0.564**	-0.078
	(0.261)	(0.052)
Past inheritance expectat	ion	
Self	0.007	-0.012
	(0.018)	(0.023)
Spouse	0.001	-0.030
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

Table A.3: Main results keeping legally married partners that never divorce

	Husbands	Wives
Inheritance recipient		
Self	0.290***	$0.234^{*}$
	(0.082)	(0.121)
Spouse	-0.313**	-0.161
	(0.149)	(0.103)
Past inheritance expectate	ion	
Self	0.010	-0.030
	(0.018)	(0.021)
Spouse	-0.002	-0.013
	(0.020)	(0.024)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,802	2,802
Households	749	749

Table A.4: Main results for couples aged 25–60

	Husbands	Wives
Inheritance recipient		
Self	0.266***	$0.233^{*}$
	(0.090)	(0.120)
Spouse	-0.322**	-0.134
	(0.151)	(0.110)
Past inheritance expectate	ion	
Self	0.004	-0.009
	(0.019)	(0.024)
Spouse	0.003	-0.022
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,781	2,781
Households	764	764

Table A.5: Main results for couples aged less than 65

	Husbands	Wives
Inheritance recipient		
Self	0.283***	0.236**
	(0.082)	(0.120)
Spouse	-0.316**	-0.157
	(0.149)	(0.102)
Past inheritance expectate	ion	
Self	0.007	-0.014
	(0.018)	(0.023)
Spouse	0.004	-0.031
•	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,852	2,852
Households	771	771

Table A.6: Main results excluding first differences in wealth, income and employment status

	Husbands	Wives
Inheritance recipient		
Self	0.282***	$0.220^{*}$
	(0.081)	(0.113)
Spouse	-0.322**	-0.154
	(0.149)	(0.101)
Past inheritance expectati	ion	
Self	0.007	-0.014
	(0.018)	(0.023)
Spouse	-0.001	-0.026
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

Table A.7: Main results including zeroes and negative values for incomes and wealth

	Husbands	Wives
Inheritance recipient		
Self	0.203***	$0.147^{*}$
	(0.072)	(0.089)
Spouse	-0.192*	-0.196**
	(0.112)	(0.08)
Past inheritance expectate	on	
Self	-0.013	-0.017
	(0.012)	(0.016)
Spouse	0.016	-0.003
	(0.014)	(0.014)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	6,163	6,163
Households	1,324	1,324

Table A.8: Placebo analysis: random inheritance dummy variable

	Husbands	Wives
Inheritance recipient		
Self	0.120	-0.112
	(0.098)	(0.156)
Spouse	-0.065	-0.188
	(0.131)	(0.145)
Past inheritance expectat	ion	
Self	0.008	-0.010
	(0.018)	(0.023)
Spouse	-0.002	-0.031
_	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,856	2,856
Households	772	772

Table A.9: Main results excluding households who exhibit extreme jumps in consumption

	Husbands	Wives
Inheritance recipient		
Self	0.327***	0.272**
	(0.081)	(0.116)
Spouse	-0.306*	-0.215**
	(0.159)	(0.104)
Past inheritance expectation	on	
Self	0.005	-0.010
	(0.018)	(0.023)
Spouse	0.005	-0.031
	(0.020)	(0.021)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,765	2,765
Households	769	769

Table A.10: Household fixed effects estimates

	Husbands	Wives
Inheritance recipient		
Self	0.208*	0.233
	(0.111)	(0.166)
Spouse	-0.353**	-0.146
	(0.175)	(0.121)
Past inheritance expectate	on	
Self	0.034	0.050
	(0.053)	(0.066)
Spouse	-0.050	-0.081
	(0.055)	(0.063)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,318	2,318
Households	479	479

## B Liquidity constraints

Table B.1: Main results excluding households who have a LAR of less than 2.5%

	Husbands	Wives
Inheritance recipient		
Self	0.287***	$0.237^{*}$
	(0.083)	(0.122)
Spouse	-0.320**	-0.151
	(0.149)	(0.102)
Past inheritance expectate	ion	
Self	0.005	-0.020
	(0.020)	(0.024)
Spouse	0.003	-0.033
_	(0.021)	(0.023)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,625	2,625
Households	706	706

Table B.2: Main results excluding households who have a LAR in the first quintile

	Husbands	Wives
Inhanitan sa masini ant	1140001140	,,,,,,
Inheritance recipient	O Od Albibb	
Self	0.314***	$0.356^{***}$
	(0.088)	(0.134)
Spouse	-0.407**	-0.155
	(0.187)	(0.106)
Past inheritance expectate	ion	
Self	-0.000	-0.038
	(0.022)	(0.026)
Spouse	0.019	-0.025
•	(0.022)	(0.026)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	2,257	$2,\!257$
Households	628	628

## C Persistence analysis

Table C.1: Limited commitment results

	Husbands	Wives
Inheritance recipient at t		
Self	0.280**	$0.279^*$
	(0.117)	(0.151)
Spouse	-0.416**	-0.221*
	(0.197)	(0.124)
Inheritance expectation at	t-1	
Self	0.076	0.014
	(0.054)	(0.059)
Spouse	0.004	-0.044
	(0.045)	(0.062)
Inheritance recipient at t	– 1	
Self	0.138	-0.099
	(0.135)	(0.137)
Spouse	0.336	0.186
	(0.242)	(0.146)
Inheritance expectation at	t-2	
Self	-0.015	-0.020
	(0.055)	(0.056)
Spouse	0.009	-0.017
-	(0.046)	(0.062)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Observations	1,721	1,721
Households	479	479