The price of breaking up: Wage shocks and household dissolution

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Abstract

Household dissolution is a key concern in family economics, with implications for individual welfare, child outcomes, income trajectories, or wealth, which ultimately impact inequality and vulnerability. This paper examines how wage dynamics relate to the stability of dual-earner households, using a collective model with limited commitment, where spouses commit to future behavior subject to individual rationality constraints, allowing for renegotiation of intrahousehold arrangements or household dissolution. We use data from the PSID over 1999-2019, and estimate how spouses' wage changes relate to divorce, accounting for observed behaviors, demographics, and unobserved heterogeneity. The results show that large negative wage changes significantly increase the likelihood of divorce, while positive changes have no effect, as the model predicts. This pattern is consistent with asymmetric intrahousehold insurance, highlighting the role of economic risk and bargaining asymmetries in shaping family dynamics, and informs policies targeting household vulnerability to income shocks.

Keywords: collective model; commitment; divorce; wages; PSID data.

JEL classification: D12; D13; J12; J31.

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1 Introduction

Household instability, particularly divorce, is a key concern in family economics and the economics of the household (e.g., Becker, 1993; Weiss and Willis, 1997; Chiappori, 2017). It has long-term implications for individual welfare and health (Amato, 2000; Gardner and Oswald, 2004; Averett et al., 2008; Guner et al., 2018), child outcomes (Gruber, 2004), income and labor market trajectories (Fernández and Wong, 2014), and wealth accumulation and its transmission (Kapelle, 2022). Besides that, household behaviors related to intrahousehold allocation, specialization, or fertility, among others, crucially depend on the possibility of divorce (Chiappori, 2017). Divorce rates remain high across advanced economies (OECD, 2023), and in the US, between 30% and 50% of marriages end in divorce (Reynoso, 2024). Besides, the economic consequences of marriage and separation are often asymmetric across spouses, depend on human capital and earnings, and are persistent over time (Loughran and Zissimopoulos, 2009; Lundberg et al., 2016; Fernández and Wong, 2017). Despite extensive research on the causes and consequences of divorce,[1] little is known about how income shocks within couples —a central element of household economic risk— shape household dissolution, as many existing empirical analyses often overlook the contractual nature of marriage, abstract from within-household dynamics, and ignore renegotiation or commitment despite their central role in household decision-making (Chiappori, 2017).

In this context, this paper analyzes to what extent wage dynamics of spouses trigger divorce in dual-earner households. We address this question from a collective model (Chiappori, 1988, 1992). More specifically, we use a collective model with limited commitment (Mazzocco, 2007), which provides a clear theoretical structure to analyze the link between income risk, limits to commitment, intrahousehold behavior, and household dissolution. The model assumes that couples make Pareto-efficient decisions, subject to individual rationality constraints. Spouses cooperate, but only as long as each prefers the current intrahousehold arrangement to their outside option (Chiappori and Mazzocco, 2017). Individual rationality constraints can bind over time due to shocks to the economic environment, and this situation triggers a renegotiation of the intrahousehold contract. If renegotiation fails after such a shock, spouses choose their outside option, and the household dissolves. In summary, we assume that wage changes can shift the relative value of remaining married versus separating (Mazzocco, 2007; Lise and Yamada, 2019; Theloudis et al., 2025), and large shocks can cause constraints to bind and the household to dissolve.

We use the Panel Study of Income Dynamics (PSID) over the period 1999–2019. The

[1] Voena (2015), Fernández and Wong (2017), and Reynoso (2024) are excellent recent analyses of divorce and its relationships with household behavior, the marriage market, and the labor market.

PSID is a biennial, nationally representative longitudinal survey of US households. The key outcome of the analysis is households' dissolution (separation or divorce), which we identify in the PSID by exploiting its longitudinal structure and households' composition. We also define wages, as well as household employment outcomes and observables available in the PSID. This allows us to test whether recent or accumulated wage changes predict household dissolution, consistent with the limited commitment model. The identification relies on within-household variation in wages and behavior, exploiting the panel structure of the data and controlling for both observables and unobservable heterogeneity, which helps mitigate potential omitted variable bias and the role of unobserved heterogeneity.

The results indicate that wage decreases, particularly large and recent ones, are significantly associated with a higher probability of household dissolution. In contrast, wage increases do not predict separation. This suggests that positive shocks are either absorbed within the couple or lead to successful renegotiation of the intrahousehold contract, as the model predicts, whereas negative shocks lead to situations in which renegotiation is not feasible. The results are consistent across multiple model specifications, including those with lagged information, with household fixed effects, and those using different thresholds for shock magnitude.

We contribute to the literature on household behavior by providing empirical evidence on a central prediction of collective models with limited commitment. Previous work has tested aspects of intrahousehold bargaining under different commitment regimes, such as labor force participation (Blau and Goodstein, 2016), the dynamics of labor supply (Theloudis et al., 2025), time allocation (Lise and Yamada, 2019), or consumption (Mazzocco, 2007), with results aligning with limited commitment. Other authors have also studied different behaviors under specific commitment regimes, such as unilateral divorce and labor supply (Voena, 2015), the marriage market (Chiappori et al., 2018; Reynoso, 2024; Blasutto and Kozlov, 2025), various welfare effects (Low et al., 2018; Foerster, 2024), home production (Goussé et al., 2017), or the demand for housing (Rock et al., 2023).[2] Conversely, this paper focuses specifically on the prediction that wage changes can trigger household dissolution when renegotiation of intrahousehold allocations is not feasible.

Secondly, we differentiate between positive and negative wage changes, reporting asymmetric effects on divorce risk. Unlike earlier studies that use net or absolute wage changes (e.g., Blundell et al., 2016), or use only positive shocks to the household economic envi-

[2]Our paper also relates to Fernández and Wong (2017), who analyze the welfare implications of the shift in US divorce laws during the 1970s from mutual consent to unilateral divorce. They develop a lifecycle model with full commitment, in which individuals make decisions under different divorce regimes, and find that the increased ease of divorce under unilateral regimes may disadvantage women.

ronment, such as inheritances, inter vivos transfers, or lottery wins (Blau and Goodstein, 2016; Bø et al., 2019; Suari-Andreu, 2023; Suari-Andreu et al., 2024; Belloc et al., 2025), this paper explicitly distinguishes the direction of shocks. Our model predicts that only negative income changes should increase divorce probability, while positive changes should not increase it. The theoretical and empirical finding that only negative wage changes increase divorce probability provides new evidence on the asymmetric structure of intrahousehold insurance and deepens our understanding of how economic risk is shared (or not shared) within couples.

The remainder of the paper is structured as follows. Section 2 describes the limited commitment collective model, which serves as the theoretical setting for the analysis, and presents a simple model of divorce with limited commitment. Next, Section 3 describes the data, the estimation sample, and the variables, as well as the econometric strategy. Section 4 shows the main results, and Section 5 concludes.

2 Theoretical framework

2.1 The limited commitment collective model

Our theoretical framework is based on the collective model (Chiappori, 1988, 1992), which relies on cooperative game theory and assumes that spouses cooperate to reach Pareto-efficient outcomes. In particular, the theoretical framework is that of a collective model under limited commitment (Mazzocco, 2007; Chiappori and Mazzocco, 2017; Theloudis et al., 2025), where spouses can renegotiate the terms of their cooperation if certain conditions, the so-called individual rationality (IR) constraints, are no longer met (Mazzocco, 2007).

At the start of the relationship, spouses $i = 1, 2$ agree on how to allocate resources based on their initial situation, such as wages (denoted w), wealth (denoted a), or other information available at such date. This agreement defines their initial intrahousehold contract and reflects their relative bargaining power through what are called Pareto weights (denoted μ). The agreement remains in force unless one spouse's IR constraint is violated, that is, unless the spouse would be better off in his/her *outside option* —e.g., divorce or the household's dissolution (Voena, 2015). In other words, IR constraints ensure that spouses always enjoy their joint household, under the applicable intrahousehold contract, more than or as much as they would enjoy being divorced.

The intuition is as follows. Spouses commit at the beginning of the marriage to future allocations up to the point at which one's IR constraint is violated. If no IR constraints are violated, the initial Pareto weights (and thus the initial intrahousehold contract) remain constant over time. However, once an IR constraint is violated, spouses' bargaining positions need to be renegotiated, with two possible outcomes. First, if said renegotiation is feasible, in the sense that a new contract exists that satisfies *both* IR constraints, then the new contract involves an increase in the Pareto weight of the constrained spouse, so that the corresponding IR constraint is exactly satisfied. As a result, his or her bargaining position increases, and the bargaining position of the partner decreases (Mazzocco, 2007; Chiappori and Mazzocco, 2017; Theloudis et al., 2025). Alternatively, if the renegotiation is not possible, the household comes to an end, and spouses divorce.

Then, a key aspect of the model is when IR constraints are violated and subsequent renegotiation takes place. The initial intrahousehold contract is determined in terms of the information available to spouses when the household is formed, such as initial wages w_{10} and w_{20}, initial wealth a_0, or some initial distribution factors and future expectations.[3] But the realization of wages, wealth, or other variables at some future date, which ultimately affect the household economic environment, may differ from expectations and could make outside options more attractive for spouses.[4] For example, a given spouse may experience an unexpected wage change, which may increase or decrease the value of his or her outside option. If this change is small, the IR constraint may not bind, and the previous intrahousehold contract holds. However, a large change may cause an IR constraint to bind under the existing contract. If a renegotiation is feasible, the marriage continues under a new contract (Theloudis et al., 2025). However, the renegotiation may not be feasible, and thus the household dissolves and the spouses divorce.

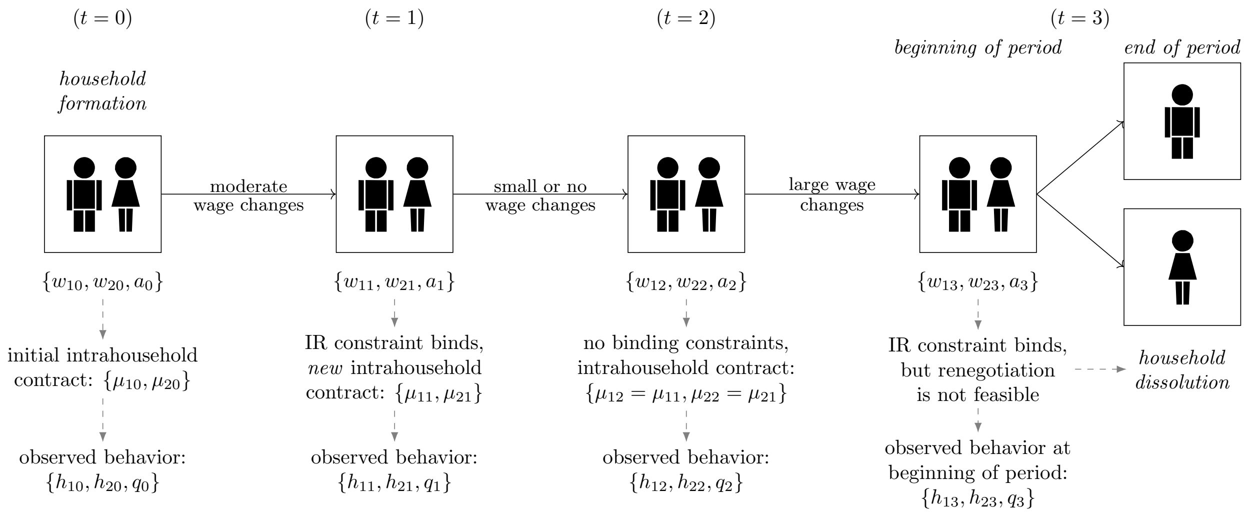
Figure 1 shows an example. The household is formed at $t = 0$, and spouses come to an agreement that is summarized by the initial weights $\{\mu_{10}, \mu_{20}\}$ in terms of their initial wages and the household's wealth $\{w_{10}, w_{20}, a_0\}$. This contract is unobserved, but can be identified through spouses' observable behavior, e.g., work hours and consumption, denoted $\{h_{10}, h_{20}, q_0\}$ (see Chiappori et al., 2002). Then, one spouse experiences a moderate wage change that causes an IR constraint to bind at $t = 1$, and a renegotiation of the intrahousehold contract is feasible. Therefore, the Pareto weights $\{\mu_{11}, \mu_{21}\}$ are updated during $t = 1$ to reflect the new intrahousehold contract, which determines the behavior of spouses $\{h_{11}, h_{21}, q_1\}$. Afterwards, spouses experience small or no wage changes between periods 1

[3]Distribution factors are variables that determine the intrahousehold allocation of resources but do not affect spouses' preferences or the budget constraint.

[4]There may be other variables that make IR constraints binding, such as inheritances (Blau and Goodstein, 2016), stochastic distribution factors such as divorce laws (Chiappori et al., 2002; Voena, 2015), or shocks to spouses' attractiveness (Chiappori et al., 2012; Theloudis et al., 2025).

and 2, so no IR constraint binds, and the contract established at period 1 holds at $t = 2$. In other words, the Pareto weights do not change. However, between periods 2 and 3, one spouse experiences a large wage change that makes his or her IR constraint binding, and renegotiation is not feasible at $t = 3$, because any allocation satisfying one member's IR constraint must violate the partner's. As a consequence, during period 3, the household dissolves and the spouses divorce.[5]

Figure 1: Illustration of the model with an example



In summary, according to the limited commitment collective model, household dissolution is determined by changes in the household economic environment *before* the household dissolves (as well as changes in stochastic distribution factors, like shocks to anthropometric measures, attractiveness, the marriage market, or laws governing divorce), and by the applicable intrahousehold contract *before* the dissolution. This contract, however, cannot be observed but is identifiable through household behaviors such as consumption or labor supply. In summary, if a couple divorces between periods t and $t + 1$, this divorce should depend on the latest changes, but also on earlier changes (through the determination of the Pareto wieghts at date t). Such changes, in turn, are reflected in previous previous household observed behaviors.

2.2 A simple model of divorce

We now illustrate these ideas with a simple limited commitment collective model of divorce.

[5]An important remark is that, in the previous example, the econometrician typically cannot observe the exact moment of the household dissolution. We assume that at the *beginning of* period 3, the wage changes are realized. *During* period 3, spouses try to renegotiate, but as said renegotiation is not feasible, they arrive at future period $t = 4$ divorced.

Marriage

We start with a simple framework in which spouses $i = 1, 2$, endowed with some idiosyncratic income, consume two commodities, one private (denoted C) and one public within the household (denoted Q). Preferences over consumption are Cobb-Douglas:

$$u^i = \log C^i + \log Q,$$

so that any efficient outcome solves the program:

$$\begin{aligned} &\max\ \log C^1 + \log Q + \mu \left(\log C^2 + \log Q\right) \\ &\text{s.t.: } C^1 + C^2 + PQ = y_1 + y_2, \end{aligned} \tag{1}$$

where y_i is i's income, P is the market price of the public good, and μ is the Pareto weight of spouse $i = 2$.

Solutions of program (1) are:

$$C^1_M = \frac{y_1 + y_2}{2(1+\mu)}, \quad C^2_M = \mu\frac{y_1 + y_2}{2(1+\mu)}, \quad PQ_M = \frac{y_1 + y_2}{2},$$

giving individual utilities when married equal to:

$$\begin{aligned} \bar{u}^1_M =& 2\log(y_1 + y_2) - \log(4(1+\mu)P), \\ \bar{u}^2_M =& 2\log(y_1 + y_2) - \log(4(1+\mu)P) + \log\mu. \end{aligned}$$

Note, in particular, that if $U^i_M = \exp(u^i_M)$ for $i = 1, 2$, the solution of (1) yields:

$$\bar{U}^1_M + \bar{U}^2_M = \frac{(y_1 + y_2)^2}{4P}.$$

We see that, for any realization of incomes, the sum of individual utilities is constant for all efficient allocations. This implies that the model is a transferable utility (TU) one (see Chiappori and Gugl, 2020). We denote $U^1_M + U^2_M = U^H_M(y_1, y_2)$, and any efficient allocation that solves (1) maximizes U^H_M.

Divorce

In what follows, we assume limited commitment. Namely, agents are each faced, at each period, with an outside option, that they cannot commit not to use. It follows that, at each period, the intrahousehold allocation must satisfy the corresponding IR constraints. If such allocations exist, one will be reached, possibly after renegotiation of the initial agreement. If not, divorce occurs.

In order to get more precise results, one needs to define the nature of the outside option. Following most of the literature, we first assume that, after divorce, individuals remain single. In particular, they each independently purchase a specific amount of the (previously public) good Q. Technically, if divorced, each agent $i = 1, 2$ solves:

$$\begin{aligned} &\max \ \log C^i + \log Q^i \\ &\text{s.t.: } C^i + PQ^i = y_i. \end{aligned} \tag{2}$$

The solution of program (2) is given by the following demands and utilities:

$$C_S^i = PQ_S^i = y_i/2, \quad u_S^i = 2\log y_i - 2\log 2 - \log P, \quad i = 1, 2.$$

Using the same cardinalisation as above:

$$U_S^i(y_i) = \frac{y_i^2}{4P}, \quad i = 1, 2,$$

and thus the marital surplus created can be expressed as:

$$S(y_1, y_2) = U_M^H(y_1, y_2) - U_S^1(y_1) - U_S^2(y_2) = \frac{y_1 y_2}{2P}.$$

An appealing property is that this surplus S is supermodular: $\partial^2 S/\partial y_1 \partial y_2 = (2P)^{-1} > 0$, implying *assortative matching*.

Stochastic shocks and singlehood after divorce

In order to analyze divorce, one needs to introduce random shocks affecting the couple. Still assuming, for the time being, that individuals remain single after divorce, we posit that the actual surplus is now:

$$\tilde{S} = S(y_1, y_2) + \varepsilon,$$

where ε is a random shock describing match quality —i.e., in practice, any unobservable factor affecting welfare within marriage.

In this TU framework, moreover, the Becker-Coase theorem applies (see Chiappori et al., 2015). Indeed, for any realization of the shock, the Pareto frontiers corresponding respectively to divorce and maintained marriage cannot intersect; one must be included within the other, and efficiency then requires the larger one to be adopted. In practice, the couple splits if and only if the resulting surplus $\tilde{S}$ is negative; indeed, this property implies that no renegotiation of the initial agreement can provide each partner with at least their outside option.

This formulation has two consequences. First, the divorce probability is defined by:

$$\Pi = \Pr(\text{Divorce}) = \Pr(\varepsilon < -S(y_1, y_2)) = F_\varepsilon(-S(y_1, y_2)),$$

where F_ε (respectively f_ε) denotes the cumulative distribution function (density) of ε. Therefore, for $i = 1, 2$, $i \neq -i$:

$$\frac{\partial \Pi}{\partial y_i} = -f_\varepsilon \frac{\partial S}{\partial y_i} = -f_\varepsilon \frac{y_{-i}}{2P} < 0,$$

implying that wealthy couples are less likely to divorce. Secondly, the impact of changes in individual incomes is unambiguous; namely, an increase in any income reduces divorce probability (and conversely any reduction increases the chances of divorce).

The underlying intuition is simple. Increasing (say) husband's income boosts his reservation utility, possibly more than his marital utility *under the initial agreement*. But it also increases the total surplus —that is, the sum of individual utilities when married increases more than the sum of individual utilities when divorced. This leaves more room for renegotiation, and divorce is less likely to occur. On the contrary, a negative shock to the husband's income decreases the wife's marital utility without changing her reservation utility. And more importantly, it decreases the aggregate surplus, which makes renegotiation much harder and divorce more likely.

While the model just presented is very simple, its basic message is in fact general. Most matching models rely on a surplus that is both increasing and supermodular in individual incomes. These two features are needed to explain two very robust empirical patterns, namely a lower divorce rate for wealthier households and positive assortative matching on income. They also imply that a positive shock to one spouse's income raises the *surplus* generated by marriage —i.e., increase total utility within marriage *more than* individual utilities outside marriage. This is exactly the reason why they are easier to be renegotiated away. Conversely, a negative shock lowers the surplus, which leaves less room for a successful renegotiation and ultimately makes divorce more likely. In other words, the conclusions reached in our simple, CD example hold true in general.

Remarriage

Things are different if individuals remarry immediately after divorcing. Indeed, an increase in the husband's (say) income may result in a mismatch, in the sense that he could a priori hope to be mated with a higher income wife. If the market is large enough, and if frictions on the remarriage market are weak enough, one can expect a series of remarriages that would recreate the (optimal) assortative matching.

In other words, remarriage introduces a second determinant of the divorce decision, namely the willingness to 'rematch'. Regarding the impact of a positive shock, this element tends to work against the initial conclusion. If marriage leads to singlehood, positive shocks reduce divorce probability; if it ends up in rematching, they increase it. The final outcome is likely to depend, among other things, on the probability of remarriage. Yet, supermodularity implies that the gain from rematching —here, marrying a spouse with higher income— is larger for wealthier individuals.

For negative shocks, however, the two impacts converge —the perspective of rematching, if anything, further increases the likelihood of divorce. All in all, one should expect a clear difference between the two types of shocks, with divorce rates being much more responsive to negative shocks. This is what we will test below.

3 Data and strategy

3.1 The PSID data

We use public data from the PSID for the period 1999 to 2019. The PSID is administered by the University of Michigan and was established in 1968 as an extensive, nationally representative survey of US families (Panel Study of Income Dynamics, 2021). The PSID is a retrospective panel household survey that includes a wide range of information for all members of interviewed households, such as employment outcomes and income, alongside other relevant details. The PSID underwent a significant expansion in 1997, enhancing its scope to encompass additional topics, including consumption and wealth since 1999.[6] Concurrently, it transitioned to a biennial collection schedule.

For our analysis, we retain information from households comprised of married or un-

[6] The fact that we focus on the period 1999 to 2019, when no major shifts in divorce law occurred in the US, ensures a relatively stable institutional context and allows the focus to remain on economic mechanisms rather than legal reforms, in contrast to Voena (2015) and Fernández and Wong (2017).

married spouses (Grossbard, 2014). We select only working couples, meaning both spouses participate in the labor market and report positive market work hours and wages, as our model involves wage changes and unemployed individuals do not report wages, mimicking existing recent analyses on household dynamics using the PSID (e.g., Blundell et al., 2016; Theloudis et al., 2025). Additionally, complete data on demographic and labor outcomes, as well as non-zero information on consumption and wealth, are required.

Furthermore, since the model involves wage changes, we need to define some variables in first differences, and thus we include in our sample households that meet the aforementioned criteria and are followed for at least three consecutive periods (i.e., that allow us to define wage changes at least at dates t and $t-1$), to ensure that our econometric analysis runs always over the same households.[7] These criteria result in a sample of 2,630 distinct households (i.e., 2,630 husbands and 2,630 wives). On average, a household is observed for 5.75 periods, amounting to our sample consisting of 15,113 observations (households $\times$ years). Due to the requirement for first-difference variables, estimation samples are smaller: 12,290 observations if current wage changes are considered, or 9,467 observations if current and past wage changes are included, corresponding always to the 2,630 households in the sample.

3.2 Variables

The PSID allows us to define the required variables to estimate households' separation in reduced form, as derived from the limited commitment lifecycle collective model. Specifically, the PSID allows us to define spouses' market work hours, wages, and demographics. Spouses' market work hours in the PSID are reported in hours per year, while wages are computed as individual annual earnings divided by annual hours of work, thus providing a measure in dollars per hour. Regarding spouses' demographics, we define spouses' age, race, and education level, as well as the household composition, the number of children, the age of the youngest child, and the state of residence.[8]

We also define household consumption expenditures, earnings, and wealth. Household earnings represent the sum of the labor earnings of both spouses, while household wealth is constructed in the PSID as the value of household assets minus debt, plus the value of home equity. Regarding consumption, the PSID includes data on various items that we

[7]Given the biennial nature of the PSID over the analyzed period, the first difference of a given variable is defined as the value of that variable in a given period minus its value in the previous period, i.e., two calendar years earlier, consistent with Blundell et al. (2016), Theloudis (2021) and Theloudis et al. (2025).

[8]Education is categorized into four groups: individuals with a doctorate, university graduates, those who completed high school but did not graduate, and those who did not complete high school. Race is identified with three dummy variables indicating whether respondents self-report as white, as Black, or as other.

aggregate to define household expenditure. This excludes health insurance, hospital bills, and vehicle repairs due to inconsistent data series before and after 2013. Consequently, our consumption expenditure measure comprises expenditures on food (both inside and outside the home), children's expenses (school and childcare), vehicles (gas, parking, and insurance), public transport, health and drugs, and utilities (electricity and water), following existing research on household expenditure with the PSID (e.g., Theloudis, 2021).[9]

Finally, the PSID allows us to identify the pivotal variable of the analysis: the dissolution of households. The PSID follows individuals in interviewed households even if the household dissolves and interviewees become single or form a new, different household. We can identify these scenarios in the sample. For example, for a couple that separates, the marital status would change from one wave to the next, and for a (e.g.,) husband that separates and forms a new, different household, a different identifier would be observed for the new wife. We thus define a dummy variable for all the households in the sample that takes value 1 if the couple has separated between periods t and $t+1$ for whichever reason, and value 0 if the couple has not separated. An important limitation is that we do not observe the exact date of divorce, nor the behaviors and outcomes just before and after the divorce (e.g., the exact wage, hours worked, or consumption immediately before and after divorce).

3.3 Descriptive statistics

Table 1 shows the summary statistics for the key spousal and household variables among the households in the estimation sample. For instance, the average husband in the sample earns \$36.1 per hour, while the average wife earns \$27.0 per hour, with the difference being statistically significant ($p < 0.001$). Furthermore, the average wage change experienced by husbands is 3.7%, versus the 4.3% experienced by wives, with the difference not significant at standard levels ($p = 0.341$).[10] On the other hand, husbands spend about 2,221 hours per year on market work, and wives spend 1,749 hours, with the difference being highly significant ($p < 0.001$). These trends align with the findings of previous research (e.g., Blundell et al., 2016).

Regarding demographics and household characteristics, the average age of husbands (wives) is 43.0 (41.3) years; 92.7% (93.4%) are white; 49.7% (51.4%) have attended college; and 21.4% (26.8%) have done some postgraduate work. Furthermore, the average household is formed by 3.2 members, has 1.0 children, and the age of the youngest child is 3.9 years.

[9] All monetary amounts are expressed in 2018 dollars.

[10] The density of wages and the growth rate of wages of husbands and wives are shown in Figures A.1 and A.2 in the Appendix A. The main moments of wage changes are shown in Table A.1.

Table 1: Descriptive statistics

	Males		Females	
Variables	mean	std.dev.	mean	std.dev.
Hourly wage	36.10	36.94	26.96	23.85
Wage growth	0.037	0.522	0.043	0.511
Work hours (/1,000)	2.221	0.614	1.749	0.661
Age	43.02	10.54	41.35	10.44
Being white	0.927	0.261	0.934	0.248
Being black	0.046	0.210	0.037	0.188
% high-school	0.237	0.425	0.198	0.398
% college	0.497	0.500	0.514	0.500
% post-graduate	0.214	0.410	0.268	0.443

	Household-level variables	
Variables	mean	std. dev.
Family size	3.243	1.159
# children	1.031	1.122
Age of youngest child	3.937	5.238
# marriages	1.268	0.543
Family earnings (/1,000)	126.8	103.8
Wealth (/1,000)	384.2	1,227
Expenditure (/1,000)	44.54	25.43
Waves per household	5.746	2.515
# households	2,630	
Observations	15,113	

Notes: The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. Work hours are measured in annual hours; family earnings and expenditure are measured in annual dollars. All monetary amounts are expressed in 2018 dollars.

In addition, the number of marriages of the average reference person in the sample is 1.3. Regarding household economic outcomes, the average household earns $126,827 per year, and its wealth adds up to $384,184, while consumption expenditure is $44,539 per year.

Table 2 shows some additional descriptives on household dissolution and wage changes. First of all, 178 households in the sample get dissolved or divorced while observed in the data, compared to 2,452 households that remain stable while observed. In other words, 6.77% of the households in the sample divorce while observed in the data. We also show that, among households who divorce between periods t and $t+1$, the average husband's wage change at t is -8.1%, while the corresponding wage change among those who do not divorce is 4.4%, with

Table 2: Wage growth and divorce

	Divorced		Non-divorced		
	mean	std.dev.	mean	std.dev.	diff.
Husband wage change:					
at t	-0.081	0.588	0.044	0.534	-0.125^{***}
at $t-1$	0.021	0.545	0.040	0.544	-0.019
Wife wage change:					
at t	-0.038	0.532	0.027	0.537	-0.065
at $t-1$	0.047	0.513	0.050	0.515	-0.003
# households	178		2,452		

Notes: The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

the difference being highly significant. Among wives, those who divorce experience a wage change of about -3.8%, and those who do not divorce experience a wage change of 2.7%, although the difference is not statistically significant at standard levels. These magnitudes suggest that, on average, household dissolution and divorce relate to negative wage changes, while positive wage changes are associated with household continuation.[11]

3.4 Econometric strategy

We estimate the predictions of the collective model regarding divorce as follows. For each household i, residing in region r and observed at period t, we estimate the following equation in our baseline specification:

$$D_{irt+1} = \beta_0 + \underbrace{\beta_{w_1}\Delta \log w_{ir1t} + \beta_{w_2}\Delta \log w_{ir2t}}_{\text{wage changes at } t} + \underbrace{\boldsymbol{\beta}'_X \mathbf{X}_{irt} + \boldsymbol{\beta}'_{LX}\mathbf{X}_{irt-1}}_{\text{observed behavior}} + \underbrace{\boldsymbol{\beta}'_Z \mathbf{Z}_{irt}}_{\text{observables}} + \delta_t + \gamma_r + \varepsilon_{irt}, \tag{3}$$

where D_{irt+1} is a dummy variable that takes value 1 if the household separates during period t and starts period $t+1$ divorced, 0 otherwise; $\Delta \log w_{irjt}$ is the wage growth rate of spouse $j \in \{1, 2\}$; $\mathbf{X}_{irt}$ and $\mathbf{X}_{irt-1}$ are vectors of household behaviors at t and $t-1$ (i.e., spouses' labor supplies, family income, wealth, and expenditures, which characterize the unobserved

[11] Figure A.3 in the Appendix A shows the density of wage growth rates of husbands and wives, differentiating between households who divorce and households that remain stable.

intrahousehold contract); $\mathbf{Z}_{irt}$ is a vector of demographics; δ_t and γ_r are time and region fixed effects; and ε_{irt} is the error term.

However, the theory establishes that not only a large wage change, but also a sequence of current and past wage changes could make IR constraints binding (Theloudis et al., 2025), leading a household to dissolve. Thus, we next estimate an augmented version of (3), which includes wage changes and household observable behaviors in the past, as follows:

$$
\begin{aligned}
D_{irt+1} = \beta_0 + \beta_{w_1}\Delta \log w_{ir1t} + \beta_{w_2}\Delta \log w_{ir2t} + \underbrace{\beta_{w_{1L}}\Delta \log w_{ir1t-1} + \beta_{w_{2L}}\Delta \log w_{ir2t-1}}_{\text{wage changes at } t-1} \\
+ \boldsymbol{\beta}'_X \mathbf{X}_{irt} + \boldsymbol{\beta}'_{LX} \mathbf{X}_{irt-1} + \boldsymbol{\beta}'_{LLX} \mathbf{X}_{irt-2} + \boldsymbol{\beta}'_Z \mathbf{Z}_{irt} + \delta_t + \gamma_r + \varepsilon_{irt},
\end{aligned}
\tag{4}
$$

where the terms $\Delta \log w_{irjt-1}$ represent spouse j's past wage changes, which could also make IR constraints binding due to the memory of the dynamics of the Pareto weights under limited commitment (Theloudis et al., 2025). The remaining terms are estimated as in the baseline equation.

Third, the panel structure of the data allows us to capture and net out household unobserved heterogeneity that is time-invariant by including household fixed effects.[12] Then, we estimate the following equation:

$$
\begin{aligned}
D_{irt+1} = \alpha_i + \beta_{w_1}\Delta \log w_{ir1t} + \beta_{w_2}\Delta \log w_{ir2t} + \beta_{w_{1L}}\Delta \log w_{ir1t-1} + \beta_{w_{2L}}\Delta \log w_{ir2t-1} \\
+ \boldsymbol{\beta}'_X \mathbf{X}_{irt} + \boldsymbol{\beta}'_{LX} \mathbf{X}_{irt-1} + \boldsymbol{\beta}'_{LLX} \mathbf{X}_{irt-2} + \boldsymbol{\beta}'_Z \mathbf{Z}_{irt} + \delta_t + \gamma_r + \varepsilon_{irt},
\end{aligned}
\tag{5}
$$

where α_i represents household fixed effects.

Equations (3), (4), and (5) are estimated using OLS, and estimates are computed with robust standard errors, clustered at the household level, to account for potential heteroskedasticity as well as serial correlation within households (Cameron and Miller, 2015).[13] The intuition of the estimating equations is as follows. Small wage changes should not make IR constraints bind, and moderate changes may trigger a renegotiation of the intrahousehold contract. In these cases, spouses do not make use of their outside options, and marriages continue. However, large wage changes may make IR constraints bind and renegotiation

[12] We can include both household and region fixed effects, as some households move during the analyzed period. However, demographics that are constant over time, such as race and education, are omitted whenever we include household fixed effects.

[13] Because the dependent variable is a dummy variable, alternative approaches could be based on classification models (e.g., logit or probit models). Nevertheless, prior research has shown that OLS produces similar estimates when studying worker behaviors (Frazis and Stewart, 2012; Gershuny, 2012; Foster and Kalenkoski, 2013; Stewart, 2013), and we have thus decided to rely on OLS estimates.

unfeasible, leading spouses to use their outside option, resulting in the end of the marriage. On the other hand, current and past household observables should capture the intrahousehold contract applicable to the periods before the household dissolution. Because whether IR constraints bind depends depends not only on wage changes but also on the previous intrahousehold contract, it is important to control for these variables. Finally, demographics represent taste shifters that may affect household bargaining.

Thus, one would expect to find a significant coefficient associated with wage changes, indicating that shocks to wages indeed lead households to dissolve, conditional on observed behavior before the dissolution. However, the simple theoretical model of divorce predicts that positive and negative wage changes make IR constraints bind, but only the latter should relate to an increased probability of divorce. This could then jeopardize the previous estimates and does not allow one to identify the sign that should accompany the coefficients of interest. To account for this, we estimate a fourth model, as follows:

$$\begin{aligned} D_{irt+1} = \alpha_i &+ \underbrace{\beta_{w_1^+}\Delta\log w^+_{ir1t} + \beta_{w_2^+}\Delta\log w^+_{ir2t}}_{\text{positive wage changes at } t} + \underbrace{\beta_{w_1^-}\Delta\log w^-_{ir1t} + \beta_{w_2^-}\Delta\log w^-_{ir2t}}_{\text{negative wage changes at } t} \\ &+ \underbrace{\beta_{w_{1L}^+}\Delta\log w^+_{ir1t-1} + \beta_{w_{2L}^+}\Delta\log w^+_{ir2t-1}}_{\text{positive wage changes at } t-1} + \underbrace{\beta_{w_{1L}^-}\Delta\log w^-_{ir1t-1} + \beta_{w_{2L}^-}\Delta\log w^-_{ir2t-1}}_{\text{negative wage changes at } t-1} \\ &+ \boldsymbol{\beta}'_X\mathbf{X}_{irt} + \boldsymbol{\beta}'_{LX}\mathbf{X}_{irt-1} + \boldsymbol{\beta}'_{LLX}\mathbf{X}_{irt-2} + \boldsymbol{\beta}'_Z\mathbf{Z}_{irt} + \delta_t + \gamma_r + \varepsilon_{irt}, \end{aligned} \tag{6}$$

where $\Delta\log w^+_{irj\tau}$ and $\Delta\log w^-_{irj\tau}$ represent positive and negative wage changes experienced by spouse j at date $\tau = t, t-1$. Then, one would expect negative and significant coefficients associated with $\Delta\log w^-_{irj\tau}$, and negative or not significant coefficients associated with $\Delta\log w^+_{irj\tau}$.

To sum up, we test how wage changes impact divorce decisions within households, based on a lifecycle collective model under limited commitment. Specifically, we examine whether wage changes trigger divorce by causing the breakdown of existing intrahousehold contracts (IR constraints becoming binding) when a renegotiation of said contracts is not feasible. To assess this, the model incorporates both recent and past wage variations, household economic behaviors, demographics, and controls for time-invariant unobserved factors. Additionally, we separate positive and negative wage shocks to clarify their distinct impact on the probability of household dissolution.

4 Results

4.1 Baseline results

Table 3 shows the main estimates for the three gradually richer models, without differentiating for now between positive and negative wage changes (we return to this below). Column (1) estimates the baseline equation in which we do not account for past wage changes. Column (2) includes past wage changes and older household behavior to capture whether a series of wage changes may trigger household dissolution. Finally, Column (3) controls for household fixed effects to capture and net out potential unobserved heterogeneity from the main estimates. All the estimates include household demographics and observable behaviors, year fixed effects, and region fixed effects.[14]

All three columns show a similar pattern. Coefficients associated with the wage growth of the husband at date t are negative and statistically significant, whereas the coefficient associated with the wage change of the wife is also negative, and statistically significant in the baseline model and in the richest model of Column (3). On the other hand, coefficients associated with wage changes of both spouses at date $t-1$ are not statistically significant at standard levels. This suggests that it is relatively large wage changes at date t that trigger household dissolution, and not an accumulation of changes.[15] Estimates on household observables, shown in Appendix Table A.2, suggest that consumption, family earnings, wealth, and the labor supplies of spouses do not relate to household dissolution.[16]

Negative coefficients associated with spouses' wage changes could indicate a *negative* correlation between wage changes and divorce, which is in line with the predictions of the model. For instance, spouses experience both *positive* and *negative* wage changes, and the negative coefficient may indicate an increase (decrease) in the probability of divorce when spouses experience *negative* (*positive*) wage changes, as the model predicts. We illustrate this in Table 4, which shows the partial effects of wage changes for key moments of the distribution of spouses' wage change. For instance, a *large negative* wage change (e.g., at the first percentile of the distribution) increases the probability of divorce by about 1.6%, regardless

[14]Note that the R-squared meaningfully increases when we account for household fixed effects, indicating significant explanatory power from household-specific unobserved factors. Additional coefficients are shown in Table A.2 in the Appendix A.

[15]The fact that the PSID is biennial prevents us from analyzing wage changes year by year. Future research using other longitudinal databases should shed light on this.

[16]Blundell et al. (2016) and Theloudis et al. (2025) separate wage changes into a lifecycle component that spouses can typically anticipate, and a shock that cannot be anticipated, and argue that it is this latter component which impacts intrahousehold bargaining. We have mimicked their strategy as a robustness check (see Appendix Table A.3). The results and conclusions remain robust to the main estimates in Table 3.

Table 3: Baseline estimates

Variables	(1) Baseline	(2) Past information	(3) Household fixed effects
Hourly wage growth (/100)			
husband (date t)	-0.643^{**}	-1.003^{**}	-0.961^{**}
	(0.271)	(0.403)	(0.420)
husband (date $t-1$)		-0.326	-0.655
		(0.357)	(0.443)
wife (date t)	-0.393^{*}	-0.570	-0.944^{**}
	(0.238)	(0.367)	(0.402)
wife (date $t-1$)		-0.006	-0.486
		(0.322)	(0.368)
Constant	-0.018	0.020	-0.111^{***}
	(0.014)	(0.022)	(0.035)
Demographics	Yes	Yes	Yes
Household t controls	Yes	Yes	Yes
Household $t-1$ controls	Yes	Yes	Yes
Household $t-2$ controls	No	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Household fixed effects	No	No	Yes
Observations	12,290	9,467	9,467
R-squared	0.011	0.013	0.532

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. Additional coefficients are reported in Table A.2 in the Appendix A. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

of who in the household experiences said change. Smaller changes, whether positive or negative, have an economically negligible impact on divorce, while positive changes show a decrease in the probability of divorce, exactly as the model predicts.

However, the current linear specification does not differentiate explicitly between positive and negative wage changes, and imposes symmetry in absolute magnitude for positive and negative changes, potentially masking asymmetric effects, which are typical when analyzing intrahousehold insurance (Blundell et al., 2008; Arellano et al., 2017; Ghosh and Theloudis, 2023; Arellano et al., 2024). In other words, the true impact of wage changes might differ

Table 4: Partial effects along the distribution of wage change

	p1	p10	p25	p75	p90	p99
Husband wage change:						
at t	0.016	0.004	0.001	-0.002	-0.005	-0.016
at $t-1$	0.011	0.003	0.001	-0.001	-0.003	-0.010
Wife wage change:						
at t	0.016	0.004	0.001	-0.002	-0.005	-0.015
at $t-1$	0.007	0.002	0.001	-0.001	-0.002	-0.008

Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. Partial effects computed from coefficients estimated in Table 3, and the main moments of wage changes shown in Table A.1 in the Appendix A.

in magnitude or significance depending on their direction, but this linear approach does not allow such differences to be analyzed. For example, the estimated coefficients in Table 3 —negative and statistically significant— might primarily reflect responses to negative wage changes, rather than positive ones. To partially overcome this issue, we first re-estimate the equations including non-linear terms, but the coefficients associated with quadratic wage changes are not statistically significant at standard levels (see Table A.4 in the Appendix A). Thus, to overcome this limitation, we explicitly split wage changes into separate positive and negative variables, as proposed in the fourth model specification.

4.2 Positive and negative wage changes

Table 5 shows the main estimates of the last specification, in which we differentiate between positive and negative wage changes. Furthermore, Column (1) shows the key estimates when we consider wage changes linearly only, while Column (2) shows estimates when we also include squared wage changes. Both columns include all the controls that were also included in the previous results, namely current and past household behaviors, demographics, and year, region, and household fixed effects.

The results partially align with the predictions of the model, as follows. First, we do not observe any statistically significant coefficient associated with positive wage changes — neither among husbands or wives, nor linear or quadratic. This suggests that positive wage changes do not trigger divorce, as the model predicts. That is to say, whenever spouses face a positive wage change, either it does not involve an IR constraint binding, or, if some IR constraint binds, the intrahousehold contract can be renegotiated (Theloudis et al., 2025). This suggests that spouses are able to share positive shocks and do not use them to dissolve

Table 5: Positive and negative wage changes

Variables	(1) Linear	(2)	(3) Quadratic	(4)
	coeff.	s.e.	coeff.	s.e.
Positive husband wage change (/100)				
at t	−0.264	(0.699)	0.101	(1.037)
squared, at t			−0.140	(0.411)
at $t-1$	−0.431	(0.678)	−0.457	(1.127)
squared, at $t-1$			−0.013	(0.515)
Negative husband wage change (/100)				
at t	−1.504**	(0.699)	−2.259**	(1.047)
squared, at t			−0.297	(0.246)
at $t-1$	−0.560	(0.587)	−2.087*	(1.106)
squared, at $t-1$			−0.401	(0.377)
Positive wife wage change (/100)				
at t	−0.577	(0.621)	−1.006	(1.019)
squared, at t			0.255	(0.240)
at $t-1$	−0.212	(0.541)	−0.111	(0.837)
squared, at $t-1$			−0.054	(0.211)
Negative wife wage change (/100)				
at t	−1.299*	(0.680)	−1.064	(1.018)
squared, at t			−0.208	(0.399)
at $t-1$	−0.714	(0.747)	−1.469	(1.314)
squared, at $t-1$			−0.428	(0.520)
Constant	−0.121***	(0.036)	−0.125***	(0.037)
All controls	Yes		Yes	
Household fixed effects	Yes		Yes	
Observations	9,467		9,467	
R-squared	0.533		0.533	

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

the household. Conversely, negative wage changes associated with both the husband and the wife do enter significantly in the linear specification, and remain similar in the quadratic specification, even though squared terms are not statistically significant at standard levels.

This indicates that estimates regarding negative wage changes align with the predictions of the model. The negative coefficients indicate that negative changes in wages relate to

Table 6: Partial effects with positive and negative wage changes

	p1	p10	p25	p75	p90	p99
Husband wage change:						
at t	0.038	0.009	0.003	0.000	0.000	0.002
at $t-1$	0.018	0.004	0.001	-0.002	-0.005	-0.016
Wife wage change:						
at t	0.035	0.009	0.003	-0.001	-0.002	-0.007
at $t-1$	0.023	0.006	0.002	0.000	-0.001	-0.002

Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. Partial effects computed from coefficients estimated in Table 5, Column (2), and the main moments of wage changes shown in Table A.1 in the Appendix A.

an increase in the probability of the household coming to an end and spouses divorcing. Furthermore, this impact seems to be relegated to wage changes experienced in period t, and not to previous periods, as was also found in the baseline analysis. In summary, negative wage changes at the current date strongly increase the probability of being divorced in the next period. This is especially true for husbands' wage changes, suggesting that husbands display, somehow, a more egoistic behavior than wives —i.e., that the stability of the household is more sensitive to changes in husbands' wages than in wives' wages.

To better illustrate the impact of wage changes on the probability of divorcing, Table 6 shows the partial effects estimated along the key moments of the distribution of wage changes, based on the estimates in Column (2) of Table 5, where we differentiate negative and positive wage changes. At the bottom of the wage change distribution for both husbands and wives (e.g., negative wage changes at the first percentile), we observe a substantial increase in the probability of divorce of about 3.5-3.8 percentage points. This indicates that large negative wage changes significantly increase divorce risk. Lower negative wage changes (e.g., those at the tenth percentile) also increase the risk of divorce, although the impact is smaller (about 0.9 percentage points). However, smaller negative wage changes, or positive wage changes, have a mostly negligible impact on the probability of divorce. The pattern is similar for previous wage changes: large negative changes (evaluated at the first percentile) at $t-1$ increase the probability of divorce by about 1.8–2.3 percentage points, while smaller shocks have a much smaller or negligible impact.[17]

[17] We conduct an additional robustness check, in which we regress divorce on dummy variables that identify households experiencing large or extreme wage changes. Large wage changes are those smaller than the 25th percentile or larger than the 75th percentile. Extreme wage changes are those smaller than the 10th percentile or larger than the 90th percentile. Estimates, shown in Appendix Table A.5, lead to the same conclusions.

In summary, negative wage changes —especially large current-period ones— significantly increase divorce risk. The same applies to past wage changes, although the impact is smaller, as the limited commitment model predicts (Mazzocco, 2007; Chiappori and Mazzocco, 2017; Lise and Yamada, 2019; Theloudis et al., 2025). On the other hand, large positive wage changes do not have such negative effects, while smaller wage changes seem not to affect divorce, as these small changes are unlikely to make IR constraints binding. Finally, the quadratic specification adds limited insight, and the linear specification in which positive and negative wage changes are included separately captures the main patterns clearly.

5 Conclusions

This paper analyzes whether wage changes influence the likelihood of household dissolution (i.e., divorce or separation) among dual-earner couples in the US. The analysis is grounded in a collective model under limited commitment (e.g., Mazzocco, 2007; Chiappori and Mazzocco, 2017; Theloudis et al., 2025). In this framework, couples commit to future behavior unless IR constraints are violated, in which case two potential outcomes occur: renegotiation of intrahousehold allocations, or household dissolution and divorce. The model predicts that IR constraints may bind when the household suffers sufficiently large shocks —positive or negative— to its economic environment, including wage changes (Mazzocco, 2007), but that it is negative changes only which increase the probability of divorce.

Using data from the PSID over the period 1999-2019, we empirically analyze whether wage changes, both recent and past, and positive and negative, are associated with higher divorce risk, controlling for household behaviors and observed and unobserved heterogeneity. We find that negative wage changes, especially large ones, significantly increase the likelihood of divorce, with this pattern being especially relevant for wage changes experienced by husbands. Positive wage shocks, by contrast, have no significant effect on the likelihood of divorce. In summary, our results indicate that divorce risk is driven by negative wage shocks that trigger the violation of IR constraints in the household. The fact that husbands' wage changes seem more relevant suggests that men's economic position plays a more central role in household stability.

The empirical findings align with the predictions of the limited commitment collective model, as wage changes can lead to the breakdown of the household when IR constraints bind and renegotiation of the intrahousehold contract is unfeasible.[18] Besides, we find a

[18] We thus complement previous analyses that have examined intrahousehold commitment in contexts where renegotiation of intrahousehold contracts is feasible only, such as Mazzocco (2007), Blau and Goodstein

clear asymmetry: only negative wage shocks increase divorce risk, while positive ones do not. This is consistent with the idea that couples are able to insure each other against gains but not against losses, highlighting limits to commitment and imperfect insurance against downside risk (Mazzocco, 2007; Blundell et al., 2008; Ghosh and Theloudis, 2023). In other words, the results suggest that when IR constraints bind due to gains, households are more able to renegotiate than when facing losses.[19] Because the effects are stronger for husbands' wage shocks than for wives', we could argue that household stability is more sensitive to the economic position of the husband, perhaps reflecting gendered norms or bargaining power asymmetries (Voena, 2015; Chiappori and Mazzocco, 2017). Finally, the estimates suggest that only current-period wage changes matter significantly in predicting divorce, while past wage changes do not, indicating that it is large wage changes that trigger IR constraints binding, and not the accumulation of small wage changes over time.

The analysis has some limitations. First, the model assumes that divorce occurs when IR constraints bind and renegotiation fails, while divorce decisions may also reflect emotional, psychological, or non-economic factors that the model cannot capture. Relatedly, the model treats the intrahousehold contract as latent, as Pareto weights are in practice unobserved, and then infers it through observable behaviors such as consumption and labor supply. From an empirical perspective, the PSID does not report the exact timing of divorces or the precise behaviors surrounding the divorce date. Besides, it is biennial, limiting the tracking of short-run dynamics (e.g., wage dynamics and divorce may be more tightly linked in the months immediately following shocks, which cannot be identified). The estimation focuses on wage changes among employed individuals, as wages are not observed among the unemployed, and thus we cannot analyze whether job loss may trigger a renegotiation or divorce. Finally, even though we account for time-invariant unobserved heterogeneity, time-varying factors such as marital quality may still confound the relationship between wage changes and household dissolution.

Despite these limitations, some conclusions can be derived from the analysis that may be useful for planners and policymakers. The results highlight the household as an institution vulnerable to economic instability related to negative income shocks. The inability to renegotiate intrahousehold contracts after negative wage shocks may lead to separation, indicating potential welfare losses not only from income loss but also from the breakdown of the household unit. Furthermore, divorce is also associated with negative outcomes for

(2016), Lise and Yamada (2019), and Theloudis et al. (2025).

[19] This indicates that when a given spouse experiences a positive shocks to their wage, the share of the marital pie that the constrainted spouse recieves increase more than the increase of the outside option. Conversely, when the shock is negative, the the share of the marital pie that the spouse receives decreases more than the decrease of the value of the outside option.

children, which opens the door to future analyses studying the transmission of shocks to parents' economic environment to children when intrahousehold arrangements can or cannot be renegotiated. Finally, as the husband's economic environment seems more relevant, policy efforts aimed at stabilizing male employment in vulnerable sectors could have indirect effects on family stability, and programs that mitigate transitory income shocks, such as wage insurance or unemployment benefits, may also reduce the incidence of divorce by preserving the feasibility of existing household arrangements.

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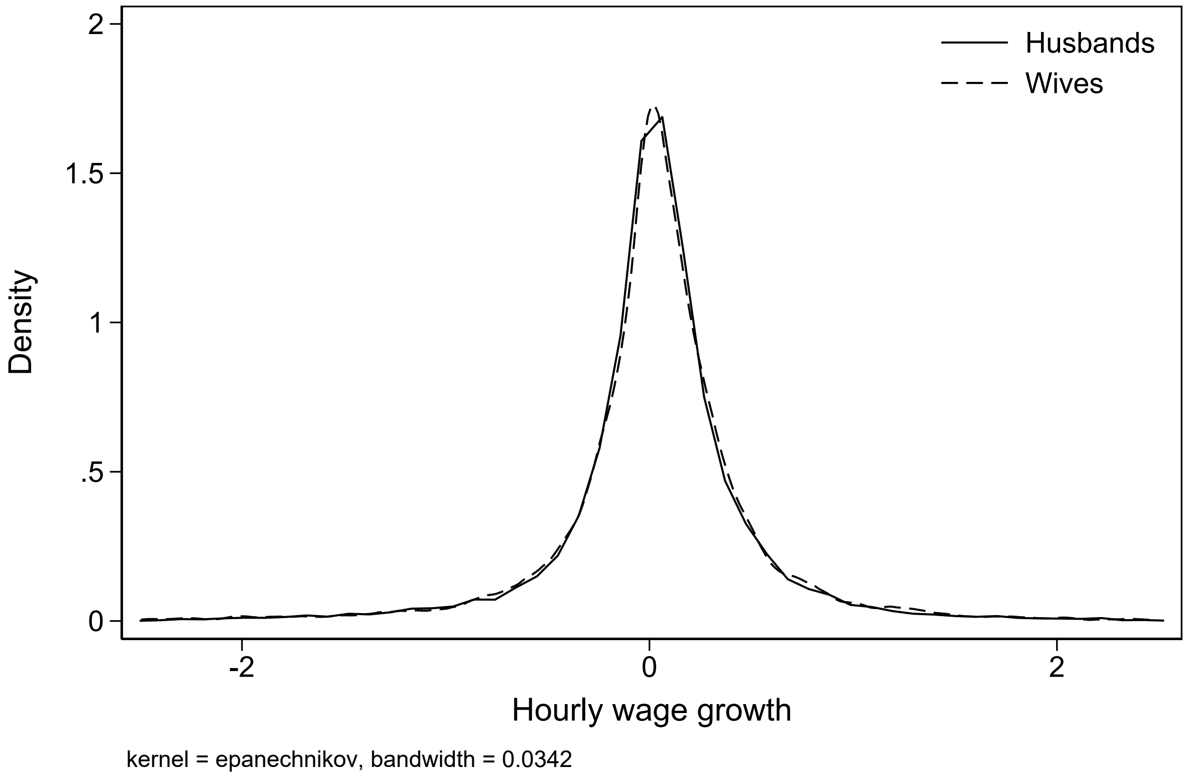
Appendix

A Additional results

Figure A.1: Density of wages

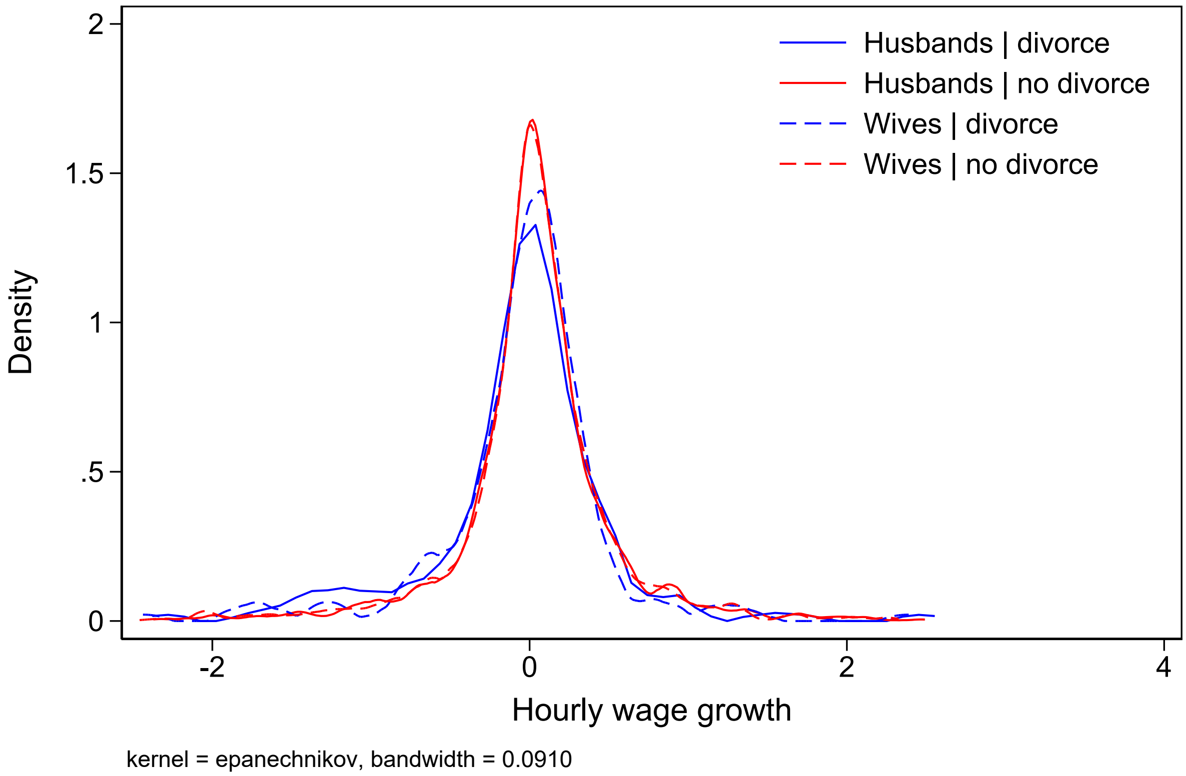
Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods.

Figure A.2: Density of wage growth



Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods.

Figure A.3: Density of wage growth, by divorce status



Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods.

Table A.1: Main moments of wage changes

	p1	p10	p25	p50	p75	p90	p99
Husband wage change	−1.688	−0.389	−0.128	0.036	0.212	0.481	1.624
Wife wage change	−1.713	−0.410	−0.130	0.040	0.235	0.506	1.571

Notes: The sample (PSID 1999-2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods.

Table A.2: Additional baseline estimates

Variables	(1) Baseline	(2) Past information	(3) Household fixed effects
Household controls at t (/e5)			
husband work hours	0.104	0.152	0.024
	(0.230)	(0.304)	(0.431)
wife work hours	−0.089	−0.060	−0.705
	(0.244)	(0.349)	(0.506)
family income	0.002	0.003	0.005
	(0.002)	(0.002)	(0.005)
household wealth	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)
expenditure	−0.007	−0.010	−0.013
	(0.008)	(0.010)	(0.016)
Household controls at $t-1$ (/e5)			
husband work hours	0.023	0.034	−0.296
	(0.252)	(0.386)	(0.419)
wife work hours	0.196	0.358	0.381
	(0.213)	(0.321)	(0.387)
family income	−0.002	−0.004	−0.002
	(0.001)	(0.003)	(0.004)
household wealth	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
expenditure	0.005	0.005	0.000
	(0.008)	(0.011)	(0.012)
Household controls at $t-2$ (/e5)			
husband work hours		−0.001	0.000
		(0.003)	(0.003)
wife work hours		−0.004	0.003
		(0.003)	(0.004)
family income		0.000	−0.000
		(0.000)	(0.000)
household wealth		0.000	−0.000
		(0.000)	(0.000)
expenditure		−0.000	−0.000
		(0.000)	(0.000)
Observations	12,290	9,467	9,467
R-squared	0.011	0.013	0.532

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

Table A.3: Robustness check: wage shocks

Variables	(1)
Hourly wage shock (/100):	
husband (date t)	-1.033^{*}
	(0.563)
husband (date $t-1$)	-0.766
	(0.541)
wife (date t)	-1.064^{*}
	(0.574)
wife (date $t-1$)	-0.769^{*}
	(0.456)
Constant	-0.048
	(0.043)
Household controls	Yes
Demographics	Yes
Year fixed effects	Yes
Region fixed effects	Yes
Household fixed effects	Yes
Observations	6,644
R-squared	0.593

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

Table A.4: Robustness check: quadratic approach

Variables	(1)
Hourly wage change (/100):	
husband (date t)	-0.977^{**}
	(0.431)
husband squared (date t)	0.050
	(0.165)
husband (date $t-1$)	-0.632
	(0.480)
husband squared (date $t-1$)	0.046
	(0.094)
wife (date t)	-0.946^{**}
	(0.401)
wife squared (date t)	0.067
	(0.195)
wife (date $t-1$)	-0.490
	(0.385)
wife squared (date $t-1$)	0.068
	(0.144)
Constant	-0.114^{***}
	(0.035)
Household controls	Yes
Demographics	Yes
Year fixed effects	Yes
Region fixed effects	Yes
Household fixed effects	Yes
Observations	9,467
R-squared	0.533

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.

Table A.5: Robustness check: large and extreme wage changes

Variables	(1) Large changes	(2) Extreme changes
Husband large/extreme negative change at t	0.009**	0.013*
	(0.005)	(0.007)
Husband large/extreme positive change at t	0.001	−0.001
	(0.004)	(0.007)
Husband large/extreme negative change at $t-1$	0.006	0.009
	(0.005)	(0.007)
Husband large/extreme positive change at $t-1$	−0.008*	−0.001
	(0.004)	(0.006)
Wife large/extreme negative change at t	0.008*	0.009
	(0.004)	(0.007)
Wife large/extreme positive change at t	−0.003	−0.009
	(0.004)	(0.006)
Wife large/extreme negative change at $t-1$	0.004	0.010
	(0.004)	(0.007)
Wife large/extreme positive change at $t-1$	0.001	−0.000
	(0.004)	(0.007)
Constant	−0.119***	−0.120***
	(0.035)	(0.036)
Household controls	Yes	Yes
Demographics	Yes	Yes
Year fixed effects	Yes	Yes
Region fixed effects	Yes	Yes
Household fixed effects	Yes	Yes
Observations	9,467	9,467
R-squared	0.533	0.532

Notes: Robust standard errors, clustered at the household level, in parentheses. The sample (PSID 1999–2019) is restricted to two-member households formed by spouses between 21 and 65 years old, with no missing data on key variables, followed for at least three consecutive periods. Large negative wage changes are those smaller than p25; large positive wage changes are those larger than p75. Extreme negative wage changes are those smaller than p10; extreme positive wage changes are those larger than p90. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.