Overstretched: Financial Distress and Intimate Partner Violence in the U.S.*

Olivia Masi† Chiara Santantonio‡

(Job Market Paper)

October 25, 2024

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Abstract

This study examines the effect of financial distress within households on intimate partner violence in the United States. By leveraging the timing of bank closing days and fixed wage payment schedules, we identify months when households have to stretch their finances due to changes in their regular payment schedules. Using monthly records from the National Crime Victimization Survey, we find that these shocks increase the likelihood of women experiencing IPV. We further corroborate the assumption of worsened financial conditions during these periods by documenting changes in household behavior in terms of expenditures and time use. Using Consumer Expenditure Survey (CEX) data, we show that households reduce their expenditures on food and leisure during periods of financial stretch. Additionally, using American Time Use Survey (ATUS) data, we find an increase in time devoted to purchases research. We also observe that spouses spend more time together, particularly with their children, during these periods.

JEL classifications: J12, J16.

Keywords: Gender-related violence, Intimate partner violence, Violence against women, Financial distress

*We are grateful to Sule Alan, Agnès Charpin, Christina Felfe, Andrea Ichino, Jonathan James, Essi Kujansuu, Paola Profeta, and Juan Vargas for their comments and helpful remarks. We also thank participants to seminars at the European University Institute, LUISS University and the University of Bath, as well as at the 2nd Naples School of Economics and Finance PhD and Post-Doctoral Workshop, the AEC 2024, Universitat de Barcelona, Violence against Women Workshop at University of Warwick, Giessen University, EDP Jamboree at PSE, Stockholm SITE Workshop for Women in Political Economics, the 2023 European Winter Meeting of the Econometric Society, the Warwick-St Andrews Workshop for Women in Political Economics, the First International Conference of the Georgian Economic Association, and the EALE 2024 Bergen Conference. Neus Dausà I Noguera provided excellent research assistance.

†Bocconi University, European University Institute, email: olivia.masi@eui.eu

‡University of Bath, Department of Economics, email: cs2983@bath.ac.uk

1 Introduction

Violence against women is a widespread issue, with a significant share occurring within the household, often perpetrated by an intimate partner. In the United States, an estimated 18.3% of women have reported being raped at some point in their lives, with nearly half of these incidents (9.4%) committed by an intimate partner.[1] Similarly, two-thirds of stalking cases involving female victims are committed by intimate partners. Overall, more than 1 in 3 women in the U.S. have experienced rape, physical violence, or stalking by an intimate partner (Black et al., 2011). This aligns with data from the OECD, which indicates that 26% of women in the U.S. have suffered physical and/or sexual violence from an intimate partner, placing the U.S. above the OECD average of 21%. Among all 36 OECD members, the United States ranks 5$^{\text{th}}$ in the incidence of intimate partner violence (IPV).[2]

The consequences of IPV are pervasive, extending far beyond the immediate physical and emotional harm to victims and imposing significant societal costs. These effects include poorer labor market outcomes for victimized women, such as reduced workforce participation and lower earnings (Sabia et al., 2013; Bindler and Ketel, 2022), long-term mental health deterioration in their children (Bhuller et al., 2022), and adverse birth outcomes, including low birth weight and increased under–5 mortality rates (Aizer, 2011; Rawlings and Siddique, 2020; Currie et al., 2022). Additionally, exposure to classmates from families affected by domestic violence is associated with diminished academic attainment and lower future earnings for those exposed (Carrell et al., 2018; Gutierrez and Molina, 2021).[3] Economically, the costs of IPV in the U.S. have been estimated at $3.6 trillion, covering medical expenses, productivity losses, criminal justice activities, and other costs such as property damage (Peterson et al., 2018; Erten and Keskin, 2021). Investigating this issue, along with its drivers and determinants, is paramount to improving understanding and informing public debate. A growing body of literature highlights, among other factors, the detrimental effect of financial hardship on IPV, with a primary focus on major shocks like unemployment (e.g., Bhalotra et al., 2021). However, financial hardship can take various forms, and little is known about how relatively smaller instances of such difficulties may also contribute to IPV.

[1] For comparison, 1.4% (1 in 71) of men report having ever been raped (Black et al., 2011).

[2] Values refer to 2023 (data accessed on 08 May 2023). See OECD at data.oecd.org. Although women can also perpetrate IPV against men, such instances are rarer. For the purposes of this paper, IPV refers specifically to man–to–woman violence.

[3] Adams et al. (2024) also highlight the detrimental economic impacts on women cohabiting with partners who are *later* reported for physical abuse, documenting a decrease in both employment probability and annual earnings after cohabitation begins.

In this paper, we provide evidence on the impact of small, short-term negative shocks to household finances – referred to as *financial distress* – on the likelihood of women being victimized by an intimate partner. To do so, we use monthly records from the U.S. National Crime Victimization Survey (NCVS) covering the period from 1995 to 2019. Building on the strategy proposed by Schaub (2021), we exploit the timing of bank closing days due to weekends and holidays, along with the fixed payment schedule in the private sector, which involves bi-monthly payments on specific calendar dates – the 15$^{\text{th}}$ and the last day of each month. When paydays fall on weekends or national holidays, this causes shifts in payment timing, leading to variations in the number of days between consecutive paychecks. This enables us to identify *months of distress* – months in which households must manage their finances for longer periods (i.e., *stretch* their finances) due to changes in the regular payment schedule – and to count the number of days of stretch in a given month. Leveraging the exogeneity of these shifts, we merge this information with NCVS data to causally estimate how this financial shock impacts the incidence of IPV.[4] It is important to note that since the NCVS data do not include information on respondents' payment schedules, we rely on their sector of occupation to identify those potentially affected by this shock. Specifically, we focus on women in couples where at least one spouse works in the private sector. As a result, our estimates represent an intent–to–treat effect.

The main hypothesis is that such a stretch worsens a household's financial conditions, increases stress, and, until the paycheck is finally issued, likely generates tensions within the couple. This, in turn, could lead to an increase in violence, particularly from the husband to the wife. Although the delay in payments we identify represents a relatively small negative shock, it can still cause significant shifts in consumption due to expenses that are harder to postpone, such as rent or bills. Moreover, these changes entail a non-negligible increase in the length of a pay period, ranging from 7% to 20%.[5] The relevance

[4] Schaub (2021) uses variations in the length of pay periods, arising from the interaction between bank closing days and payment schedules (specifically monthly payments), to assess the impact of financial hardship on political participation in Germany. His analysis focuses on cases where a "long" month, i.e., one ending on a weekday, follows a "short" month, i.e., one which ends on a weekend – a scenario he terms "long–month–after–short". He finds that in such months, both turnout intentions and actual turnout tend to be lower, especially among the poor. The main channel through which financial hardship influences voting behavior is its negative effect on psychological well-being and political efficacy. We build on and expand his strategy in several ways: adapting it to a bi-monthly payment scheme, focusing on the intensive margin by measuring the number of days of financial distress rather than the occurrence of distress; and, while Schaub only considers bank closing days due to weekends, our measure also accounts for federal holidays. Additionally, while Schaub treats February as always being a short month, we do not apply this restriction.

[5] As detailed in Section 2.1 and Appendix A, the number of days of stretch ranges from 0 to 3, while a regular pay period is typically 15 days. For instance, if the number of days between paychecks increases to 17 days (2 days of stretch), the length of the pay period increases by $2/15 = 13.33\%$. This range is

of changes in payment timing is further highlighted by recent literature documenting how shifts in the disbursement of SNAP benefits increase domestic violence (Carr and Packham, 2021), as well as the negative effects of delayed payments on psychological well-being (Schaub, 2021). Our analysis appears to support this hypothesis.

First, we find that financial distress significantly increases the incidence of IPV. According to our preferred estimates, one additional day of stretch raises the probability of being victimized by an intimate partner by 20.4% overall and by 21.8% for violent crimes.[6] This effect is non-linear, driven primarily by longer stretches. Notably, stretches occurring towards the end of the month appear to be particularly salient, likely due to non-deferrable expenses during this period, amplifying the financial shock. Our results also suggest that the increase in IPV is concentrated among women in households more vulnerable to financial shocks. These include low-income households, larger households (i.e., with more than two members), households with children, and those with a history of violence, identified as households where the woman has been a victim of IPV at least once. Younger and less-educated women are also disproportionately affected.

We additionally explore heterogeneities related to the source of the shock, as different results could be expected depending on whose paycheck is delayed. We find no significant effect in couples where only one member works in the private sector. We suggest that this is because, unlike in standard bargaining models, the delay does not alter the *actual* relative position of either partner – despite the delay, the same paycheck is eventually received. However, our main findings are stronger when both partners work in the private sector, likely because a larger share of the household's finances is affected. These results indicate that in our setting, the size and intensity of the shock matter more than its source.

We then turn our analysis to uncovering evidence of increased financial hardship during periods of financial distress and explore potential mechanisms through which this can translate into violence. To this purpose, we analyze changes in daily household expenditures – and thereby consumption – using data from the Consumer Expenditure Survey (CEX, 1996–2011) and in daily time use using data from the American Time Use Survey (ATUS, 2003–2019). Consistent with the hypothesis that stretches deteriorate households' financial situation, we find a significant decrease in expenditures on food, particularly food consumed away from home, and on leisure activities during pay periods lasting longer than regularly scheduled. We also observe an increase in time devoted to researching purchases (e.g., comparing prices across stores) and some evidence of a de-

comparable to Schaub (2021), who finds that during long-after-short months, the same income has to cover a period approximately 10% longer.

[6] These effects are with respect to the mean.

crease in time spent on activities involving non-essential spending, especially by women. Notably, we find no increase in expenditures on alcohol or tobacco, ruling out the possibility that our findings on violence are driven by increased alcohol consumption or other abusive behaviors during financial distress. Additionally, we observe spouses spending more time together, particularly with their children, which may suggest a reassignment of household duties. We also find some evidence of women reporting less sleep, potentially indicating general distress. These findings show how financial distress can alter household finances, dynamics, and behaviors, which may contribute to an environment where IPV is more likely to occur.

Previous studies have investigated the effects of financial shocks on domestic violence and IPV. A large part of this literature focuses on severe negative shocks in the labor market, e.g., the Great Recession (Schneider et al., 2016), and on the changes in women's relative position within the household that these entail, e.g., in terms of gender wage gap or unemployment status (Aizer, 2010; Anderberg et al., 2016; Alonso-Borrego and Carrasco, 2017; Erten and Keskin, 2021; Tur-Prats, 2021; Bhalotra et al., 2019, 2021), finding seemingly ambiguous results. For instance, while Aizer (2010) finds that decreases in the wage gap reduce violence against women in California, Alonso-Borrego and Carrasco (2017) find that, in Spain, couples where women work but their partners do not have a higher risk of IPV. In a recent study on Brazil, Bhalotra et al. (2021) show that both male and female unemployment independently cause increases in domestic violence.[7] Other studies have, instead, focused on positive financial shocks such as vouchers or cash transfers, both to women and men (Bobonis et al., 2013; Hidrobo et al., 2016; Buller et al., 2018; Heath et al., 2020), documenting their efficacy in decreasing the incidence of IPV. Bhalotra et al. (2021) also show how unemployment benefits can, to some extent, counteract the negative effect of unemployment.[8]

This paper draws on this literature and makes several key contributions. First, we focus on a short-term, temporary negative financial shock, lasting only a few days at a time, similar to the approach in Schaub (2021). This shock arises from payment delays caused by the calendar and is, therefore, random and unrelated to specific labor market conditions. Importantly, it is not correlated with specific individual characteristics potentially associated with labor market outcomes (e.g., being unemployed) or the probability

[7] Tur-Prats (2021) further documents how these effects can be mediated by cultural and gender-related norms, e.g., those regarding the family structure and the division of roles in the household.

[8] Literature has also investigated the effect on IPV of other factors empowering women and improving their conditions, like higher levels of education (Erten and Keskin, 2018), increased property rights (Amaral, 2017), the gold endowment a woman receives at the time of marriage (Menon, 2020), or divorce laws (Brassiolo, 2016). Gulesci et al. (2020) show that children's level of education can also affect mothers' attitudes toward domestic violence, decreasing acceptance.

of experiencing IPV, as the shock affects everyone paid bi-monthly when it occurs. Additionally, the size of the shock is relatively small compared to more substantial events like unemployment. However, this does not diminish its significance, especially given its frequency. [9] Second, we consider a shock that does not alter the actual bargaining position of either partner in terms of actual wages, as workers will eventually receive their paycheck, albeit delayed. Thus, our findings cannot be explained through classical bargaining models. Instead, they are likely driven by negative emotional cues associated with financial distress, which – combined with gender norms – makes man-to-woman violence more likely, in the spirit of Card and Dahl (2011) and their Loss-of-Control Model. Third, by leveraging a shock not linked to job loss, we can exclude the possibility of an automatic increase in the victim's exposure to the perpetrator. While we acknowledge that this channel cannot be entirely ruled out in our setting, it is important to note that any potential increase in exposure due to our shock is likely to be much smaller than in cases where most of the time previously spent working is now spent at home. Therefore, our estimates are more likely attributable to changes in the household's financial situation – what we term a *financial effect* – rather than a combination of exposure and financial effects. Fourth, while much of the literature has focused on the developing world, we study the U.S., one of the wealthiest countries in the world and one with a notably high incidence of IPV, as previously highlighted. Finally, extending the approach of Schaub (2021), we propose an identification strategy that addresses endogeneity issues common to this literature.

In a related paper, focusing on Illinois, Carr and Packham (2021) show that changes in the timing of SNAP benefit distribution significantly impact domestic violence, with delays in disbursement leading to an approximate 7% increase in domestic abuse.[10] Our focus differs from this paper in two key aspects. First, we do not restrict our analysis to a shock exclusively affecting lower-income households, such as SNAP recipients. Additionally, we extend our analysis to the entire U.S. Second, we focus on changes in wage timing, rather than benefits, which constitute only a portion of a household's total disposable income.

This paper also relates to the broader literature investigating the effects of distress and emotional cues on domestic violence, which documents, among other findings, how IPV increases during natural disasters (First et al., 2017) or after unexpected losses in

[9] Over the 25-year period we consider, we identify 113 months of financial distress. See Table A2 for details.

[10] Like ours, these estimates represent an intent–to–treat effect. Another paper by the same authors examines the broader impact of this policy change on crime, finding no overall increase in crime (Carr and Packham, 2019).

American football matches (Card and Dahl, 2011).

Lastly, this paper builds on and contributes to the literature on pay cycles (Stephens, 2003; Stephens and Unayama, 2011; Berniell, 2018; Baugh and Correia, 2022) and households' responses to income shocks (Parker, 1999; Hsieh, 2003; Shapiro and Slemrod, 2003; Souleles et al., 2006; Stephens Jr., 2006; Shapiro and Slemrod, 2009; Manaresi, 2016), by demonstrating that changes in regular payment schedules can significantly alter expenditure and consumption behavior.

The remainder of the paper is organized as follows. Section 2 details the data and setting. Section 3 describes our empirical strategy. Section 4 presents the main results, including our heterogeneity analysis. Section 5 discusses the robustness checks for our main findings. Section 6 investigates changes in expenditures and time use. Section 7 concludes the paper.

2 Data & Setting

2.1 Defining Financial Distress

A key aspect of our investigation is defining and identifying instances of *financial distress*, as the term can encompass a wide range of situations. In this paper, we follow Schaub (2021) and focus on a specific form of financial distress: the stretching of finances due to changes in the regular payment schedule. To capture this, we exploit the interaction between bank closing days, such as weekends and national holidays, and the frequency with which employees are paid. Specifically, we focus on the fixed bi-monthly payment schedule for employees in the private sector.[11]

Our intuition is as follows. Under a bi-monthly payment scheme, workers receive their salaries twice per month on specific calendar dates, typically on the 15$^{\text{th}}$ and on the last day of the month. When these dates fall on a weekend or a national holiday, the payment is usually moved to the preceding Friday, and the paycheck is received earlier than it was scheduled. However, if the subsequent payment date remains unchanged, the second paycheck must cover a longer period than usual, requiring workers to manage the same amount of money for more days. To clarify, consider the following example: under the *regular* bi-monthly schedule, a worker in November would be paid on the 15$^{\text{th}}$ and the 30$^{\text{th}}$. Therefore, the paychecks received on October 31$^{\text{st}}$ and November 15$^{\text{th}}$ should each cover 15 days: the first and second half of November, respectively. However, if November 15$^{\text{th}}$ falls on a Sunday, the *actual* payday would shift to Friday, November 13$^{\text{th}}$. As a result,

[11] Other pay-period lengths include weekly, bi-weekly (every 2 weeks on the same day of the week), and monthly.

the first pay period would last 13 days, while the second would stretch to 17 days instead of the usual 15 – an extension of 2 days. A similar situation would occur if the last day of October fell on a weekend. For example, if October 31st were a Sunday, workers would be paid on Friday, October 29th. If November followed the regular payment schedule, the first pay period would span 17 days (including days in October), while the second pay period would last the usual 15 days. Notably, in the first example, the stretch occurs in the second half of November, while in the second example, it affects the first half. We refer to these as stretches at the *end* and *start* of the month, respectively.

As we can see, the sequence of bank closing days generates variations in the number of days between two consecutive payment dates, thus altering the length of the pay period. This allows us to identify months where households must manage their finances for longer periods due to shifts in their regular payment schedule, referred to as *months of stretch*. Importantly, since these variations are driven by the interaction of calendar dates, they can be considered exogenous.

Based on this, we construct different measures of financial distress. First, we consider overall distress and define the variable $D_{m,y}$, which counts the total number of days of stretch in month m of year y. To account for differences in timing and asymmetries between short-after-long versus long-after-short pay periods (Schaub, 2021), we create $D^s_{m,y}$, which counts the days of stretch if the first pay period is longer than usual and the second is shorter, and $D^e_{m,y}$, if the second pay period is longer and the first is shorter. Essentially, these variables capture the number of days of stretch at the start (s) and end (e) of the month, respectively.[12] While these measures are used in our main analysis, we also construct corresponding indicator variables for months of stretch, denoted as $S_{m,y}$ (equal to 1 if $D_{m,y} > 0$), $S^s_{m,y}$, and $S^e_{m,y}$.[13] It is important to note that these measures are based on comparing the *regular* and *actual* payment schedules, considering only instances where the number of days covered by a paycheck deviates from the usual. This accounts for the fact that the number of days in pay periods can vary mechanically across months, even under a regular schedule, due to differing month lengths (e.g., February typically has shorter pay periods, lasting 15 and 13 days).

[12] In both examples above, $D_{m,y}$ would be 2. However, in the first example, $D^s_{m,y} = 0$ and $D^e_{m,y} = 2$. In the second, $D^s_{m,y} = 2$ and $D^e_{m,y} = 0$.

[13] As a robustness check, we also consider: (A) alternative measures of distress computed based solely on bank closing days due to weekends, excluding national holidays; (B) alternative measures based on the assumption that when a payday falls on a weekend or holiday, workers are paid on the *closest business day* rather than the prior Friday; and (C) compression periods, examining what happens when pay periods are shorter (see Section 5). Regarding the second case, the assumption of paychecks being issued on the prior Friday is also used by Berniell (2018). Discussing Social Security checks (which before 1997 were disbursed on the 3rd of each month), Stephens (2003) notes that if the 3rd falls on a weekend or holiday, the check is delivered on the first preceding business day.

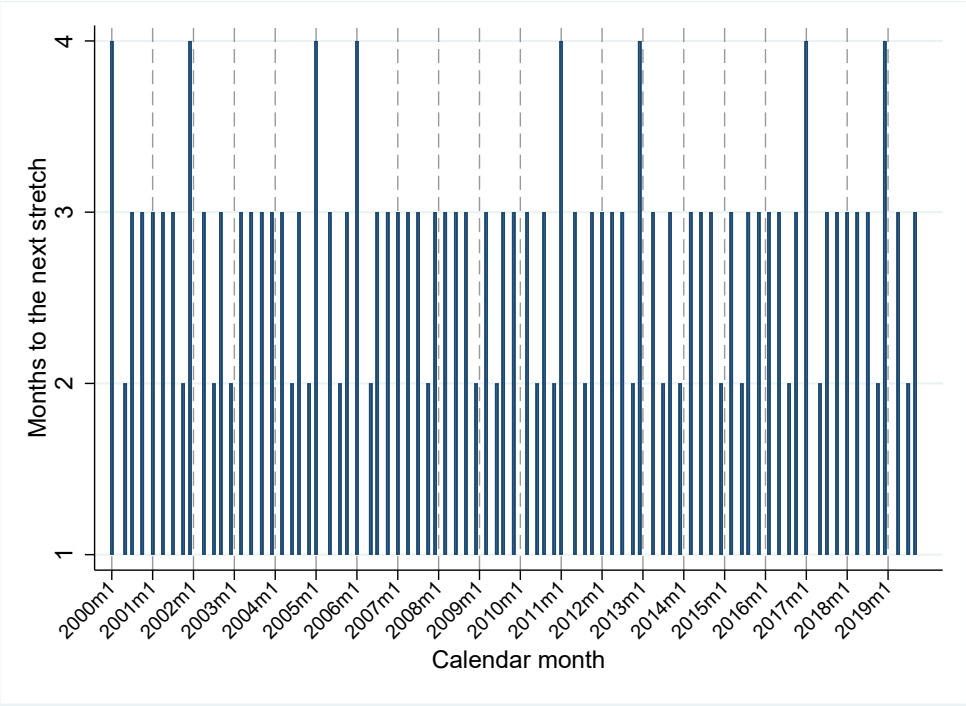
The core of our identification strategy is the argument that these measures are exogenous, as they are determined by the interplay of calendar dates. When plotting the number of months between a month of stretch and the following one for the period 2000–2019 (Schaub, 2021), as shown in Figure 1, we observe that no clear pattern emerges from the data.[14] Similarly, Figure A1 shows the monthly number of days of stretch, further reinforcing the randomness of stretch occurrences. Additional evidence supporting randomness is presented in Tables A4 and A5 in Appendix A, which illustrate and test for differences in the distribution of months, distinguishing whether a stretch occurred or not. Both tables demonstrate that financial distress is not more likely to happen in any specific month or season.

A second point of discussion is whether the stretch we identify is unanticipated or anticipated, allowing households to mitigate the financial impact of the shock. According to the permanent income hypothesis, expenditure and consumption patterns would respond differently depending on these two scenarios. On the one hand, as noted by Schaub (2021), this shock can be considered unanticipated, as the occurrence of a month of distress is so irregular that it appears effectively random in the short run, making it difficult for households to predict these patterns. If this were the case, households would be expected to react to it. On the other hand, it could be argued that some households may track when the next paycheck is due and therefore anticipate the shock. However, the literature shows that consumption generally responds to the receipt of income. For example, expenditures and economic activity tend to rise significantly after income receipt (Stephens, 2003; Stephens Jr., 2006; Evans and Moore, 2011, 2012). Moreover, households also react to *small anticipated* shocks, as adjusting consumption to minor income fluctuations can be costly (Cochrane, 1989; Parker, 1999; Browning and Collado, 2001; Hsieh, 2003; Souleles et al., 2006). This effect is not limited to low-income households. Thus, even if the shock is anticipated, it can still affect expenditure and consumption patterns. Our findings in Section 6.4, where we further explore this issue, confirm that households adjust their spending during periods of financial distress.

A final note concerns the relevance of this shock in terms of the affected population, as not all U.S. private employees are paid bi-monthly. According to the Bureau of Labor Statistics (BLS), approximately 20 percent of U.S. private businesses pay their workers bi-monthly, a figure that has remained fairly stable over time.[15] Thus, while this payment

[14] Results for 1995–1999 are available upon request.

[15] Data on pay period length are available from the Current Employment Statistics (CES) program for the years 2013–2020 (with data missing for 2015 and 2016). In 2013, 18.9% of private businesses paid their employees bi-monthly, compared to 19% in 2020. The percentage ranged from 18.5% (in 2017) to 19.8% (in 2013). This proportion remains fairly stable across industries and firm sizes. For more details, see How frequently do private businesses pay workers?.



Notes: The figure plots, for every month of distress M, the number of months that lie between M and the next month of distress, for the years 2000 to 2019. For example, the bar on January 2000 indicates that this was a month of distress, and that the next one occurred four months later, in May 2000.

Figure 1 The occurrence of distress

scheme does not cover all employees, it still affects a substantial share of the workforce. Crucially for our analysis, it impacts a significant number of households as long as at least one member is paid under this arrangement.

Details on the holidays considered, the procedures, and the specific assumptions made to identify paydays and stretches are further discussed in Appendix A.

2.2 National Crime Victimization Survey

We retrieve data on violence in the U.S. for the period 1995-2019 from the National Crime Victimization Survey (NCVS), a nationally representative survey conducted by the Bureau of Justice Statistics. One advantage of using survey data, as opposed to police records, is that surveys are less prone to reporting bias. In addition, the specific advantage of the NCVS for our analysis is that it allows us to observe both spouses over time, as the survey employs a rotating panel of households, with each eligible member of the household (aged 12 and above) interviewed every six months for three and a half years.

For each respondent, the NCVS collects detailed demographic information, including sex, age, education level, and employment status, as well as information on whether they have been victims of any crimes in the six months prior to the interview. Those who report

victimization are asked to provide further details about each incident, including the type of offense, the identity of the offender, and the month the crime occurred. Using this data, we retrospectively construct a monthly panel to determine whether a respondent was victimized by an intimate partner – defined as a spouse, ex-spouse, boyfriend/girlfriend, or ex-boyfriend/girlfriend – in a given month.[16]

We create three different measures of intimate partner violence (IPV). First, the indicator $Total_{i,m,y}$ captures all crimes committed by an intimate partner, taking the value 1 if, in month m of year y, respondent i experienced any offense where at least one perpetrator was an intimate partner. Second, we construct the indicator $Violent_{i,m,y}$, which takes the value 1 if the respondent experienced a violent crime, including attempted or completed rape and sexual assault, by an intimate partner.[17] Lastly, as a residual category, we consider non-violent crimes, such as motor vehicle theft, committed by an intimate partner, using the indicator $NonViolent_{i,m,y}$.[18] For each measure, we also compute the monthly number of occurrences.

Given the nature of our investigation, we impose several restrictions on our NCVS data. First, since the study focuses on dynamics between two partners, we limit the sample to households consisting of a married couple at the time of the interview, regardless of the overall household composition (e.g., with or without children), and only include members identified as either *husband* or *wife*.[19] Second, because our analysis examines a shock affecting individuals paid bi-monthly, we ideally would restrict the sample to households where at least one spouse is paid on this schedule. However, this information is not available in the NCVS files. As a proxy, we use the type of job – private, government, or self-employed – to exclude those unlikely to be affected by the shock: (i) self-employed individuals and (ii) government employees, who are typically paid bi-weekly (every two weeks on the same day of the week).[20]

[16]The NCVS does not specifically identify cohabiting partners, so we include the category boyfriend/girlfriend. Since ex and current boyfriends/girlfriends are grouped together, we also include ex-spouses for consistency.

[17]Violent crimes are defined by the FBI as offenses involving force or the threat of force (see FBI), including murder, non-negligent manslaughter, rape, robbery, and aggravated assault. Our definition similarly includes completed and attempted rape, sexual assault (serious/minor), attempted and completed robbery (with or without injury), aggravated assault with injury, attempted aggravated assault with a weapon, threatened assault with a weapon, simple assault with injury, sexual assault without injury, unwanted sexual contact without force, assault without a weapon and without injury, verbal threats of rape, sexual assault, or assault. This slightly differs from the FBI definition, mainly because the data we use do not capture fatal crimes.

[18]Non-violent crimes include attempted and completed purse snatching, pocket-picking, burglary (with and without forced entry), attempted forcible entry, and attempted and completed motor vehicle theft and theft.

[19]Same-sex couples are present in the data (around 1% of married households). Since we focus on male-perpetrated violence against women, these households are excluded.

[20]For example, federal employees are typically paid every two weeks on Wednesday (see cpsc.gov).

We also impose restrictions on age and working status. Specifically, we only consider couples where at least one member is of working age, i.e., between 16 and 65 years old (included), and not retired.[21]. Thus, our sample includes only couples living together at the time of the interview, where at least one spouse works in the private sector and is of working age and not retired.[22] Finally, since we are analyzing the effect of financial distress on violence against women, we restrict the sample to female respondents.

Our final dataset is composed of 3,545,586 observations on 221,436 women. Table B1 in Appendix B provides descriptive statistics on the demographic characteristics and crime statistics for our sample, while Table B2 presents the income distribution.[23]

3 Empirical Strategy

Evaluating the impact of financial distress on IPV presents several challenges, primarily due to potential confounding factors that correlate with both financial difficulties and victimization. A key concern is that certain individual characteristics can simultaneously influence the likelihood of experiencing IPV and one's financial situation. For example, individuals from disadvantaged backgrounds (e.g., lower education levels) may be more prone to violent behavior while also working in low-wage jobs. Another issue is the potential overlap between seasonal patterns of financial distress and IPV, such as the observed increase in IPV during the summer months (see Lauritsen and White, 2014), which could result in higher instances of both IPV and financial distress during these periods.

In this paper, we retrieve the causal effect of financial distress on IPV by exploiting the interplay between bank closing days on weekends and national holidays and the timing of payments. As outlined in Section 2.1, we identify months when households are likely to

[21] In the U.S., the retirement age is either 66 or 67, depending on the year of birth (see ssa.gov). We consider this restriction and the maximum age of 65. One reason for excluding retired couples is motivated by the fact that social security payments follow a very specific monthly pattern (see, e.g., Berniell (2018))

[22] Due to the survey structure, based on *household interviews*, individuals may exit the dataset either because the last scheduled interview has occurred or because the couple splits up, causing one partner to leave the household. In such cases, the couple remains in the dataset until the breakup date.

[23] For comparison, consider the distribution of income in the U.S. in 2019, the last year of our data. According to Guzman and Kollar (2024), 14.3% of U.S. households had total (money) income below $25,000, and 53% had income above $75,000. In our sample these percentages are 10.8 percent (below $25,000) and 41.5 percent (above $75,000). For other income categories, 6.7% of U.S. households earned between $25,000 and $34,999, compared to 9.6% in our data. The $35,000-$49,999 range accounts for 10.6% of U.S. households, and 16% in our sample. Finally, 15.5% of U.S. households fall within the $50,000-$74,999 range, while this figure is 22% in our data. Therefore, our sample appears to have a higher concentration of middle-income households and relatively fewer households at the low and high ends of the income spectrum compared to the U.S. distribution. This suggests that our sample might not fully reflect the extremes of income distribution found in the general population, possibly leading to a more middle-income-biased representation.

stretch their finances due to shifts in the regular payment schedule caused by the overlap of paydays and bank closing days. We then count the corresponding number of stretch days, $D_{m,y}$, and estimate:

$$y_{i,m,y,r} = \alpha_i + \lambda_m + \gamma_y + \tau_r + \beta D_{m,y} + \delta X_{i,m,y,r} + \varepsilon_{i,m,y,r} \tag{1}$$

Where $y_{i,m,y,r}$ is our IPV-outcome of interest for individual i residing in region r, for month m and year y. In the equation, we include individual (α), month (λ), year (γ), region (τ) fixed effects, as well as a vector of time-varying individual controls X. Specifically, we consider age and indicators for income level, residing in a rural area, and being employed. As a baseline, we also present results from a specification with only year- and month-fixed effects. Since one individual can contribute with multiple observations over the years, in all instances, standard errors are clustered at the individual level. The coefficient of interest is β, which captures changes in the incidence of IPV due to (the intensity of) the stretch. It is important to remark that since we cannot pinpoint exactly who is exposed to the shock, β will estimate an intent-to-treat effect.

In this framework, identification is ensured by the fact that the occurrence of a stretch and the number of days of stretch is exogenous since our definition is based on the interaction between calendar dates – an assumption which we validate in Section 2.1, where we show that financial distress is not more likely to happen in a specific month (or season).

4 Results

4.1 Financial Distress and IPV

The results of our identification strategy are presented in Table 1. In Columns (1)–(4), we examine the effect of financial distress on the incidence of IPV, using the total number of stretch days in a month, $D_{m,y}$. Specifically, Columns (1) and (2) show the impact of days of stretch on the probability of experiencing any crime by an intimate partner in a given month, represented by the indicator *Total*. Column (1) includes only $D_{m,y}$ and month and year fixed effects, while Column (2) adds individual controls alongside the fixed effects. In the remaining columns, we replicate the analysis by focusing on violent crimes, represented by the indicator *Violent*. For ease of interpretation, the coefficients are rescaled by one million.

The results show a significant effect of financial distress on the incidence of IPV, and in particular of violent crimes. According to our preferred specification in Columns (2) and (4), compared to the average during months without financial distress (*Mean*),

Table 1 Distress and Intimate Partner Violence

	Distress: Any				**Distress: End of the month**			
	Total		Violent		Total		Violent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	14.01**	15.83**	14.29***	16.30**	9.549	14.56*	11.47*	16.09**
	(5.554)	(6.454)	(5.472)	(6.381)	(6.459)	(7.462)	(6.407)	(7.436)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.128	0.000	0.130
Mean tot	85.458	85.899	81.792	83.445	85.458	85.899	81.792	83.445
Mean	77.224	77.531	73.159	74.722	82.281	83.041	77.793	79.793
Effect wrt Mean	18.15	20.42	19.54	21.81	11.6	17.53	14.74	20.17
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *Total* and *Violent* crimes committed by the intimate partner. Outcomes are re-scaled by one million. *Days of Stretch* indicates the total number of days of stretch (Columns 1-4), and the number of days of stretch at the end of the month (Columns 5-8). Controls include age and indicators for level of income, being in a rural area, and being employed. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

one additional day of stretch increases the probability of victimization by 20.4% overall ($\approx 15.83/77.531$), and by 21.8% for violent crimes. No similar effect is found for non-violent crimes, as shown in Table B3 (Columns (1) and (2)), which might be expected given the nature of the felonies in this category. While this increase might look sizable, it is important to note that the probability of being victimized in a month is very low in our sample.[24]

Furthermore, the magnitude of the effect is in line with previous studies. For instance, Carr and Packham (2021) find that changes in the timing of SNAP benefits led to a 6.9% increase in overall domestic abuse and a 23% rise in assaults specifically. Additionally, Bhalotra et al. (2021) find that male and female job loss increases the probability of domestic violence by an average of 32% and 56%, respectively. Although these studies differ in terms of samples and specific shocks analyzed, our results fall within this range.

To explore differences in the timing of financial distress, in Columns (5)-(8), we investigate the effect of stretches occurring at the end of the month by repeating the same analysis substituting $D_{m,y}$ with $D^e_{m,y}$. As we can see, the results are similar in size and magnitude, showing an increase in total IPV (17.5%), primarily driven by an increase in violent crimes (20.2%).[25] Table B4 shows no similar effects when examining stretches

[24]For the sample of 2,852,189 observations: 271,534 obs have one day of stretch; 726,141 have two days; 74,575 have three days. Note that the coefficient is 15.83 (rescaled by one-million) and that total cases are 245. Then $\frac{15.83}{1000000} * 271,534 + \frac{15.83}{1000000} * 2 * 726,141 + \frac{15.83}{1000000} * 3 * 74,575 = 4,3 + 23 + 3,54 = 30,84$ are the total number of cases due to total days of stretch in the sample.

[25]In this case, we find a decrease in non-violent crimes (see Table B3), which might suggest a substitution between violent and non-violent crime. However, given the low frequency of such instances, we are cautious in interpreting these results.

occurring at the start of the month, that is of $D^s_{m,y}$, which would point to our results being driven by stretches at the end of the month. This may be due to some large, non-deferrable expenditures, such as utilities and rent, that are often due at the end of the month, making financial distress particularly salient during the second half rather than the first half of the month. To investigate potential non-linearities, Table B5 considers the impact of stretches of different duration by substituting $D_{m,y}$ with three indicator variables for whether the month had 1, 2, or 3 days of stretch (with the omitted category being 0 days). As expected, the results are driven by instances where the stretch is the longest, particularly those with 3 days.

A potential explanation for our findings is that financial hardship may lead to a general increase in crime, as individuals under stress might become more prone to committing burglaries or thefts. We test this hypothesis by evaluating whether financial distress also raises the probability of women in our sample, or any NCVS respondent, reporting being victims of a crime overall. To do this, we build indicators to distinguish whether the respondent was subjected to a crime by any offender (*Any Offender*), or to a crime not committed by an intimate partner (*Excluding IP*).[26] As before, we differentiate between total, violent, and non-violent crimes. The results are reported in Table B6 for our main sample and in Table B7 for the full NCVS sample, focusing on the total number of days of stretch. The specifications follow those in Column (2) of Table 1. We find no significant positive effect, which leads us to reject the hypothesis that our results are driven by changes in the overall level of crime.[27]

Another question we explore in Table B8 is whether financial distress might also lead to higher IPV against men. While this is a less likely scenario – since the vast majority of IPV cases involve violence by men toward women – it is not something we *a priori* disregard. Given that we observe both members of the couple, we are able to test this by replicating the analysis from Table 1 on the sub-sample of men, corresponding to the women in the primary analysis. However, we find no similar effect, as stretches overall do not appear to impact the incidence of IPV against men.

We then ask whether the negative effects of financial distress translate into positive outcomes (i.e., a lower incidence of IPV) during periods when households manage their finances for fewer days, or if our main effects are attenuated in such cases of financial *ease*. To explore this, we construct a new measure similar to our financial distress measure by

[26] *Excluding IP* equals 1 if the respondent experienced an offense where no offender was an intimate partner.

[27] Additional evidence against this hypothesis is provided by Carr and Packham (2019), who find that crime, particularly thefts at grocery stores, decreases significantly following a change in the timing of SNAP benefit disbursement, while domestic violence incidents increase.

identifying instances when a pay period is shorter than the regular one (i.e., *compressed*) and counting the number of days of compression in a given month.[28]

In Table B9, we evaluate the impact of the total number of days of compression in a month (Columns (1) to (4)) and the impact of days of compression occurring at the end of the month (Columns (5) to (8)), repeating the analysis from Table 1. Table B10 focuses on days of compression occurring at the start of the month. As seen in Table B9, the coefficients of our preferred specification are generally negative, suggesting that financial ease may be associated with lower levels of IPV. However, the effect is never statistically significant. On the other hand, Table B10 shows that compression days at the start of the month are linked to an increase in violent crimes (weakly significant). This could be due to the high correlation between this measure and having a stretch at the end of the month.[29]

Overall, these results provide evidence that financial distress negatively affects household dynamics, particularly for women, by increasing the likelihood of experiencing IPV. However, this financial distress is not linked to a broader rise in other types of crime.

A potential critique of our findings is that the length of a pay period fluctuates mechanically throughout the year due to the varying lengths of months. For instance, while a 30-day month consists of two equal pay periods of 15 days each, a 31-day month has two pay periods of 15 and 16 days. This raises the question of whether what matters is simply having a pay period longer than 15 days—making every 31-day month a potential month of stretch, or whether it is having a pay period longer than expected, as we have assumed. In Table B11, we address this issue by replicating our main analysis, replacing our treatment variable with an indicator for months lasting 31 days. Columns (1)–(4) present results using the full sample, while Columns (5)–(8) focus on months without stretch. If pay periods longer than 15 days were the determining factor, we would expect to see significant results. However, no significant effects are found, leading us to reject this hypothesis.

Another objection is that our results are identified from a sample of individuals who have self-selected into the private sector, which we use as a proxy for a specific payment scheme. This could bias our findings if self-selection is driven by factors correlated with

[28] In the first example in Section 2.1, where the first pay period of November lasts 13 days and the second lasts 17 days, instead of the regular 15, we count 2 days of compression—overall and at the beginning of the month. Note that this measure is not exactly symmetric to the days of stretch. For example, it is possible to have two pay periods in a month that are shorter than regular, but by construction, it is not possible to have two periods in a month that are longer than regular.

[29] The correlation with $D^e_{m,y}$ is 0.78, which is not the case for the other two measures and their respective counterparts. In Section 5, we further investigate potential positive effects associated with financial ease by evaluating the impact of a combined measure of stretch and compression days, designed to proxy the household's overall financial conditions.

the likelihood of displaying or being subjected to violent behavior. However, it is unclear in which direction this bias would operate. On the one hand, people working in the private sector may differ from those who are self-employed, for example, in terms of education, abilities, or pay level. On the other hand, the private sector includes a wide variety of jobs, industries, and firm sizes, making it difficult to draw firm conclusions about how these workers might differ from others. Nevertheless, our results can still be considered valid for this group of workers.[30]

4.2 Heterogeneity Analysis: Constrained, At-risk Households, and More

While we have detected a negative effect of financial distress on average, there may be significant heterogeneity across households. In particular, we expect the shock we identify to be more relevant – and the effect of financial distress on IPV to be larger – for two main categories of households: those more likely to be liquidity-constrained and those more prone to violence. In this section, we explore this hypothesis.

We identify three types of "more constrained" households. First, we focus on low-income households that likely struggle to make ends meet even under normal circumstances. Specifically, we consider households with a total yearly income below $25,000, a figure just below the poverty threshold for a four-member family in the U.S. in 2020 (see U.S. Poverty Guidelines). Notably, poorer households may experience higher levels of domestic violence even under normal conditions, as poverty and the associated stress are shown to be key contributors to IPV (Jewkes, 2002). Second, recognizing that financial constraints also depend on family size and composition, we consider larger households, defined as those with more than two members. Third, because additional household members may provide financial support, we focus on households consisting of a couple with children. To identify more violent households we rely instead on their history of violence, considering those where the wife has been victimized by her partner at least once. The results of the analysis for each of these sub-samples are presented in Table 2, using our preferred specification from Column (2) of Table 1 to examine both total and violent crimes, for overall distress and distress occurring at the end of the month.

Panel A of Table 2 focuses on women from poorer households. As shown, an additional day of stretch at the end of the month significantly increases the probability of experiencing a crime by an intimate partner by 38% (relative to the mean), which is larger than the effect found for the entire sample. This result appears to be driven primarily by violent

[30] Another argument could be that people choose their occupation based on pay frequency, which might correlate with time preferences, such as patience or impatience. However, this mechanism seems less likely. Additionally, this payment scheme is consistently present, though in varying proportions, across different firm sizes and industries (see How frequently do private businesses pay workers?).

Table 2 Distress and Intimate Partner Violence - Constrained and at-risk

Distress:	**Panel A:** Below 25,000$				**Panel B:** At risk			
	Any		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Days of Stretch	34.95	41.20	79.31*	85.14**	11,802**	12,242**	10,500*	11,656*
	(33.37)	(33.07)	(40.66)	(40.42)	(5,041)	(4,969)	(6,051)	(6,016)
Observations	300,553	300,553	300,553	300,553	3,566	3,566	3,566	3,566
R-squared	0.153	0.154	0.153	0.154	0.087	0.090	0.086	0.089
Mean tot	239.558	232.904	239.558	232.904	68704.431	66741.447	68704.431	66741.447
Mean	214.28	203.566	207.064	198.253	62274.368	60018.051	66100.443	63515.51
Effect wrt Mean	16.31	20.24	38.3	42.95	18.95	20.4	15.89	18.35
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Distress:	**Panel C:** Household size> 2				**Panel D:** Household with children			
	Any		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Days of Stretch	23.76***	23.97***	16.98	19.15*	35.87***	36.17***	27.04*	28.50**
	(9.059)	(8.945)	(10.64)	(10.60)	(12.30)	(12.17)	(14.52)	(14.49)
Observations	1,796,910	1,796,910	1,796,910	1,796,910	1,178,530	1,178,530	1,178,530	1,178,530
R-squared	0.127	0.128	0.127	0.128	0.126	0.126	0.126	0.126
Mean tot	100.728	97.389	100.728	97.389	119.641	117.095	119.641	117.095
Mean	86.542	82.973	95.735	91.3171	97.968	95.247	111.123	107.755
Effect wrt Mean	27.46	28.89	17.73	20.97	36.62	37.98	24.33	26.45
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *Total* and *Violent* crimes committed by the intimate partner. Outcomes are re-scaled by one million. *Days of Stretch* indicates the number of days of any stretch in Columns (1) and (2), and the days of a stretch at the end of the month in Columns (3) and (4). Panel A considers households with annual income below 25,000$. Panel B focuses on women defined *at risk*, i.e., women who were at least once victims of any crime by an intimate partner. Panel C considers households whose size is greater than 2, while Panel D considers households with children. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

crimes, with an increase of 43%. Although the significance is lost when considering an extra day of stretch overall, the coefficients remain positive and larger in magnitude. It is also important to note that the smaller sample size reduces our statistical power. No similar effect is observed for other income categories (see Table B12).[31] Further evidence that financial distress is particularly relevant for poorer households is presented in Figure B1. In Figure B1**A.**, we plot the predicted probability of IPV by income group for months with a stretch (red line) and without a stretch (blue line). B1**B.** shows the average marginal effect of a day of stretch by income group. As we can see, the probability of experiencing IPV is highest for women in lower-income households.

Panels C and D of Table 2 focus on women in households with more than two members and households with children, respectively. In these households, an additional day of stretch increases the probability of experiencing a crime by an intimate partner by 27% and 37%, respectively. Once again, these results appear to be driven by an increase in

[31]Interestingly, there is a significant effect of financial distress for households with incomes above $75,000. This may be due to a potential correlation between pay frequency and wages, as individuals paid bi-monthly tend to have higher hourly earnings (see How frequently do private businesses pay workers). As a result, wealthier households may simply have a higher likelihood of experiencing our defined financial shock.

violent crimes, particularly when the stretch occurs at the end of the month. Notably, the effects are more pronounced for households with children. This finding is intuitive: households with more than two members may include additional adults who work and contribute to the household income, while households with children face greater financial needs without additional contributors.

Lastly, Panel B of Table 2 focuses on women who have been victimized by their intimate partner at least once, whom we identify as being *at risk*. For these women, one additional day of stretch increases the probability of experiencing any crime by the intimate partner by 19%, and violent crime by around 20%.

We also examine whether the effect of financial distress on IPV varies across dimensions such as education, age, and ethnicity – factors that may correlate with labor market outcomes and the likelihood of IPV. In Table B14, we replicate the analysis for women with and without a college education (Panel A), women below and above 43 years old (Panel B; mean age of our sample: 43, median: 42), and women identifying as White or Black (Panel C). Our findings show significant increases in both total and violent IPV incidents during periods of financial distress for women without a college education and for younger women. Conversely, weaker effects are found for college-educated women, and no effect is detected for older women. Although financial distress seems to affect White women more than Black women, we observe larger point estimates for Black women. Due to the smaller sample size for Black women, these results may be influenced by issues of statistical power.

4.3 The Source of the Shock

The financial distress we have investigated so far could result from delays in the paycheck of the husband, the wife, or both, as either may work in the private sector. However, the literature suggests that the effects of financial distress might vary depending on which spouse's paycheck is delayed.

On the one hand, standard bargaining models suggest that improvements in women's labor market prospects and conditions (e.g., an increase in relative wages) enhance their bargaining power by improving their outside options, thereby reducing violence against women (Aizer, 2010; Anderberg et al., 2016). On the other hand, research has shown that men may react negatively when women earn more or take on non-traditional roles (Bertrand et al., 2015). In our context, the source of financial distress – whether from the husband's or wife's paycheck – could influence household dynamics by temporarily altering the relative positions of the spouses. If the husband's paycheck is delayed, the effect on IPV could go in either direction. One possibility is that he may feel frustration

Table 3 Distress and Intimate Partner Violence - Asymmetry of shocks

Panel A								
	Wife in private				**Husband in private**			
Distress:	**Any**		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	19.28	19.22	4.089	6.564	12.99	14.51	7.948	10.01
	(14.13)	(13.86)	(16.27)	(16.21)	(10.25)	(10.19)	(10.18)	(10.05)
Observations	753,179	753,179	753,179	753,179	986,407	986,407	986,407	986,407
R-squared	0.165	0.166	0.165	0.166	0.139	0.141	0.139	0.141
Mean tot	115.51	111.527	115.51	111.527	75.02	72.992	75.02	72.992
Mean	104.187	99.935	112.451	107.18	73.102	69.853	77.774	75.092
Effect wrt Mean	18.51	19.24	3.64	6.12	17.77	20.77	10.22	13.33
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B								
	Wife in private, husband unemployed				**Husband in private, wife unemployed**			
Distress:	**Any**		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	7.944	7.944	-7.020	-7.020	15.06	17.54	17.60	21.00
	(15.14)	(15.14)	(18.62)	(18.62)	(13.94)	(13.83)	(13.92)	(13.65)
Observations	170,681	170,681	170,681	170,681	611,023	611,023	611,023	611,023
R-squared	0.279	0.279	0.279	0.279	0.130	0.132	0.130	0.132
Mean tot	76.165	76.165	76.165	76.165	75.284	72.010	75.284	72.010
Mean	75.097	75.097	77.486	77.486	76.070	70.824	75.764	71.435
Effect wrt Mean	10.58	10.58	9.06	9.06	19.8	24.77	23.23	29.39
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *Total* and *Violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of Stretch* indicates the number of days of any stretch in Columns (1), (2), (5) and (6), and the days of a stretch at the end of the month in Columns (3), (4), (7) and (8). Panel A considers women from households where only the wife works in the private sector and from households where only the husband works in the private sector. Panel B additionally considers households where the other partner is unemployed. Standard errors are clustered at the individual level.

over not being able to provide for the family, potentially leading to violence against his wife. However, violence might decrease if we assume that the wife's strengthened financial position, as the family now relies on her paycheck, improves her bargaining power. Conversely, if the wife's paycheck is delayed, the husband may develop resentment towards her, and the wife's increased financial dependence on him could weaken her bargaining position, leading to a potential increase in violence.

In Panel A of Table 3, we explore these hypotheses by focusing on women in households where only the wife works in the private sector (Columns (1) to (4)) and those where only the husband works in the private sector (Columns (5) to (8)). We do not find any significant effects. This can be explained by the fact that, unlike standard bargaining models that account for *actual* changes in relative wages – such as the amount of money received or employment status within the couple – our measure of financial distress does not involve such a change. Even with a delay, the same payment is eventually received, and the financial stretch is only temporary.

Another hypothesis we investigate is that the effect may depend not only on *whose* paycheck is delayed but also on *how many* paychecks are delayed. So far, we have not

imposed any restrictions on the job conditions of the other spouse, meaning one partner might still be working and paid on a different schedule. In this case, the shock would only affect one of the two paychecks. It would be reasonable to expect the shock to be more significant when one spouse works in the private sector while the other is unemployed – a situation likely to be more financially constrained – or when both paychecks are affected, such as when both spouses work in the private sector. In Panel B of Table 3 and Table B13, we explore this possibility by focusing on women in such households. As we can see from Panel B of Table 3, there is no evidence of an increase in IPV for women in single-paycheck households, regardless of whether they are the employed partner while their spouse is unemployed (Columns (1) to (4)) or unemployed while their partner works (Columns (5) to (8)). The coefficients are mainly positive but never significant. However, when both partners work in the private sector (Table B13), we find that an extra day of financial distress significantly increases the probability of experiencing any crime by 26.6% and a violent crime by 26.8%, particularly when stretches occur at the end of the month. These results suggest that the impact of financial distress is positively related to the number of financial resources affected and that, in this context, the size and intensity of the shock matter more than its source.

5 Robustness Checks

To corroborate our main results on IPV, we perform a series of robustness tests, presented in Appendix C. We begin by considering alternative definitions and measures of financial distress. In Table C1, we shift from examining the number of days of financial distress (the *intensive margin*) to using the corresponding indicator for the occurrence of financial stretch (the *extensive margin*). The dependent variables and econometric specifications are the same as in Table 1, and we estimate the effect of a stretch overall. Our main results hold: the occurrence of a stretch increases the probability of experiencing any crime by an intimate partner, with the effect primarily driven by an increase in violent crimes.

In Table C2, we replicate the analysis from Table 1 using an alternative assumption to build our measures of financial distress. Specifically, we assume that if a payday falls on a day when the bank is closed, individuals are paid on the closest business day (e.g., the following Monday if the scheduled payday is on a Sunday), rather than always being paid on the prior Friday (see also Appendix A). This is an important test, as there is no unanimous consensus on which strategy employers typically use. Once again, we examine the total number of days of stretch, and this alternative assumption does not qualitatively

affect our conclusions, as we obtain results of similar size and magnitude.[32]

Another concern with our main measure of financial distress is that by including bank closing days during national holidays, we may introduce seasonality or an anticipation effect, as these holidays occur in the same months each year. Additionally, these holidays could be linked to (1) increased alcohol consumption, which is associated with higher rates of violent behavior, and (2) a greater likelihood of spouses spending more time together, thereby increasing exposure. As a result, our findings could potentially be driven by a holiday effect. To address this, in Table C3, we repeat the analysis using a measure of financial distress that excludes national holidays and only accounts for bank closing days due to weekends. When using this measure, the results still show that financial distress increases the probability of experiencing IPV, particularly violent crimes.

Additionally, in light of the potential positive effect of financial ease associated with shorter pay periods, we construct a measure that calculates the difference between the number of days of stretch and days of compression in a month (see Section 4.1), which we refer to as *net* days of stretch. This is intended to capture the overall financial situation of the household.[33] The results, presented in Table C4, once again show a positive relationship between financial distress and the incidence of IPV.

Another set of tests relates to how we measure violence – specifically, our dependent variables. In Table C5, we replicate our main analysis using the number of occurrences as the outcome, rather than our indicators for IPV. As shown, this change does not alter our main conclusions, which is unsurprising given the relatively low probability of being victimized more than once in a month. Similarly, the results hold when we use standardized values for our indicator variables, as shown in Table C6.

We then assess the sensitivity of our results to different model specifications. First, Table C7 replicates the main analysis using a probit model.[34] While the coefficients are not directly comparable, the sign and significance of the estimates validate our findings, showing an increase in IPV.

Second, in Table C8, we test various alternative explanations by incorporating different controls into the model. In particular, one hypothesis is that our findings might be driven by a seasonal effect of violence. As shown in Section 2, this is unlikely since our measure of distress is not correlated with any particular month or season. Additionally, month

[32]Comparing this to our main measure $D_{m,y}$, the two measures differ in only 67 out of 300 months.

[33]For example, in Section 2.1, when the first pay period of November lasts 13 days and the second lasts 17, there are 2 days of compression at the beginning of the month and 2 days of stretch at the end, resulting in zero net days of stretch. This measure takes negative values if there are more days of compression than days of stretch.

[34]In this case, we use a less demanding specification without individual fixed effects but include additional individual controls.

fixed effects are included in all regressions. To further rule out this possibility, we include season fixed effects in our preferred specification (in Columns (1), (4), and (7)), on top of month fixed effects. This inclusion does not alter our main results, providing additional evidence against the seasonal hypothesis.

Another possibility is that the increase in violent behavior might be linked to receiving the paycheck on a Friday, the start of the weekend, rather than a deterioration of household financial conditions. Increased alcohol or substance consumption after receiving a paycheck on a Friday could lead to more violence, particularly domestic violence. To address this, we control for the number of times a paycheck was received on a Friday during the month, regardless of the regular schedule (in Columns (2), (5), and (8)) and we obtain consistent results.

Finally, to more broadly account for a potential "weekend effect" associated with increased alcohol consumption or higher time exposure, we include a regressor for the number of weekend days in the month (in Columns (3), (6), and (9)). This also helps address the possibility that if a payday is anticipated due to a weekend, the number of weekends between consecutive paydays increases, which could correlate with financial distress. Our results remain robust to these additional controls.

In Section 6.4, we further show that alcohol consumption does not significantly increase during periods of financial distress. Taken together, these findings allow us to exclude this alternative explanation.

6 Households and Distress

As discussed in Section 1, a key assumption of this paper is that payment delays worsen household financial conditions, leading to stress and tensions within the household, which may in turn result in domestic violence – a hypothesis supported by previous studies (e.g., Carr and Packham (2021)). In this section, we focus on these frictions, examining the potential channels through which they may manifest. Specifically, we analyze household expenditures, consumption, and time use, using data from the Consumer Expenditure Survey and the American Time Use Survey. Before delving into these analyses, we describe the data in Section 6.1 and Section 6.2, and outline the identification strategy in Section 6.3.

6.1 Consumer Expenditure Survey

We collect data on households' daily expenditures for the period 1996–2011 from the Diary Survey component of the U.S. Consumer Expenditure Survey (CEX), which records

every purchase made by any household member over a two-week period.[35] Importantly, the diary start date for each household is randomly selected (Stephens, 2003; Berniell, 2018) and spread throughout the year. Although we do not observe households during the same phase of the pay cycle, this randomization allows us to meaningfully compare expenditures across households over time.

We consider several categories of expenditures, following the literature (Stephens, 2003; Stephens Jr., 2006; Manaresi, 2016; Berniell, 2018). First, we consider expenditures on items that should represent *instant consumption* (Stephens Jr., 2006), which are more likely to be sensitive to shocks such as the one analyzed. This includes food consumed away from home, (e.g., at a restaurant), and food consumed at home. Since items for home consumption can be bought one day and stored for several days or weeks, we further restrict this last category to perishables, that is, products with shorter shelf lives, like fruits, vegetables, milk, and eggs. We also analyze entertainment and leisure expenses, e.g., tickets for cinema or sporting events. Second, given their potential association with violent behavior, we consider expenses on alcohol, distinguishing for alcohol consumed at home or away from home, and on tobacco-related items. Third, for comparison purposes, we consider expenditures that are arguably significant and less likely to be deferred, including, for example, tuition fees, insurance payments, utilities, and rent – a category to which we will refer as *non-deferrables*. In contrast, we also consider expenditures for durables (e.g., TV) and repairs (e.g., to the car). Finally, we compute total daily expenditures. All values are expressed in US dollars and are not adjusted for inflation.[36]

The survey also provides demographic information on households, such as size, composition, and income, which we use to construct two separate datasets. First, for comparability with our NCVS sample, we focus on households with a married couple (regardless of the overall composition) where at least one spouse works in the private sector. Second, since the CEX survey also contains data on the timing of pay (available from 1998 onward), we focus on households where at least one spouse receives bi-monthly payments. In both datasets, we apply the same restrictions on age and employment status described above for the NCVS sample. In total, we have 39,680 households with at least one spouse working in the private sector (390,939 observations), and 3,067 households with at least one spouse paid bi-monthly (33,207 observations). Table D1 in Appendix D displays some descriptive statistics for the main categories of expenditures considered for the two

[35] According to the BLS, households are surveyed for two consecutive weeks. However, our analysis revealed some variations in this pattern. More recent data cannot be used because the CEX stopped providing information on the exact date of purchases after 2011.

[36] Note that, in all regressions, year-fixed effects are included. We consider levels and not logs to avoid censoring the data (see also Stephens Jr., 2006).

sub-samples just described.

6.2 American Time Use Survey

We gather data on how individuals spend their days from the American Time Use Survey (ATUS) for the period 2003-2019. The survey asks individuals to provide information on the activities undertaken during a designated day, i.e., the 24 hours preceding the interview, including details on duration, location, and companionship.[37] Respondents are chosen every month from households that have recently completed their participation in the Current Population Survey (CPS). Specifically, one member (aged 15 or older) is randomly selected and interviewed once about their activities on the designated day. Importantly, the monthly sample is randomly divided into four groups, one for each week of the month, and the interview day is randomly assigned to ensure accurate measures of time spent on weekdays and weekends (Bureau of Labor Statistics, 2023), allowing us to compare responses across households interviewed on different days.

Using the information provided, we focus on the following activities and categories and compute the number of minutes devoted to each of them.[38] First, to uncover evidence of potential financial distress, we consider time spent on activities that clearly involve spending, particularly "non-essential" spending. This category includes activities related to consumer purchases other than groceries, food, and gas; and to personal care services, e.g., getting a haircut. Similarly, we consider the time spent on researching purchases, including activities like comparing prices at different stores. Second, we consider time spent in different locations (time-by-location) and, in particular, time spent at home – doing any activity. We note that this could be an indicator of financial distress but also of general distress and exposure. As such, we interpret this measure with caution, as the impact of distress is likely ambiguous. On the one hand, having less money to spend might result in more time spent at home. On the other hand, distress may prompt individuals to leave the house for activities that do not necessarily involve spending, such as engaging in sports or visiting someone's home.

To examine the issue of exposure more thoroughly, we also consider time spent with different household members (time-by-companionship). Specifically, we compute the total time spent with the spouse, distinguishing between time spent with the spouse overall and time spent with him or her exclusively. This, irrespective of location or activity. To complement the analysis, we further compute time spent alone, and time spent with children (overall and exclusively). This last category might be particularly interesting given the

[37] Around 400 types of activities are coded and grouped into different categories.
[38] Given the time reference, the associated day is the one before the interview.

gender norms around the distribution of household chores within a couple and, in particular, of the responsibilities of taking care of the children. In this respect, we also compute the time spent on activities done to care for or help any child in the respondent's household, and that spent on household activities, that is those done to maintain the household, including housework, cooking, or home maintenance (Bureau of Labor Statistics, 2023). Note that these activities do not necessarily involve direct interactions with others, e.g., running errands for the children.

While using time use data to uncover signs of more general distress present challenges, we focus on two additional activities that may be particularly relevant and interesting: time spent on personal care (e.g., sleeping and grooming) and sleeping more specifically. We also consider activities done for personal interest or leisure, namely relaxing.

As with the CEX data, we use the demographic information provided to build a dataset consistent with the NCVS, focusing on respondents in a couple in which at least one member works in the private sector. Then, as ATUS also includes information on the frequency of pay, we consider respondents in couples where at least one of the spouses is paid bi-monthly.[39] Once again, the same restrictions on age and working status are applied. In total, our samples consist of a cross-section of 56,654 (26,504 women and 30,150 men) people from households with at least one person working in the private sector and 1,416 (694 women and 722 men) people from households with at least one member paid bi-monthly. Both datasets are described in Table E1 in Appendix E. Examples of the activities included in each category with their respective ATUS codes are detailed in Table E2.

6.3 Empirical Strategy - Daily Data

Similar to the approach used with NCVS data, the identification strategy for estimating the effect of financial distress on expenditures and time use relies on the exogeneity of this shock. However, given the higher frequency of CEX and ATUS data, the focus shifts to days and pay periods, rather than months. Specifically, we now use the indicator *Stretch*, which equals 1 if the pay period is a period of stretch, i.e., it covers more days than regularly scheduled. Since the intensity of financial distress is likely to increase towards the end of a pay period, we also consider *DayOfStretch*, an indicator identifying the last four days of a pay period of stretch.[40] In this case, identification relies on the assumption

[39] In this case, married or un-married partnership. We retrieve information on the spouse considering the frequency of pay and the sector of occupation indicated in the last CPS interview (taken 2 to 5 months prior), and only in case the spouse is found to be currently working according to the ATUS files.

[40] Four days represent around 20 percent of a normal pay period (15 days). Also note that, as we detailed, the number of days of stretch ranges from 0 to 3.

that the likelihood of any given day being a day of stretch is effectively random. This is ensured by the fact that these occurrences are generated by the interplay of calendar dates. The same reasoning applies to a pay period.

For our CEX data, where we have multiple observations for each households, we thus estimate the following model:

$$\begin{aligned} e^k_{i,p,d,m,y,r} = \quad & \alpha_i + \beta Stretch_{p,d,m,y} + \gamma Last_{p,d,m,y} + \delta DayOfStretch_{p,d,m,y} + \\ & + \pi_{dow} + \lambda_m + \gamma_y + \tau_r + \epsilon_{i,p,d,m,y,r} \end{aligned} \tag{2}$$

where $e^k_{i,p,d,m,y}$ is the total expenditure (in \$US) for category k made by household i on day d of month m and year y, which falls during the pay period p. In the equation, we include household (α), day of the week (π), month (λ), year (μ), and region (τ) fixed effects, along with $Last_{p,d,m,y}$, a dummy indicating the last 4 days of a pay period, irrespective of whether there is a stretch or not. In a more demanding specification, we add a control for the number of days elapsed since the receipt of the last paycheck, *DaysFromPrev*. Robust standard errors are used.

The model used for the ATUS data is analogous. In this case the dependent variable is $t^k_{i,p,d,m,y}$, which represents the total minutes individual i spent on activity k on day d of month m and year y, falling in pay period p. However, because the ATUS data are cross-sectional, we include a control vector X instead of individual fixed effects. This vector includes gender, age, household size, and indicator variables for race (White, Black), having a degree, and poverty status (income below \$25,000).

Our interest is in β and δ, representing respectively the difference in expenditures or time spent in certain activities between periods with a stretch and those without, and between the last four days of periods of stretch and those without.[41]

[41] γ is instead informative about the difference in expenditures or time spent in certain activities between the last days and first days of pay periods. For clarity, consider the following table, for Stretch (S) and Last (L):

	$L=0$	$L=1$	$(L=1)-(L=0)$
$S=0$	α	$\alpha+\gamma$	γ
$S=1$	$\alpha+\beta$	$\alpha+\beta+\gamma+\delta$	$\gamma+\delta$
$(S=1)-(S=0)$	β	$\beta+\delta$	δ

We can relate these parameters to different consumption theories. If $\beta = 0$, $\gamma = 0$ and $\delta = 0$, consumption is fully smoothed, meaning it is unaffected by being in a period of stretch or by whether it is the beginning or end of a pay period. If $\beta < 0$, $\gamma = 0$ and $\delta = 0$, this indicates rational expectations: households reduce their consumption at the beginning of a period of stretch, but would not change their consumption level at the end of the pay period. Lastly, if $\beta = 0$, $\gamma = 0$ and $\delta < 0$, this could suggest time inconsistency or impatience: consumption is not adjusted downward as the period of stretch begins, but it decreases in the last days of the period of stretch. An alternative explanation for this pattern could be related to liquidity constraints, or the costs associated with adapting to small, (anticipated) shocks.

6.4 Financial Distress, Expenditures and Consumption

Given that we are examining a negative shock to households' finances, a natural question is whether this shock has a negative effect on how finances are used, that is on expenditures and consumption. Our claim is that changes in spending behavior – such as a decrease in expenditures on leisure activities – can signal a worsening financial situation, and can thus provide evidence of a decline in the overall financial conditions of the household.

The standard theory on consumption smoothing and the permanent income hypothesis would indicate that no change in spending behavior should occur during a period of stretch: if households foresaw the shift, if they were able to save accordingly, and if they were time-consistent, they would be able to smooth their consumption over the pay period. As we can see, this conclusion rests on three critical assumptions: the ability to anticipate the shock, the absence of liquidity constraints, and time-consistent preferences. We argue that, despite these theoretical arguments, changes in spending behavior may still occur during a period of stretch.

First, the shock we examine is likely unanticipated. As noted in Section 2, stretches occur irregularly and do not follow a predictable pattern, reducing the likelihood that households can foresee and prepare for them, a point also raised by Schaub (2021). Even if households could anticipate the shock, liquidity constraints or time-inconsistent preferences might still cause changes in consumption patterns (Manaresi, 2016).

Moreover, literature indicates that consumption is responsive to income receipt. For instance, expenditures and economic activities often increase significantly following income receipt (Stephens, 2003; Stephens Jr., 2006; Evans and Moore, 2011, 2012). Additionally, research shows that households adjust consumption even in response to small anticipated shocks (Cochrane, 1989; Parker, 1999; Browning and Collado, 2001; Hsieh, 2003; Souleles et al., 2006), suggesting that adjusting to small income fluctuations can be costly. This holds not only for lower-income households.

Research also documents a link between payment frequency and household expenditure cycles, indicating that less frequent payments can lead to cyclical consumption patterns (Stephens and Unayama, 2011; Berniell, 2018; Baugh and Correia, 2022), implying that the ability to smooth consumption is influenced by payment timing. Experimental evidence also highlights the presence of self-control issues in intertemporal choices (i.e., time inconsistency (DellaVigna, 2009)), and that stress can affect economic behaviors and decisions, including time preferences (Delaney et al., 2014; Vitt et al., 2021).[42]

Motivated by these considerations, we investigate whether expenditure patterns change

[42] An intriguing hypothesis by Vitt et al. (2021) suggests that stress might influence food choices, potentially leading to a preference for less healthy, comfort foods.

Table 4 Distress and Expenditures - Bi-monthly

	Food at home		Perishables		Food away		Leisure		Alcohol	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stretch	-1.584*	-1.614*	-0.292	-0.282	-0.552	-0.575	-1.459**	-1.393*	-0.840	-0.790
	(0.868)	(0.873)	(0.213)	(0.216)	(0.565)	(0.569)	(0.742)	(0.735)	(0.603)	(0.597)
Day of stretch	0.496	0.488	0.243	0.246	-2.340**	-2.347**	-0.206	-0.188	-1.091**	-1.077**
	(1.287)	(1.288)	(0.295)	(0.295)	(0.976)	(0.977)	(0.849)	(0.847)	(0.498)	(0.497)
Last4Days	-0.760	-0.936	-0.245*	-0.185	-0.00844	-0.142	-0.112	0.274	-0.182	0.110
	(0.524)	(0.729)	(0.127)	(0.171)	(0.424)	(0.501)	(0.387)	(0.488)	(0.217)	(0.374)
Days from prev		0.0236		-0.00806		0.0179		-0.0517		-0.0392
		(0.0694)		(0.0177)		(0.0413)		(0.0489)		(0.0437)
Observations	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207
R-squared	0.158	0.158	0.145	0.145	0.232	0.232	0.108	0.108	0.101	0.102
Mean	16.542	16.542	3.548	3.548	12.397	12.397	2.271	2.271	2.214	2.214
Days from	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are expenditures (in US$) for different categories: *food at home, perishables, food away, leisure, and (total) alcohol*. We consider households where at least one member is paid bi-monthly. Robust standard errors are used.

during periods of stretch, using data from the Diary Survey of the CEX, as detailed in Section 6.1. We anticipate two potential scenarios during periods of stretch. First, there may be a general decrease in expenditures, particularly noticeable toward the final days of the stretch period. Second, households might exhibit a more complex adjustment by substituting one type of expenditure for another, possibly to cover essential, non-deferrable expenses.

In Table 4, we present the results from Equation 2, examining expenditures on items for immediate consumption and alcohol. Specifically, we analyze food consumed at home in Columns (1) and (2), perishables in Columns (3) and (4), food consumed away from home in Columns (5) and (6), leisure expenditures in Columns (7) and (8), and total alcohol expenditures in Columns (9) and (10). For all categories, we estimate two specifications: with and without *DaysFromPrev*. The sample includes households where at least one member of the couple is paid bi-monthly.

As we can see, during periods of stretch, there is a decrease in total spending on food consumed at home, amounting to approximately $1.60. Although the reductions in spending on perishables and food away from home are not statistically significant, they follow a similar trend. Spending on leisure activities also significantly decreases, by about $1.40. In the last four days of a stretch period, we observe a significant reduction in spending on food away from home, approximately $2.35, which represents a 19% reduction compared to the $12.40 daily average. These findings suggest a reduction in non-essential spending, consistent with the presence of financial distress.

Importantly, we find no increase in alcohol consumption, either overall or when distinguishing between alcohol consumed at home or away, nor in tobacco consumption for

both samples (Columns (9) and (10) of Tables 4 and D4, and Table D2). In fact, the coefficients are consistently negative and significantly so for alcohol consumption during stretch days in our bi-monthly sample. This contradicts the hypothesis that our main findings on IPV are driven by increased consumption of these substances during periods of distress.

Regarding other expenditure categories, shown in Table D3, we find no significant effect on spending for durables or repairs. However, there is a significant decrease in non-deferrable expenditures during periods of stretch, although this is more than offset by an increase in spending on these items during the final days of the stretch period. This suggests that households may reduce spending on certain items to prioritize more important, less flexible payments. This pattern is consistently reflected in total expenditures.

Together, these findings provide evidence that the identified shock disrupts how households manage their finances, potentially indicating financial distress. Results for households where at least one member of the couple works in the private sector, reported in Table D4 and Table D5 in Appendix D, show a similar pattern.[43]

6.5 Financial Distress and Time Use

Another question we address is whether instances of financial distress affect how people spend their days – specifically, the types of activities they engage in, where these activities take place, and with whom. In this section, we analyze time-use patterns during periods of financial distress using data from the American Time Use Survey (ATUS), as described in Section 6.2. The results are reported in Table 5 for all respondents in bi-monthly couples, including both women and men. Further breakdowns by gender are provided in Tables E4 through E7 in Appendix E.

In Panel A of Table 5, we examine various categories of activities. Columns (1) and (2) focus on minutes spent on non-essential spending activities, such as shopping (excluding groceries, gas, and food) and personal care services, while Columns (3) and (4) look at time spent researching purchases. As shown, during days of stretch, individuals allocate significantly more time to researching purchases – almost two additional minutes per day – a finding consistent with increased attention to how finances are spent. When breaking down the results by gender, this increase appears to be primarily driven by women (Table E4).

While there is no significant overall effect, we find that on these same days, women in private-sector couples significantly reduce the amount of time devoted to non-essential

[43]We also consider a more restricted sample, where at least one member of the couple is both paid bi-monthly and works in the private sector. The results remain consistent (available upon request).

Table 5 Distress and Time Use by activity, location, and companionship - Bi-monthly

Panel A								
	Spending		Purchases Research		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	0.889	0.900	0.157	0.155	6.543	6.645	11.40	11.59
	(3.662)	(3.664)	(0.349)	(0.349)	(8.419)	(8.422)	(7.938)	(7.937)
Day of stretch	7.119	7.295	1.836**	1.806**	-18.81	-17.04	-19.90	-16.63
	(7.502)	(7.591)	(0.715)	(0.723)	(17.25)	(17.45)	(16.26)	(16.44)
Last4Days	4.683	5.168	-0.0157	-0.0998	-7.175	-2.315	-2.030	6.931
	(4.191)	(5.230)	(0.399)	(0.498)	(9.634)	(12.02)	(9.084)	(11.33)
Days from prev		-0.0697		0.0121		-0.700		-1.290
		(0.450)		(0.0429)		(1.034)		(0.975)
Observations	1,416	1,416	1,416	1,416	1,416	1,416	1,416	1,416
R-squared	0.094	0.094	0.044	0.044	0.121	0.122	0.146	0.147
Mean	19.808	19.808	.148	.148	549.301	549.301	501.924	501.924
Effect relative to the mean	4.49	4.54	106.08	104.73	1.19	1.21	2.27	2.31
Days from	No	Yes	No	Yes	No	Yes	No	Yes
Panel B								
	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-14.17	-14.27	-28.07*	-28.13*	-18.99	-18.93	22.04*	22.05*
	(16.19)	(16.20)	(16.50)	(16.51)	(19.87)	(19.87)	(12.67)	(12.67)
Day of stretch	-11.25	-13.07	79.34**	78.21**	14.69	7.675	-57.63**	-58.51**
	(33.16)	(33.55)	(33.80)	(34.20)	(42.03)	(42.62)	(26.80)	(27.18)
Last4Days	2.702	-2.300	-9.404	-12.52	-10.60	-27.37	8.230	6.117
	(18.53)	(23.12)	(18.88)	(23.56)	(23.80)	(29.15)	(15.17)	(18.59)
Days from prev		0.720		0.448		2.466		0.311
		(1.989)		(2.028)		(2.476)		(1.579)
Observations	1,416	1,416	1,416	1,416	950	950	950	950
R-squared	0.143	0.143	0.233	0.233	0.250	0.251	0.077	0.077
Mean	414.532	414.532	315.172	315.172	341.001	341.001	112.542	112.542
Effect relative to the mean	3.42	3.44	8.91	8.93	5.57	5.55	19.58	19.59
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, consumption research, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at-home, with the spouse, with the kids, with the kids only.* The sample includes both female and males respondents in couples where at least one member is paid bi-monthly.

spending (Table E10). When examining activities potentially related to general distress, such as personal care (Columns (5) and (6)) and sleeping (Columns (7) and (8)), no significant changes are detected on average. Similarly, there is no observed change in time spent relaxing (Table E3, Columns (7) and (8) of Panel A). However, we note that the coefficient for $DayOfStretch$ is consistently negative, and there is some evidence that women in bi-monthly couples report less time spent sleeping during days of stretch (Table E4).

In Panel B of Table 5, we focus on time use by location and companionship. We find no significant change in the amount of time spent at home, as shown in Columns (1) and (2), or in the amount of time spent outside the home (Table E3, Columns (1) and (2) of Panel B).[44] As discussed, this result should be interpreted with caution, as time spent at

[44]Since location is not recorded for all activities, these two measures are not necessarily complements; hence, both are investigated separately.

home could reflect financial distress, general distress, or exposure. For example, time at home may increase if there is less money for outside activities or decrease if individuals prefer to stay out to cope with stress. Thus, the null result might be due to multiple factors acting simultaneously, canceling each other out.

Regarding companionship, Columns (3) and (4) of Panel B of Table 5 show an increase in total time spent with a spouse during days of stretch. While there is a significant decrease in time spent alone with children (Columns (7) and (8)), the overall time spent with them remains unchanged, as indicated by Columns (5) and (6). This suggests that rather than reflecting reduced care for children,[45] the results may reflect increased time spent with both spouse and children. Table E3 supports this hypothesis, showing an increase in time spent with both spouse and children during days of stretch (Columns (7) and (8) of Panel B) and no change in time spent on activities related to childcare (Columns (3) and (4) of Panel A). These results suggest that families are spending more time together, with spouses sharing childcare responsibilities – essentially a reallocation of roles in the household. Importantly, there is no change in time spent alone with the spouse (Table E3, Columns (5) and (6) of Panel B), nor in time spent caring for adults (Table E3, Columns (5) and (6) of Panel A) or doing household activities (Table E3, Columns (1) and (2) of Panel A), which could potentially signal tension within the couple.

Overall, these results indicate that financial distress also affects how families manage their time and resources. Specifically, there is greater attention to financial expenditures and an increase in time spent together. Additionally, the findings suggest increased sharing of responsibilities within families. Tables E8 and E9, which focus on respondents (both women and men) in couples where at least one partner works in the private sector, show consistent results. Tables E10 and E11, as well as Tables E12 and E13, further break down the analysis by gender.[46]

7 Conclusions

In this paper, we document the significant impact that financial distress, identified as periods of stretch caused by shifts in the timing of pay, can have on intimate partner violence (IPV). By examining data from the National Crime Victimization Survey (NCVS) in the U.S. and leveraging the interplay between bank closing days and fixed pay dates, we demonstrate that such financial distress can increase the likelihood of women being

[45] Carr and Packham (2021) show that shifting the disbursement of SNAP benefits can increase child maltreatment.

[46] We also considered a more restricted sample where at least one member of the couple is both paid bi-monthly and works in the private sector. The results remain consistent (available upon request).

victimized by an intimate partner. This effect is especially pronounced for women in poorer and larger households, as well as in situations where a greater share of household finances is affected.

While existing research has often focused on major financial shocks like job loss or large-scale economic downturns, this study delves into the subtler, more frequent instances of financial strain – such as delays or variations in pay schedules – and how these smaller shocks can also exacerbate intimate partner violence. Our research shows that even short-term financial disruptions can have a significant impact on household dynamics and well-being, highlighting the pervasive influence of financial stress on IPV.

In addition to examining the direct relationship between financial distress and IPV, we also provide supporting evidence that periods of financial strain are associated with worsened household conditions. By analyzing household expenditures from the CEX data and time-use patterns from the ATUS data, we find significant shifts in spending during periods of stretch, particularly on food-related items. This is coupled with an increased focus on purchases research, suggesting that households facing financial distress must adopt strategies to stretch limited resources. Additionally, we observe that couples tend to spend more time together with their children during these periods, which may point to a re-distribution of household responsibilities and adjustments in family roles. This increase in time together, however, may also reflect additional stressors within the household.

As gender-based violence remains a pervasive global issue, understanding the root causes of IPV is essential for developing effective prevention strategies and informing policy debates. Our findings highlight the detrimental effects of financial hardship caused by payment delays, showing how such seemingly minor disruptions in financial stability can have profound consequences on household dynamics and safety. These results contribute to the growing body of literature that emphasizes the importance of addressing financial instability as a critical driver of IPV.

Moreover, the findings offer suggestive evidence that policy interventions aimed at stabilizing household finances – such as ensuring a fixed and non-movable pay date – could play a meaningful role in mitigating intimate partner violence. By reducing the frequency and unpredictability of financial distress, policymakers could help alleviate some of the pressure that exacerbates tensions within households, potentially reducing instances of IPV. Such measures would be particularly impactful in vulnerable populations, where financial fragility amplifies the risk of violence.

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Appendix A Identifying Stretches

To identify stretches and months of stretch, we made several assumptions and choices, beginning with the selection of national holidays considered.

For the computation, we included all federal holidays excluding Juneteenth (instituted in 2021). These are listed in Table A1, along with their respective dates. Notably, all floating holidays, except Thanksgiving, fall on a Monday. However, we note that between 1995 and 2019, Thanksgiving never occurred on November 30$^{\text{th}}$. Fixed-date holidays (e.g., Christmas Day) are also included for thoroughness.

As stated in the main text, our main variables are built under the assumption that if a payday coincides with a bank closing day, the payment is made on the preceding Friday. In our setting, this means that if the 15$^{\text{th}}$ of the month falls on a Saturday, a Sunday, or a Monday during a federal holiday, the payment is rescheduled to the Friday prior. The same adjustment applies to the last day of the month. As a robustness check, we computed two additional measures. The first considers only closing days due to weekends, using the same rescheduling assumption just outlined. The second assumes that the payday occurs on the nearest business day: if the 15$^{\text{th}}$ (or last day) of the month falls on a Saturday, the payment shifts to the preceding Friday; if it falls on a Sunday, the payment moves to the following Monday. In case Monday is a national holiday, we assume payday is on the preceding Friday. This also applies if the original payday was on a Sunday but Monday was a national holiday.[47]

Figures A1, Table A4 and Table A5 provide additional evidence of the randomness of our main measures. Figure A1 plots the number of days of stretch in a month for the period 2000-2019 (1995-1999 available upon request). Table A4 shows, considering the period 1995-2019, the number of times month m was a month of stretch (Column (1)) and the number of times a stretch occurred in month m (Column (3)), along with their respective probabilities (Columns (2) and (4)). The remaining columns show instead the average number of days of stretch for every month (Column (5)) and the average number of days of a stretch when one occurs, that is conditional on non-zero values of $D_{m,y}$ (Column (6)). Table A5, instead, more formally shows and tests for differences in the distribution of months, distinguishing whether a stretch occurred or not – that is focusing on $S_{m,y}$– with a Kolmogorov-Smirnov test and a t-test. Similarly, by season. Both tables indicate that financial distress is not more likely to occur in any specific month or season.

[47]Note that the nearest-business-day assumption affects calculations only for paydays falling on Sundays.

Table A1 Federal holidays

Floating holidays	**Date**
Martin Luther King Jr's Birthday	Third Monday of January
Presidents' Day	Third Monday of February
Memorial Day	Last Monday of May
Labour Day	First Monday of September
Columbus Day	Second Monday of October
Thanksgiving Day	Fourth Thursday of November
Fixed-dates holidays	**Date**
New Year's day	01 January
Independence Day	4 July
Veterans Day	11 November
Christmas Day	25 Dec

Notes: List of holidays considered. Martin Luther King Jr's Birthday was instituted in 1983. Juneteenth not included as it was instituted as a federal holiday in 2021.

Table A2 Days of Stretch

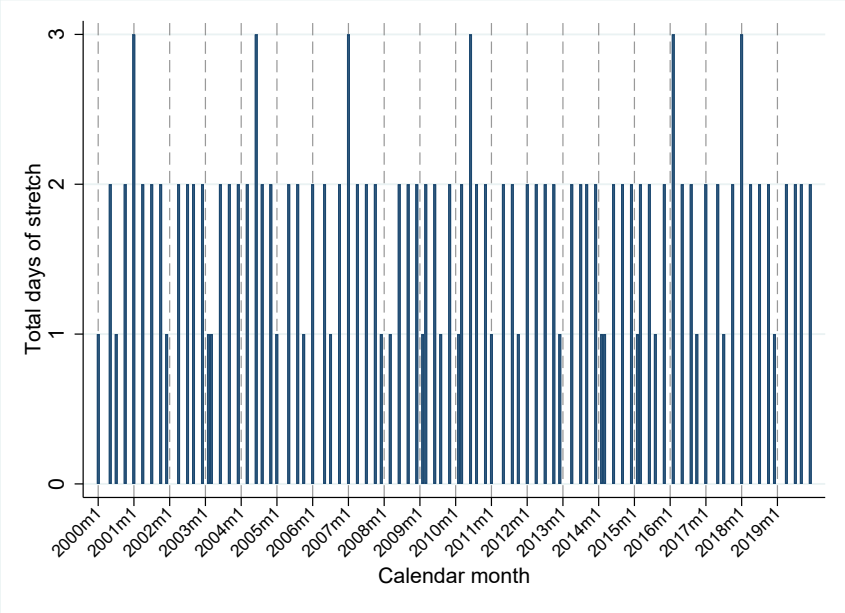
(a) Days of Stretch by Month

Days of stretch, either periods	Freq.	Percent	Cum.
0	187	62.33	62.33
1	29	9.67	72.00
2	76	25.33	97.33
3	8	2.67	100.00
Total	300	100.00	

(b) Days of Stretch in the Final Dataset

Days of stretch, either periods	Freq.	Percent	Cum.
0	2,214,344	62.45	62.45
1	336,148	9.48	71.93
2	900,301	25.39	97.33
3	94,793	2.67	100.00
Total	3,545,586	100.00	

Notes: The table shows the frequency of days of stretch: in subtable (a), days of stretch by month, and in subtable (b), days of stretch in the final dataset.



Notes: For every month m between Jan 2000 and Dec 2019, the figure shows the number of days of stretch occurring in m

Figure A1 Number of days of stretch in a month

Table A4 Occurrences of stretches

	pr($D>0\|M=m$)		pr($M=m\|D>0$)		Days of stretch (D)	
	Nr	Freq	Nr	Freq	Mean	$Mean\|D>0$
Jan	11	0.44	11	0.10	0.90	2.10
Feb	9	0.36	9	0.08	0.40	1.20
Mar	10	0.40	10	0.09	0.60	1.60
Apr	8	0.32	8	0.07	0.60	2.00
May	7	0.28	7	0.06	0.60	2.00
Jun	10	0.40	10	0.09	0.90	2.30
Jul	12	0.48	12	0.11	0.80	1.70
Aug	9	0.36	9	0.08	0.60	1.70
Sep	8	0.32	8	0.07	0.60	2.00
Oct	11	0.44	11	0.10	0.80	1.70
Nov	6	0.24	6	0.05	0.50	2.00
Dec	12	0.48	12	0.11	0.80	1.70

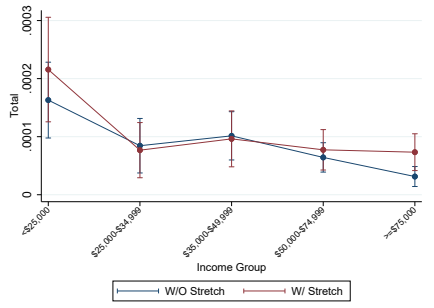
Notes: For every month m, Column (1) reports the number of times m was a month of stretch, Columns (2) reports the probability of m being a month of stretch, Column (3) reports the number of times a stretch occurred in m, Column (4) reports the probability of a stretch occurring in month m. Column (5) shows the average number of days of stretch in m, Column (6) the average monthly number of days of a stretch when one occurs, that is conditional on non-zero values of $D_{m,y}$. Years: 1995-2019. Number of months of stretch: 113; Number of months (for month m): 25.

Table A5 Occurrences of stretches

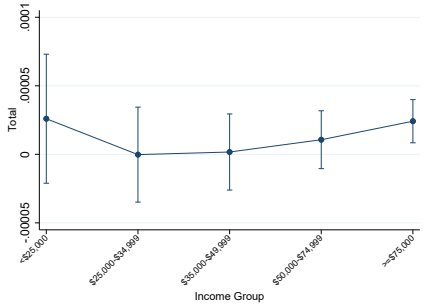
	Full Sample		FD=1		FD=0		KS-Test	t-test
	Mean	SD	Mean	SD	Mean	SD	P-value	P-value
By season:								
Winter	0.25	0.43	0.28	0.45	0.23	0.42	0.98	0.30
Spring	0.25	0.43	0.22	0.42	0.27	0.44	1.00	0.37
Summer	0.25	0.43	0.27	0.45	0.24	0.43	1.00	0.45
Autumn	0.25	0.43	0.22	0.42	0.27	0.44	1.00	0.37
By month:								
Jan	0.08	0.28	0.10	0.30	0.07	0.26	1.00	0.50
Feb	0.08	0.28	0.08	0.27	0.09	0.28	1.00	0.86
Mar	0.08	0.28	0.09	0.29	0.08	0.27	1.00	0.80
Apr	0.08	0.28	0.07	0.26	0.09	0.29	1.00	0.54
May	0.08	0.28	0.06	0.24	0.10	0.30	1.00	0.30
Jun	0.08	0.28	0.09	0.29	0.08	0.27	1.00	0.80
Jul	0.08	0.28	0.11	0.31	0.07	0.26	1.00	0.27
Aug	0.08	0.28	0.08	0.27	0.09	0.28	1.00	0.86
Sep	0.08	0.28	0.07	0.26	0.09	0.29	1.00	0.54
Oct	0.08	0.28	0.10	0.30	0.07	0.26	1.00	0.50
Nov	0.08	0.28	0.05	0.23	0.10	0.30	0.99	0.14
Dec	0.08	0.28	0.11	0.31	0.07	0.26	1.00	0.27

Notes: Occurrences of stretches by season and by month, mean and standard values. *Full sample* considers all months, $S = 1$ considers months of distress only, while $S = 0$ only months of no-distress. *KS-Test* reports the results of a Kolmogorov-Smirnov test, *t-test* those from a t-test for differences of means. Years: 1995-2019.

Appendix B Tables and Figures



(**A.**) Predicted probability of IPV



(**B.**) Average marginal effect of a day of stretch

Notes: Figure A plots the predicted probability of IPV (any crime) by income group for months with a stretch (red line) and without it (blue line). Figure B plots the average marginal effect of a day of stretch by income group. Results from a probit model including year, month, and region FE, covariates (age and indicators for having degree, identifying as Black, identifying as white, living in a rural area, being employed), and full interactions between income groups and, respectively, $S_{m,y}$ and $D_{m,y}$

Figure B1 The effect of financial distress by income level

Table B1 NCVS sample - Descriptive Statistics

	Mean	Median	SD
Age	42.86	42.00	11.18
Degree (%)	0.33	0.00	0.47
College(any) (%)	0.62	1.00	0.49
Black (%)	0.06	0.00	0.24
White (%)	0.87	1.00	0.34
Rural (%)	0.24	0.00	0.43
Employed (%)	0.78	1.00	0.41
Northeast (%)	0.17	0.00	0.38
Midwest (%)	0.26	0.00	0.44
South (%)	0.35	0.00	0.48
West (%)	0.21	0.00	0.41
Poorest (%)	0.09	0.00	0.29
Household with kids (%)	0.41	0.00	0.49
Household size	3.27	3.00	1.29
Household size> 2 (%)	0.64	1.00	0.48
N of observations	3,545,586		

	Mean	**Median**	**SD**
Victimized by IP	85.46	0.00	9243.98
Victimized by IP-Violent	81.79	0.00	9043.52
Victimized by IP-NonViolent	3.67	0.00	1914.82
Reported IPV (%)	54.46	100.00	49.88
Reported by victim IPV (%)	40.59	0.00	49.19
IPV-under Drug or Alcohol (%)	42.57	0.00	49.53
N of observations	3,545,586		

Notes: Panel A reports demographic characteristics for the final sample of women from NCVS. Panel B reports crime statistics for the final sample of women from NCVS. Crime variables are rescaled by one million, while reporting and under drug or alcohol variables are rescaled by 100 and non-missing only if there is IPV. Hence those are percentages of IPV episodes.

Table B2 NCVS Sample - Household Income Distribution

Income	**Frequency**	**Percent (%)**	**Cumulative (%)**
Less than $5,000	19,956	0.65	0.65
$5,000 to $7,499	14,389	0.47	1.12
$7,500 to $9,999	18,729	0.61	1.73
$10,000 to $12,499	33,085	1.08	2.81
$12,500 to $14,999	36,073	1.18	3.98
$15,000 to $17,499	39,801	1.30	5.28
$17,500 to $19,999	49,896	1.63	6.91
$20,000 to $24,999	120,355	3.92	10.83
$25,000 to $29,999	131,606	4.29	15.12
$30,000 to $34,999	162,723	5.30	20.42
$35,000 to $39,999	169,284	5.52	25.94
$40,000 to $49,999	321,735	10.49	36.43
$50,000 to $74,999	675,387	22.01	58.44
$75,000 and over	1,275,051	41.56	100.00
Total	3,068,070	100.00	

Notes: Income distribution for the final sample of women from NCVS. Max Bracket: $75,000.

Table B3 Distress and IPV - Non-Violent Crimes

	Non-Violent					
Distress:	**Any**		**End of the Month**		**Start of the Month**	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	-0.280	-0.464	-1.920**	-1.538**	1.826	0.971
	(0.951)	(0.967)	(0.818)	(0.622)	(1.895)	(1.882)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.081	0.000	0.081	0.000	0.081
Mean tot	3.667	2.454	3.667	2.454	3.667	2.454
Mean	4.064	2.809	4.488	3.247	3.24	2.019
Effect wrt Mean	6.9	16.53	42.78	47.36	56.35	48.12
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *non-violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of Stretch* indicates the number of days of stretch occurring in a month in Columns (1) and (2), at the end of the month in Columns (3) and (4) or at the start of the month in Columns (5) and (6). *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at an individual level.

Table B4 Distress and IPV - Stretch at the start of the month

	Distress: Start of the month			
	Total		Violent	
	(1)	(2)	(3)	(4)
Days of Stretch	14.28*	11.62	12.45	10.65
	(8.025)	(8.824)	(7.798)	(8.621)
Observations	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130
Mean tot	85.458	85.899	81.792	83.445
Mean	82.303	82.372	79.062	80.354
Effect wrt Mean	17.35	14.11	15.75	13.25
Year FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes
Region FE	No	Yes	No	Yes
Controls	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total* and *violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of Stretch* indicates the number of days of stretch occurring at the start of the month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B5 Distress and IPV - Duration of the stretch

Distress: Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days 1	19.94	13.97	22.24	17.27	-2.301	-3.298
	(18.81)	(20.67)	(18.43)	(20.57)	(3.775)	(2.070)
Days 2	12.97	17.02	13.30	17.53	-0.333	-0.510
	(11.71)	(13.07)	(11.52)	(12.89)	(2.138)	(2.211)
Days 3	131.1***	145.4**	132.1***	147.4**	-0.924	-1.949
	(48.39)	(58.35)	(48.29)	(58.29)	(3.070)	(2.555)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Mean tot	85.458	85.899	81.792	83.445	3.667	2.454
Mean	77.224	77.531	73.159	74.722	4.064	2.809
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days* are indicators for the number of days of stretch occurring during a month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B6 Distress and other crimes - Women sample

Distress: Any						
	Any Offender			**Excluding IP**		
	Total	Violent	Non-Violent	Total	Violent	Non-Violent
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	62.24	19.99	40.92	46.25	3.396	41.17
	(55.75)	(19.74)	(52.37)	(55.41)	(18.66)	(52.36)
Observations	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189
R-squared	0.095	0.101	0.090	0.094	0.097	0.090
Mean tot	7449.717	934.019	6557.069	7370.479	852.678	6554.965
Mean	7365.421	918.571	6489.548	7294.07	846.096	6487.301
Effect wrt Mean	.85	2.18	.63	.63	.4	.63
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes, overall and excluding the ones committed by an intimate partner. Outcomes are rescaled by one million. *Days of stretch* counts the number of days of stretch in a month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B7 Distress and other crimes - NCVS full sample

Distress: Any						
	Any Offender			**Excluding IP**		
	Total	Violent	Non-Violent	Total	Violent	Non-Violent
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	-17.22	1.055	-19.26	-17.93	-2.107	-15.48
	(24.06)	(10.91)	(21.79)	(23.81)	(10.29)	(21.77)
Observations	18,485,579	18,485,579	18,485,579	18,485,579	18,485,579	18,485,579
R-squared	0.104	0.107	0.094	0.102	0.102	0.094
Mean tot	9142.803	1875.3	7388.029	8923.821	1663.351	7362.171
Mean	9115.559	1868.85	7366.162	8897.592	1659.468	7337.921
Effect wrt Mean	.19	.06	.26	.2	.13	.21
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes, overall and excluding the ones committed by an intimate partner. Outcomes are rescaled by one million. *Days of stretch* counts the number of days of stretch in a month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level. The sample includes all NCVS respondents, 1995-2019.

Table B8 Distress and IPV - Men sample

Distress: Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	-0.257	1.170	-0.501	0.867	0.244	0.303
	(2.713)	(3.499)	(2.632)	(3.388)	(0.673)	(0.846)
Observations	3,524,326	2,844,392	3,524,326	2,844,392	3,524,326	2,844,392
R-squared	0.000	0.099	0.000	0.097	0.000	0.061
Mean tot	20.429	23.204	18.727	21.094	1.702	2.109
Mean	19.985	21.402	18.623	19.712	1.363	1.69
Effect wrt Mean	1.29	5.47	2.69	4.4	17.92	17.94
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of stretch* counts the number of days of stretch in a month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. The sample is composed of men. Standard errors are clustered at the individual level.

Table B9 Distress and IPV - Compression Days

	Ease: Any				**Ease: End of the month**			
	Total		Violent		Total		Violent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Compression	1.386	-0.0296	1.916	0.176	-6.254	-8.220	-7.926	-10.33
	(6.442)	(7.252)	(6.329)	(7.105)	(7.344)	(8.513)	(7.141)	(8.277)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.128	0.000	0.130
Mean tot	85.458	85.899	81.792	83.445	85.458	85.899	81.792	83.445
Mean	82.676	82.451	78.513	79.48	87.365	87.239	84.245	85.289
Effect wrt Mean	1.68	.04	2.44	.22	7.16	9.42	9.41	12.11
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, and *violent* crimes committed by an intimate partner. Outcomes are re-scaled by one million. *Days of Compression* indicates the total number of days of compression (Columns 1-4), and the number of days of compression at the end of the month (Columns 5-8). Controls include age and indicators for level of income, being in a rural area, and being employed. *Mean* is computed for months 'without ease', while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B10 Distress and IPV - Compression at the start of the month

	Ease: Start of the month			
	Total		Violent	
	(1)	(2)	(3)	(4)
Days of Compression	14.94	14.71	19.34*	19.02*
	(10.21)	(11.44)	(10.03)	(11.31)
Observations	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130
Mean tot	85.458	85.899	81.792	83.445
Mean	80.175	82.213	75.241	78.638
Effect wrt Mean	18.63	17.9	25.7	24.19
Year FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes
Region FE	No	Yes	No	Yes
Controls	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, and *violent* crimes committed by an intimate partner. Outcomes are re-scaled by one million. *Days of Compression* indicates the total number of days of compression at the start of the month. Controls include age and indicators for level of income, being in a rural area, and being employed. *Mean* is computed for months 'without ease', while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B11 Distress and IPV - 31-days months

	All months				**Months w/o stretch**			
	Total		Violent		Total		Violent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
31Days	-6.702	-11.09	-3.702	-8.018	-11.17	-17.22	-6.399	-13.61
	(9.668)	(10.76)	(9.415)	(10.57)	(11.82)	(12.86)	(11.38)	(12.50)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	2,214,344	1,779,623	2,214,344	1,779,623
R-squared	0.000	0.128	0.000	0.130	0.000	0.174	0.000	0.176
Mean tot	85.458	85.899	81.792	83.445	77.224	77.545	73.159	74.735
Mean	89.353	90.22	83.938	86.004	84.166	83.836	77.235	78.831
Effect wrt Mean	7.5	12.29	4.41	9.32	13.27	20.54	8.29	17.26
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	No	No	No	No	No	No	No	No
Id FE	No	Yes	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total* and *violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *31Days* is an indicator for months with 31 days. In Columns (1)-(4), the sample includes all months. In Columns (5)-(8), the sample includes only months without a stretch. *Mean* is computed for 'non-31-days months', while *Mean tot* is computed on the whole sample. Standard errors are clustered at an individual level.

Table B12 Distress and IPV - Other income categories

Distress - Any	Between 25000 and 34999		Between 35000 and 49999		Between 50000 and 74999		Above 75000	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	2.741	5.899	-0.135	1.459	12.46	10.52	22.24***	21.38***
	(22.00)	(21.77)	(17.56)	(17.49)	(12.29)	(12.13)	(7.631)	(7.489)
Observations	269,284	269,284	452,614	452,614	631,733	631,733	1,197,730	1,197,730
R-squared	0.171	0.171	0.188	0.190	0.120	0.118	0.100	0.103
Mean tot	111.407	107.693	114.888	112.679	72.816	71.233	37.571	35.901
Mean	113.532	107.557	117.222	113.67	68.571	68.571	25.312	23.979
Effect wrt Mean	2.41	5.48	.12	1.28	18.17	15.34	87.86	89.181
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total* and *violent* crimes committed by the intimate partner for different income categories. Outcomes are rescaled by one million. *Days of stretch* counts the number of days of stretch in a month. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table B13 Heterogeneity of shocks: Both in private

Distress:	**Any**		**End of the month**	
	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)
Days of Stretch	16.88*	16.63*	26.35**	27.61**
	(9.968)	(9.873)	(13.16)	(13.13)
Observations	1,112,363	1,112,363	1,112,363	1,112,363
R-squared	0.146	0.147	0.146	0.147
Mean tot	75.515	73.717	75.515	73.717
Mean	63.395	61.955	67.802	65.423
Effect wrt Mean	26.63	26.85	38.86	42.21
Year Month Id Region FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, and *violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of Stretch* indicates the number of days of any stretch in Columns (1) and (2), and the days of a stretch at the end of the month in Columns (3) and (4). The sample is composed of women from households where both members of the couple work in the private sector. Standard errors are clustered at the individual level.

Table B14 Distress and IPV - Individual Characteristics

Panel A	**Women without college education**				**Women with college education**			
Distress:	**Any**		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	21.72*	24.26*	35.23**	37.24**	13.29*	12.55*	4.784	6.097
	(12.69)	(12.60)	(16.10)	(16.05)	(7.027)	(6.911)	(7.226)	(7.193)
Observations	1,045,794	1,045,794	1,045,794	1,045,794	1,791,224	1,791,224	1,791,224	1,791,224
Mean tot	118.57	115.702	118.57	115.702	64.76	62.527	64.76	62.527
Mean	104.395	99.789	108.861	105.063	59.863	58.076	65.723	62.769
Effect wrt Mean	20.8	24.31	32.36	35.44	22.2	21.62	7.28	9.71
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B	**Women below 43 y.o.**				**Women above 43 y.o.**			
Distress:	**Any**		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	32.10***	32.75***	26.31**	28.22**	-0.877	-0.570	1.461	2.661
	(11.39)	(11.29)	(13.37)	(13.33)	(5.657)	(5.529)	(6.531)	(6.488)
Observations	1,434,143	1,434,143	1,434,143	1,434,143	1,418,007	1,418,007	1,418,007	1,418,007
Mean tot	128.997	126.208	128.997	126.208	42.313	40.197	42.313	40.197
Mean	109.636	106.28	121.773	118.083	45.143	42.886	43.86	41.061
Effect wrt Mean	29.28	30.81	21.61	23.9	1.94	1.33	3.33	6.48
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C	**White Women**				**Black Women**			
Distress:	**Any**		**End of the month**		**Any**		**End of the month**	
	Total	Violent	Total	Violent	Total	Violent	Total	Violent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days of Stretch	13.49**	13.69**	10.72	12.29	35.58	35.58	30.52	30.52
	(6.752)	(6.668)	(8.008)	(7.979)	(37.34)	(37.34)	(31.47)	(31.47)
Observations	2,487,323	2,487,323	2,487,323	2,487,323	174,214	174,214	174,214	174,214
Mean tot	86.84	84.428	86.84	84.428	97.581	97.581	97.581	97.581
Mean	79.257	76.680	85.122	81.930	91.979	91.979	98.688	98.688
Effect wrt Mean	17.02	17.85	12.59	15	38.68	38.68	30.93	30.93
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total* and *violent* crimes committed by the intimate partner. Outcomes are rescaled by one million. *Days of Stretch* indicates the number of days of any stretch in Columns (1), (2), (5) and (6), and the days of a stretch at the end of the month in Columns (3), (4), (7) and (8). Panel A shows results for college education, Panel B for age, and Panel C for race. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Appendix C Robustness tests

Table C1 Distress and IPV - Treatment indicators

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Stretch	22.40**	24.40**	23.25**	25.69**	-0.849	-1.287
	(10.20)	(11.58)	(10.02)	(11.45)	(1.870)	(1.747)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Mean tot	85.458	85.899	81.792	83.4451	3.667	2.454
Mean	77.224	77.5311	73.1591	74.7221	4.064	2.809
Effect wrt Mean	29	31.47	31.77	34.38	20.9	45.81
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by an intimate partner, rescaled by one million. *Stretch* is a dummy indicating whether the month is a month of stretch. Standard errors are clustered at the individual level.

Table C2 Distress and IPV - Closest Business Day

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	12.59**	12.01*	14.21**	13.00**	-1.624*	-0.988
	(5.608)	(6.370)	(5.538)	(6.301)	(0.882)	(0.941)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Mean tot	85.458	85.899	81.792	83.4451	3.667	2.454
Mean	80.651	81.923	76.12	79.117	4.531	2.806
Effect wrt Mean	15.61	14.67	18.67	16.43	35.83	35.22
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by an intimate partner, rescaled by one million. *Days of Stretch* indicates the total number of days of stretch in the month. In the computation, the closest business day is used as the actual pay date. Standard errors are clustered at the individual level. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample.

Table C3 Distress and IPV - Weekends only

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	9.367*	10.97*	9.646*	11.37*	-0.279	-0.405
	(5.520)	(6.266)	(5.427)	(6.182)	(1.008)	(1.021)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Mean tot	85.458	85.899	81.792	83.4451	3.667	2.454
Mean	79.925	80.3321	75.861	77.523	4.064	2.809
Effect wrt Mean	11.72	13.66	12.72	14.67	6.87	14.4
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by an intimate partner, rescaled by one million. *Days of Stretch* indicates the total number of days of stretch in the month. In the computation, federal holidays are excluded and only weekends are considered. Standard errors are clustered at the individual level. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample.

Table C4 Distress and IPV - Overall Financial Distress

	Net Financial Distress					
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Net Days of Stretch	7.378*	8.753*	7.349*	8.937*	0.0285	-0.184
	(4.172)	(4.730)	(4.086)	(4.638)	(0.842)	(0.928)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Mean tot	85.458	85.899	81.792	83.445	3.667	2.454
Mean	78.948	76.48	75.738	74.87	3.209	1.61
Effect wrt Mean	9.34	11.44	9.70	11.94	.89	11.45
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by an intimate partner. Outcomes are re-scaled by one million. *Net Days of Stretch* indicates the total number of days of stretch net out of days of compression in a month. Controls include age and indicators for level of income, being in a rural area, and being employed. *Mean* is computed for months without relief, while *Mean tot* is computed on the whole sample. Standard errors are clustered at the individual level.

Table C5 Distress and IPV - Number of incidents

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	0.000011*	0.000013*	0.000011*	0.000014**	-0.000000	-0.000000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.138	0.000	0.139	0.000	0.081
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are the number of *total*, *violent* and *non-violent* crimes committed by an intimate partner. *Days of Stretch* indicates the total number of days of stretch in the month. Standard errors are clustered at the individual level.

Table C6 Distress and IPV - Standardized values

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	0.00152**	0.00171**	0.00158***	0.00180**	-0.000146	-0.000242
	(0.000601)	(0.000698)	(0.000605)	(0.000706)	(0.000497)	(0.000505)
Observations	3,545,586	2,852,189	3,545,586	2,852,189	3,545,586	2,852,189
R-squared	0.000	0.128	0.000	0.130	0.000	0.081
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	Yes	No	Yes	No	Yes
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are standardized values for *Total*, *Violent* and *Non-violent*. *Days of Stretch* indicates the total number of days of stretch in the month. Standard errors are clustered at the individual level.

Table C7 Distress and IPV - Probit model

Distress - Any						
	Total		Violent		Non-Violent	
	(1)	(2)	(3)	(4)	(5)	(6)
Days of Stretch	0.0423***	0.0459***	0.0440***	0.0477***	-0.0258	-0.0937
	(0.0152)	(0.0178)	(0.0154)	(0.0179)	(0.0723)	(0.0843)
Observations	3,545,586	2,837,366	3,545,586	2,837,366	1,154,701	215,338
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Id FE	No	No	No	No	No	No
Region FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total*, *violent* and *non-violent* crimes committed by an intimate partner. Results from a probit model. Controls include: age, and indicators for having a degree, being employed, income level, living in a rural area, identifying as Black, identifying as White. *Days of Stretch* indicates the total number of days of stretch in the month. Standard errors are clustered at individual level.

Table C8 Distress and IPV - Other controls

Distress - Any									
	Total			Violent			Non-Violent		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Days of Stretch	15.83**	15.73**	15.91**	16.30**	16.33**	16.38**	-0.464	-0.607	-0.472
	(6.454)	(6.590)	(6.430)	(6.381)	(6.533)	(6.367)	(0.967)	(0.867)	(0.899)
Observations	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189	2,852,189
R-squared	0.128	0.128	0.128	0.130	0.130	0.130	0.081	0.081	0.081
Mean tot	85.899	85.899	85.899	83.4451	83.4451	83.4451	2.454	2.454	2.454
Mean	77.5311	77.5311	77.5311	74.7221	74.7221	74.7221	2.809	2.809	2.809
Effect wrt Mean	20.42	20.29	20.52	21.81	21.86	21.92	16.53	21.6	16.81
Year Month Id Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Season FE	Yes	No	No	Yes	No	No	Yes	No	No
Friday pay	No	Yes	No	No	Yes	No	No	Yes	No
Weekend days	No	No	Yes	No	No	Yes	No	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are dummies for *total, violent* and *non violent* crimes committed by an intimate partner, rescaled by one million. *Days of Stretch* indicates the total number of days of stretch in the month. Additional controls included. *Friday pay* counts the number of times a paycheck was received on a Friday within a month. *Weekend days* counts the weekend days (Saturday or Sunday) in a month. Standard errors are clustered at the individual level. *Mean* is computed for months without distress, while *Mean tot* is computed on the whole sample.

Appendix D Consumption - Additional Tables

Table D1 Average daily expenditures

	Work in Private			**Paid bimonthly**		
	Mean	Median	SD	Mean	Median	SD
Total	177.77	54.00	689.56	212.24	65.06	943.07
Rent	7.05	0.00	86.65	7.25	0.00	100.50
Repair	5.34	0.00	104.43	5.30	0.00	71.34
Food	16.57	0.47	34.24	16.57	0.00	33.82
Food away	10.23	3.29	20.34	12.36	5.19	22.91
Perishables	3.44	0.00	7.82	3.56	0.00	8.51
Alcohol	1.66	0.00	10.18	2.21	0.00	19.23
Alcohol away	0.54	0.00	6.28	0.86	0.00	15.83
Alcohol at home	1.09	0.00	7.82	1.35	0.00	10.79
Tobacco	1.06	0.00	5.92	0.72	0.00	4.61
Observations	390,939			33,207		

Notes: Daily households expenditures: total, rent, repair, food at home, food away, perishables, alcohol, alcohol away, alcohol at home, and tobacco. All values expressed in US dollars (not adjusted for inflation).

Table D2 Distress and Expenditures - Alcohol and Tobacco

	Alcohol away				Alcohol at home				Tobacco			
	Private		Bi-monthly		Private		Bi-monthly		Private		Bi-monthly	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Stretch	-0.0465	-0.0384	-0.702	-0.663	-0.0749	-0.0720	-0.138	-0.127	-0.0133	-0.00761	0.0506	0.0415
	(0.0547)	(0.0555)	(0.475)	(0.477)	(0.0566)	(0.0568)	(0.373)	(0.360)	(0.0404)	(0.0406)	(0.0994)	(0.0999)
Day of Stretch	-0.0238	-0.0220	-0.549	-0.538	-0.0848	-0.0842	-0.543	-0.539	0.0227	0.0239	-0.0455	-0.0480
	(0.0544)	(0.0543)	(0.360)	(0.362)	(0.0795)	(0.0793)	(0.337)	(0.335)	(0.0637)	(0.0637)	(0.142)	(0.142)
Last4Days	-0.0221	0.0191	-0.153	0.0740	-0.0605*	-0.0456	-0.0295	0.0361	-0.0407	-0.0116	-0.0287	-0.0822
	(0.0239)	(0.0373)	(0.161)	(0.294)	(0.0332)	(0.0482)	(0.141)	(0.227)	(0.0251)	(0.0356)	(0.0712)	(0.106)
Days from prev		-0.00553		-0.0304		-0.00201		-0.00879		-0.00391		0.00717
		(0.00390)		(0.0356)		(0.00477)		(0.0253)		(0.00319)		(0.00886)
Observations	390,939	390,939	33,207	33,207	390,939	390,939	33,207	33,207	390,939	390,939	33,207	33,207
R-squared	0.128	0.128	0.091	0.091	0.143	0.143	0.104	0.104	0.267	0.267	0.224	0.224
Mean	.582	.582	.874	.874	1.094	1.094	1.34	1.34	1.069	1.069	.722	.722
Days from	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are expenditures (US$) for different categories: *alcohol away from home, alcohol at home, tobacco*. We consider households where at least one member works in the private sector (*Private*) and households where at least one member of the couple is paid bi-monthly (*Bi-Monthly*). Standard errors are robust.

Table D3 Distress and Expenditures - Others, Paid Bi-monthly

	Total		Durables		Repair		Non-Deferrables		Rent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stretch	-60.30*	-49.12	1.390	2.187	-0.977	-0.518	-27.18**	-19.58*	2.420	3.638
	(35.55)	(35.66)	(7.566)	(8.679)	(2.559)	(2.455)	(11.21)	(11.24)	(2.694)	(2.716)
Day of Stretch	43.49	46.56*	-10.62	-10.40	-1.486	-1.360	47.74***	49.82***	2.419	2.753
	(27.63)	(27.49)	(17.32)	(17.07)	(2.660)	(2.653)	(16.01)	(16.01)	(4.076)	(4.064)
Last4Days	-37.69***	27.64	-7.282	-2.622	-1.143	1.536	-27.61***	16.75**	-2.330	4.786**
	(13.88)	(21.18)	(10.41)	(17.23)	(0.812)	(1.272)	(5.948)	(8.197)	(1.602)	(2.311)
Days from prev		-8.758***		-0.625		-0.359**		-5.946***		-0.954***
		(2.055)		(1.652)		(0.177)		(0.829)		(0.214)
Observations	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207	33,207
R-squared	0.114	0.115	0.112	0.112	0.112	0.112	0.095	0.097	0.099	0.100
Mean	212.932	212.932	13.578	13.578	3.532	3.532	77.222	77.222	7.166	7.166
Days from	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are different categories of expenditures: *total, durables, repair, non-deferrables, rent.* We consider households where at least one member of the couple is paid bi-monthly. Standard errors are robust.

Table D4 Distress and Expenditures - Private

	Food at home		Perishables		Food away		Leisure		Alcohol	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stretch	-0.634**	-0.610**	-0.105*	-0.103*	-0.237	-0.229	-0.370	-0.380	-0.121	-0.110
	(0.248)	(0.251)	(0.0578)	(0.0584)	(0.145)	(0.147)	(0.232)	(0.235)	(0.0788)	(0.0794)
Day of Stretch	0.0948	0.100	0.0174	0.0179	0.214	0.216	0.308	0.305	-0.109	-0.106
	(0.350)	(0.350)	(0.0815)	(0.0815)	(0.218)	(0.218)	(0.195)	(0.195)	(0.0975)	(0.0974)
Last4Days	-0.576***	-0.454**	-0.109***	-0.0977**	-0.182**	-0.139	-0.180*	-0.229	-0.0826**	-0.0264
	(0.147)	(0.206)	(0.0345)	(0.0479)	(0.0861)	(0.121)	(0.102)	(0.149)	(0.0411)	(0.0609)
Days from prev		-0.0164		-0.00153		-0.00586		0.00664		-0.00754
		(0.0192)		(0.00447)		(0.0105)		(0.0139)		(0.00617)
Observations	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939
R-squared	0.215	0.215	0.187	0.187	0.284	0.284	0.110	0.110	0.153	0.153
Mean	16.412	16.412	3.421	3.421	10.335	10.335	1.709	1.709	1.676	1.676
Days from	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are expenditures (US$) for different categories: *food at home, perishables, food away, leisure, and (total) alcohol.* We consider households where at least one member of the couple works in the private sector. Standard errors are robust.

Table D5 Distress and Expenditures - Others, Private

	Total		Durables		Repair		Non-Deferrables		Rent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stretch	-13.10***	-6.586	-1.070	-0.458	0.651	0.728	-14.11***	-9.242***	-1.801**	-0.691
	(4.705)	(4.751)	(2.752)	(2.807)	(0.732)	(0.742)	(2.623)	(2.619)	(0.708)	(0.704)
Day of Stretch	13.80*	15.25**	-6.100	-5.964	-1.593*	-1.576*	17.94***	19.02***	1.906*	2.152**
	(7.316)	(7.314)	(4.692)	(4.680)	(0.862)	(0.860)	(3.937)	(3.940)	(0.999)	(1.000)
Last4Days	-16.88***	16.39***	1.427	4.549	0.139	0.530	-12.44***	12.39***	-2.042***	3.625***
	(3.279)	(4.363)	(2.090)	(3.071)	(0.517)	(0.681)	(1.511)	(2.008)	(0.367)	(0.509)
Days from prev		-4.466***		-0.419		-0.0525		-3.334***		-0.761***
		(0.399)		(0.266)		(0.0537)		(0.202)		(0.0533)
Observations	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939	390,939
R-squared	0.140	0.141	0.110	0.110	0.114	0.114	0.132	0.133	0.121	0.122
Mean	177.153	177.153	8.197	8.197	3.585	3.585	64.822	64.822	7.085	7.085
Days from	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Dependent variables are different categories of expenditures: *total, durables, repair, non-deferrables, rent*. We consider households where at least one member of the couple works in the private sector. Standard errors are robust.

Appendix E ATUS

Table E1 Samples from ATUS

	HH with at least one working in private			**HH with at least one paid bi-monthly**		
	Mean	Median	SD	Mean	Median	SD
Age	42.57	42.00	10.65	42.68	42.00	10.48
White	0.86	1.00	0.34	0.84	1.00	0.36
Black	0.00	0.00	0.04	0.00	0.00	0.05
Degree	0.43	0.00	0.49	0.51	1.00	0.50
Households' size'	3.53	4.00	1.26	3.45	3.00	1.20
Poor	0.08	0.00	0.27	0.05	0.00	0.22
Observations	56,654			1,416		

Table E2 ATUS Codes

Kids Care	030100	CARING FOR AND HELPING HOUSEHOLD CHILDREN	physical care (e.g., getting child ready for bed), reading to/with children, playing (not sports), playing sports, talking with/listening to, (e.g. fussing at/scolding household child) looking after (e.g., supervising household child) etc
	030200	ACTIVITIES RELATED TO HOUSEHOLD CHILDREN'S EDUCATION	Homework (e.g., helping with homework), meetings and school conferences, home schooling etc
	030300	ACTIVITIES RELATED TO HOUSEHOLD CHILDREN'S HEALTH	Providing/obtaining medical care (e.g., giving child medicine)
Adults Care	030400	CARING FOR HOUSEHOLD ADULTS	Physical care (e.g., feeding adult), looking after (e.g., monitoring adult), providing/obtaining medical care etc
	030500	HELPING HOUSEHOLD ADULTS	helping (e.g., running errands for adult), organisation and planning (e.g., planning events for adult), picking up/dropping off etc
Household Activities	020100	HOUSEWORK	Interior cleaning (e.g., sweeping), laundry, sewing, storing interior items (e.g., putting away the groceries) etc
	020200	FOOD AND DRINK PREPARATION,PRESENTATION, AND CLEAN-UP	Food and drink preparation (e.g., making tea), food presentation, kitchen and food clean-up (e.g., Loading the dishwasher) etc
	020300	INTERIOR MAINTENANCE, REPAIR, AND DECORATION	Interior arrangement/decoration/repair (e..g, Installing carpet), building and repairing furniture, heating and cooling etc
	020400	EXTERIOR MAINTENANCE, REPAIR, AND DECORATION	exterior cleaning (e..g, Sweeping deck), exterior repair/improvement/decoration (e..g, Painting deck), etc
	020500	LAWN, GARDEN, AND HOUSEPLANTS	lawn/garden/houseplants care (e..g, Blowing leaves), ponds/pools/ho tubs (e.g., Draining pool)
	020600	ANIMALS AND PETS	Care for animals/pets (not veterinary care), walking exercising/playing with pets etc
	020700	VEHICLES	vehicle repair/maintenance, etc
	020800	APPLIANCES, TOOLS, AND TOYS	appliances, tools, toys set-up, repair, maintenance (by self, e.g., Setting clocks), etc
	020900	HOUSEHOLD MANAGEMENT	Financial management (e.g., giving money to household adult), household and personal organisation and planning (e.g., filling out paperwork), household and personal mail/e-mail/messages (e.g., checking e-mail), home security (e.g., locking up home) etc
	029900	HOUSEHOLD ACTIVITIES, N.E.C.	
Sleeping	010101	SLEEPING	Sleeeping (e.g., dreaming, dozing off)
Personal Care	010200	GROOMING	Washing/dressing/grooming oneself (e.g., combing hair) etc
	010300	HEALTH-RELATED SELF CARE	Health-related self care (e.g., giving oneself a shot), etc
	010400	PERSONAL ACTIVITIES	Personal/private activities (e.g., cuddling partner in bed) etc
	010500	PERSONAL CARE EMERGENCIES	Personal care emergency (e.g., losing consciousness), etc
Relaxing	120300	RELAXING AND LEISURE	Relaxing/thinking (e.g., sitting around), tobacco and drug use (e.g., Rolling a cigarette), television/movies/listening to the radio, playing games etc
Researching Purchases	070200	RESEARCHING PURCHASES	Comparison shopping (e.g., comparing prices at different stores, reading product reviews) etc
Spending	070104	SHOPPING, EXCEPT GROCERIES, FOOD, AND GAS	E.g., buying clothes, shopping at yards sales
	080500	PERSONAL CARE SERVICES	Using personal care services (e.g., having a pedicure), waiting associated with personal care services (e.g., waiting for the barber) etc

Table E3 Distress and Time Use by activity, location, and companionship - Others, Bi-monthly

Panel A								
	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-5.251	-5.209	-4.413	-4.377	-0.0861	-0.0709	7.273	7.508
	(8.975)	(8.979)	(8.532)	(8.528)	(0.685)	(0.685)	(10.18)	(10.18)
Day of stretch	-4.571	-3.850	6.668	2.578	-1.041	-0.778	-28.71	-24.65
	(18.38)	(18.60)	(18.05)	(18.29)	(1.403)	(1.418)	(20.86)	(21.09)
Last4Days	7.823	9.804	-13.15	-22.93*	0.206	0.929	7.342	18.50
	(10.27)	(12.82)	(10.22)	(12.51)	(0.784)	(0.977)	(11.65)	(14.53)
Days from prev		-0.285		1.438		-0.104		-1.606
		(1.103)		(1.063)		(0.0841)		(1.251)
Observations	1,416	1,416	950	950	1,416	1,416	1,416	1,416
R-squared	0.124	0.124	0.138	0.140	0.021	0.022	0.152	0.153
Mean	115.342	115.342	74.517	74.517	1.431	1.431	172.703	172.703
Effect wrt mean	4.55	4.52	5.92	5.87	6.01	4.96	4.21	4.351
Days from	No	Yes	No	Yes	No	Yes	No	Yes
Panel B								
	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	2.536	2.406	5.955	6.203	-4.914	-4.727	-29.44*	-29.39*
	(17.48)	(17.49)	(14.05)	(14.06)	(12.27)	(12.28)	(17.22)	(17.22)
Day of stretch	36.63	34.39	-39.11	-34.84	1.078	4.324	72.22**	65.98*
	(35.81)	(36.23)	(28.79)	(29.12)	(25.14)	(25.43)	(36.43)	(36.94)
Last4Days	0.661	-5.491	23.22	34.96*	13.90	22.82	-13.11	-28.02
	(20.01)	(24.96)	(16.08)	(20.06)	(14.05)	(17.52)	(20.62)	(25.26)
Days from prev		0.886		-1.691		-1.284		2.193
		(2.148)		(1.726)		(1.508)		(2.146)
Observations	1,416	1,416	1,416	1,416	1,416	1,416	950	950
R-squared	0.204	0.204	0.135	0.135	0.171	0.171	0.237	0.238
Mean	476.019	476.019	217.305	217.305	142.121	142.121	204.781	204.781
Effect wrt mean	.53	.51	2.74	2.85	3.46	3.33	14.38	14.35
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not home, alone, with the spouse only, with the spouse and the kids.* The sample includes both female and male respondents in couples where at least one member is paid bi-monthly.

Table E4 Distress and Time Use by activity, location and companionship - Bi-monthly, Females

Panel A

	Spending		Purchases Research		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	0.838	0.905	0.532	0.534	12.45	12.34	13.72	13.48
	(5.695)	(5.698)	(0.736)	(0.737)	(12.38)	(12.39)	(11.65)	(11.64)
Day of stretch	7.561	6.203	4.180***	4.135***	-40.37	-38.04	-43.85*	-38.92
	(11.98)	(12.13)	(1.548)	(1.568)	(26.05)	(26.38)	(24.50)	(24.79)
Last4Days	3.284	-0.151	0.0543	-0.0592	-0.393	5.499	2.007	14.47
	(6.499)	(8.058)	(0.840)	(1.042)	(14.13)	(17.52)	(13.29)	(16.46)
Days from prev		0.495		0.0163		-0.848		-1.795
		(0.685)		(0.0886)		(1.490)		(1.400)
Observations	694	694	694	694	694	694	694	694
R-squared	0.145	0.146	0.089	0.089	0.132	0.133	0.153	0.155
Mean	23.725	23.725	.303	.303	557.455	557.455	502.494	502.494
Effect wrt mean	3.53	3.81	175.58	176.24	2.23	2.21	2.73	2.68
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-0.565	-0.525	4.688	4.328	-4.520	-4.223	13.27	13.61
	(23.75)	(23.77)	(24.11)	(24.12)	(30.50)	(30.52)	(19.88)	(19.86)
Day of stretch	-24.70	-25.50	11.62	18.91	-3.314	-11.89	-53.98	-63.64
	(49.97)	(50.62)	(50.72)	(51.35)	(63.49)	(64.52)	(41.38)	(41.99)
Last4Days	16.71	14.69	23.31	41.75	1.704	-18.09	-8.616	-30.91
	(27.11)	(33.62)	(27.51)	(34.10)	(34.54)	(43.24)	(22.51)	(28.14)
Days from prev		0.291		-2.656		2.878		3.242
		(2.860)		(2.901)		(3.779)		(2.459)
Observations	694	694	694	694	466	466	466	466
R-squared	0.164	0.164	0.252	0.253	0.250	0.251	0.079	0.083
Mean	421.046	421.046	311.378	311.378	370.088	370.088	135.97	135.97
Effect wrt mean	.13	.12	1.51	1.39	1.22	1.14	9.76	10.01
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, purchases research, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at home, with the spouse, with the kids, with the kids only.* The sample includes only female respondents in couples where at least one member is paid bi-monthly.

Table E5 Distress and Time Use by activity, location, and companionship - Others, Bi-monthly, Females

Panel A

	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	4.885	4.769	-8.705	-8.615	1.043	1.022	22.00	21.92
	(13.13)	(13.13)	(12.98)	(12.99)	(1.020)	(1.020)	(14.63)	(14.65)
Day of stretch	-44.75	-42.41	18.51	15.91	-2.101	-1.674	-27.87	-26.27
	(27.61)	(27.97)	(27.03)	(27.47)	(2.146)	(2.171)	(30.79)	(31.19)
Last4Days	23.23	29.15	-14.17	-20.17	0.666	1.745	14.25	18.29
	(14.98)	(18.57)	(14.70)	(18.41)	(1.164)	(1.442)	(16.70)	(20.71)
Days from prev		-0.852		0.872		-0.155		-0.583
		(1.580)		(1.609)		(0.123)		(1.762)
Observations	694	694	466	466	694	694	694	694
R-squared	0.143	0.143	0.225	0.225	0.041	0.044	0.165	0.166
Mean	129.552	129.552	85.91	85.91	1.537	1.537	154.807	154.807
Effect wrt mean	3.77	3.68	10.13	10.03	67.86	66.49	14.21	14.16
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-17.40	-17.23	11.54	11.39	23.74	23.34	7.145	7.176
	(25.44)	(25.46)	(18.95)	(18.96)	(18.40)	(18.39)	(25.40)	(25.44)
Day of stretch	73.37	69.97	-8.401	-5.192	-21.23	-13.18	36.72	35.83
	(53.53)	(54.22)	(39.87)	(40.38)	(38.71)	(39.16)	(52.89)	(53.77)
Last4Days	-17.92	-26.54	23.92	32.04	16.97	37.34	9.862	7.798
	(29.04)	(36.01)	(21.63)	(26.82)	(21.00)	(26.01)	(28.77)	(36.04)
Days from prev		1.241		-1.169		-2.933		0.300
		(3.063)		(2.281)		(2.212)		(3.150)
Observations	694	694	694	694	694	694	466	466
R-squared	0.202	0.203	0.126	0.126	0.198	0.200	0.279	0.279
Mean	461.862	461.862	202.095	202.095	141.707	141.707	199.275	199.275
Effect wrt mean	3.77	3.73	5.71	5.63	16.75	16.47	3.59	3.6
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not-home, alone, with the spouse only, with the spouse and the kids.* The sample includes only female respondents in couples where at least one member is paid bi-monthly.

Table E6 Distress and Time Use by activity, location and companionship - Bi-monthly, Males

Panel A

	Spending		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)
Stretch	0.842	1.045	-0.804	-0.691	7.796	7.982
	(4.842)	(4.848)	(11.62)	(11.64)	(10.96)	(10.98)
Day of stretch	8.214	9.532	2.221	2.962	-1.053	0.155
	(9.722)	(9.833)	(23.33)	(23.61)	(22.01)	(22.27)
Last4Days	3.061	6.865	-14.16	-12.02	-4.627	-1.140
	(5.555)	(6.977)	(13.33)	(16.75)	(12.57)	(15.80)
Days from prev		-0.546		-0.307		-0.501
		(0.606)		(1.456)		(1.373)
Observations	722	722	722	722	722	722
R-squared	0.091	0.092	0.186	0.186	0.221	0.221
Mean	16.043	16.043	541.461	541.461	501.377	501.377
Effect wrt mean	5.25	6.51	.15	.13	1.55	1.59
Days from	No	Yes	No	Yes	No	Yes

Panel B

	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-30.38	-31.10	-50.34**	-51.69**	-43.11	-43.17	23.71	23.75
	(22.69)	(22.72)	(23.37)	(23.38)	(27.58)	(27.60)	(17.16)	(17.17)
Day of stretch	-13.69	-18.41	131.3***	122.6***	15.66	9.725	-66.17*	-61.98
	(45.55)	(46.08)	(46.91)	(47.42)	(60.28)	(61.01)	(37.50)	(37.95)
Last4Days	-5.260	-18.90	-30.97	-56.33*	-15.30	-30.59	18.62	29.40
	(26.02)	(32.70)	(26.80)	(33.65)	(34.84)	(42.05)	(21.67)	(26.16)
Days from prev		1.960		3.643		2.239		-1.579
		(2.842)		(2.925)		(3.441)		(2.141)
Observations	722	722	722	722	484	484	484	484
R-squared	0.182	0.182	0.259	0.260	0.289	0.290	0.108	0.110
Mean	408.271	408.271	318.819	318.819	312.996	312.996	89.986	89.986
Effect wrt mean	7.44	7.62	15.79	16.21	13.77	13.79	26.35	26.4
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at-home, with the spouse, with the kids, with the kids only.* The sample includes only male respondents in couples where at least one member is paid bi-monthly. *Purchases research* could not be estimated.

Table E7 Distress and Time Use by activity, location, and companionship - Others, Bi-monthly, Males

Panel A

	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-17.44	-17.47	4.617	4.558	-1.098	-1.080	-6.507	-5.707
	(12.57)	(12.59)	(11.62)	(11.61)	(0.961)	(0.963)	(14.64)	(14.65)
Day of stretch	26.45	26.26	-20.33	-25.81	-0.200	-0.0875	-25.79	-20.59
	(25.24)	(25.54)	(25.40)	(25.66)	(1.930)	(1.953)	(29.40)	(29.72)
Last4Days	-7.889	-8.429	-7.781	-21.89	-0.234	0.0899	4.922	19.94
	(14.42)	(18.12)	(14.68)	(17.69)	(1.103)	(1.386)	(16.80)	(21.09)
Days from prev		0.0776		2.066		-0.0466		-2.158
		(1.575)		(1.448)		(0.120)		(1.833)
Observations	722	722	484	484	722	722	722	722
R-squared	0.155	0.155	0.142	0.146	0.039	0.040	0.165	0.166
Mean	101.683	101.683	63.548	63.548	1.328	1.328	189.906	189.906
Effect relative to the mean	17.15	17.18	7.27	7.17	82.68	81.33	3.43	3.01
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	26.40	26.57	-2.419	-1.709	-25.45	-25.59	-62.79**	-62.89**
	(24.72)	(24.76)	(21.06)	(21.09)	(16.77)	(16.80)	(24.90)	(24.89)
Day of stretch	19.15	20.23	-64.02	-59.40	20.43	19.49	88.43	78.86
	(49.63)	(50.22)	(42.28)	(42.77)	(33.68)	(34.08)	(54.43)	(55.03)
Last4Days	11.58	14.69	20.07	33.39	12.56	9.851	-23.63	-48.27
	(28.35)	(35.64)	(24.16)	(30.35)	(19.24)	(24.18)	(31.46)	(37.92)
Days from prev		-0.447		-1.914		0.388		3.607
		(3.097)		(2.638)		(2.102)		(3.104)
Observations	722	722	722	722	722	722	484	484
R-squared	0.252	0.252	0.183	0.184	0.211	0.211	0.249	0.251
Mean	489.627	489.627	231.925	231.925	142.519	142.519	210.083	210.083
Effect wrt mean	5.39	5.43	1.04	.74	17.86	17.96	29.89	29.94
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not-home, alone, with the spouse only, with the spouse and the kids.* The sample includes only male respondents in couples where at least one member is paid bi-monthly.

Table E8 Distress and Time Use by activity, location and companionship - Private

Panel A

	Spending		Cons. Research		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	0.0824	0.0881	-0.0733**	-0.0754**	-2.076	-1.894	-1.221	-1.073
	(0.549)	(0.550)	(0.0309)	(0.0310)	(1.338)	(1.341)	(1.293)	(1.296)
Day of stretch	-1.183	-1.163	0.0984	0.0912	2.588	3.217	1.046	1.560
	(1.104)	(1.111)	(0.0621)	(0.0625)	(2.689)	(2.708)	(2.600)	(2.617)
Last4Days	-0.839	-0.766	-0.0232	-0.0499	-0.0501	2.280	0.846	2.750
	(0.567)	(0.741)	(0.0319)	(0.0417)	(1.382)	(1.806)	(1.336)	(1.745)
Days from prev		-0.0102		0.00374		-0.326**		-0.267*
		(0.0668)		(0.00376)		(0.163)		(0.157)
Observations	56,654	56,654	56,654	56,654	56,654	56,654	56,654	56,654
R-squared	0.050	0.050	0.001	0.001	0.119	0.119	0.123	0.123
Mean	18.86	18.86	.069	.069	549.821	549.821	505.042	505.042
Effect wrt mean	.43	.47	105.8	108.7	.38	.34	.24	.21
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	1.493	1.733	-4.534*	-4.628*	-2.147	-2.086	1.073	1.134
	(2.711)	(2.717)	(2.595)	(2.601)	(3.181)	(3.187)	(2.050)	(2.055)
Day of stretch	1.982	2.810	13.76***	13.43**	2.834	3.060	-3.283	-3.058
	(5.450)	(5.486)	(5.215)	(5.251)	(6.398)	(6.443)	(4.124)	(4.153)
Last4Days	-4.639*	-1.572	-10.04***	-11.25***	-2.045	-1.229	2.801	3.612
	(2.800)	(3.659)	(2.680)	(3.502)	(3.275)	(4.278)	(2.111)	(2.758)
Days from prev		-0.430		0.169		-0.115		-0.114
		(0.330)		(0.316)		(0.387)		(0.249)
Observations	56,654	56,654	56,654	56,654	38,418	38,418	38,418	38,418
R-squared	0.092	0.092	0.215	0.215	0.216	0.216	0.074	0.074
Mean	413.658	413.658	304.967	304.967	331.206	331.206	111.828	111.828
Effect wrt mean	.36	.42	1.49	1.52	.65	.63	.96	1.01
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, purchases research, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at-home, with the spouse, with the kids, with the kids only.* The sample includes both female and male respondents in couples where at least one member works in the private sector.

Table E9 Distress and Time Use by activity, location, and companionship - Others, Private

Panel A

	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-1.549	-1.538	0.723	0.725	-0.0515	-0.0524	2.115	2.316
	(1.471)	(1.474)	(1.343)	(1.346)	(0.183)	(0.184)	(1.674)	(1.678)
Day of stretch	4.114	4.154	1.369	1.378	0.00278	-0.000297	-1.734	-1.040
	(2.957)	(2.977)	(2.701)	(2.720)	(0.368)	(0.370)	(3.364)	(3.387)
Last4Days	-2.669*	-2.521	0.615	0.646	-0.0773	-0.0887	-2.007	0.563
	(1.519)	(1.985)	(1.383)	(1.806)	(0.189)	(0.247)	(1.729)	(2.259)
Days from prev		-0.0208		-0.00443		0.00159		-0.360*
		(0.179)		(0.163)		(0.0223)		(0.204)
Observations	56,654	56,654	38,418	38,418	56,654	56,654	56,654	56,654
R-squared	0.102	0.102	0.106	0.106	0.003	0.003	0.109	0.109
Mean	115.461	115.461	71.287	71.287	1.623	1.623	172.561	172.561
Effect wrt mean	1.34	1.33	1.01	1.02	3.2	3.2	1.23	1.34
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	0.697	0.283	1.859	2.004	-0.718	-0.733	-3.512	-3.466
	(2.884)	(2.890)	(2.297)	(2.303)	(1.917)	(1.921)	(2.745)	(2.751)
Day of stretch	-3.624	-5.054	-4.047	-3.544	6.281	6.226	9.444*	9.616*
	(5.796)	(5.835)	(4.618)	(4.649)	(3.852)	(3.878)	(5.522)	(5.561)
Last4Days	4.291	-1.003	2.146	4.007	-4.282**	-4.486*	-4.313	-3.695
	(2.978)	(3.891)	(2.373)	(3.100)	(1.979)	(2.586)	(2.827)	(3.692)
Days from prev		0.741**		-0.261		0.0286		-0.0868
		(0.351)		(0.279)		(0.233)		(0.334)
Observations	56,654	56,654	56,654	56,654	56,654	56,654	38,418	38,418
R-squared	0.164	0.165	0.095	0.095	0.156	0.156	0.198	0.198
Mean	475.825	475.825	221.732	221.732	136.239	136.239	197.806	197.806
Effect wrt mean	.15	.06	.84	.9	.53	.54	1.78	1.75
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not-home, alone, with the spouse only, with the spouse and the kids.* The sample includes both female and male respondents in couples where at least one member works in the private sector.

Table E10 Distress and Time Use by activity, location and companionship - Private, Females

Panel A

	Spending		Cons. Research		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	1.250	1.316	-0.0562*	-0.0544	-2.708	-2.371	-0.909	-0.629
	(0.884)	(0.887)	(0.0339)	(0.0340)	(1.941)	(1.947)	(1.860)	(1.866)
Day of stretch	-3.942**	-3.758**	-0.00304	0.00198	-2.907	-1.962	-4.462	-3.676
	(1.774)	(1.785)	(0.0680)	(0.0685)	(3.895)	(3.918)	(3.732)	(3.755)
Last4Days	-0.449	0.269	0.0158	0.0353	2.519	6.203**	3.037	6.105**
	(0.914)	(1.194)	(0.0351)	(0.0458)	(2.007)	(2.622)	(1.923)	(2.512)
Days from prev		-0.100		-0.00273		-0.514**		-0.428*
		(0.107)		(0.00411)		(0.235)		(0.225)
Observations	26,504	26,504	26,504	26,504	26,504	26,504	26,504	26,504
R-squared	0.050	0.050	0.002	0.002	0.108	0.108	0.117	0.117
Mean	23.185	23.185	.059	.059	564.271	564.271	511.045	511.045
Effect wrt mean	5.39	5.68	94.92	91.53	.48	.42	.18	.12
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	2.644	2.347	0.164	0.201	1.979	1.729	4.266	4.098
	(3.933)	(3.946)	(3.724)	(3.736)	(4.714)	(4.731)	(3.374)	(3.387)
Day of stretch	8.355	7.520	8.588	8.695	6.594	5.956	-1.556	-1.983
	(7.892)	(7.941)	(7.472)	(7.518)	(9.507)	(9.564)	(6.806)	(6.846)
Last4Days	-4.704	-7.958	-8.275**	-7.861	0.375	-2.134	3.484	1.803
	(4.067)	(5.314)	(3.851)	(5.031)	(4.859)	(6.354)	(3.478)	(4.548)
Days from prev		0.454		-0.0578		0.350		0.234
		(0.477)		(0.451)		(0.570)		(0.408)
Observations	26,504	26,504	26,504	26,504	17,552	17,552	17,552	17,552
R-squared	0.065	0.065	0.209	0.209	0.191	0.191	0.047	0.047
Mean	427.969	427.969	293.444	293.444	366.308	366.308	148.445	148.445
Effect wrt mean	.62	.55	.06	.07	.54	.47	2.87	2.76
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, purchases research, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at-home, with the spouse, with the kids, with the kids only.* The sample includes only female respondents in couples where at least one member works in the private sector.

Table E11 Distress and Time Use by activity, location, and companionship - Others, Private, Females

Panel A								
	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	0.539	0.409	3.050	2.929	0.124	0.131	3.072	3.206
	(2.205)	(2.212)	(2.116)	(2.124)	(0.263)	(0.264)	(2.235)	(2.242)
Day of stretch	4.874	4.508	4.842	4.534	-0.305	-0.284	-5.512	-5.135
	(4.424)	(4.452)	(4.267)	(4.293)	(0.528)	(0.531)	(4.484)	(4.512)
Last4Days	-3.043	-4.471	0.407	-0.808	0.179	0.262	-1.409	0.0618
	(2.280)	(2.979)	(2.181)	(2.852)	(0.272)	(0.355)	(2.311)	(3.019)
Days from prev		0.199		0.169		-0.0115		-0.205
		(0.267)		(0.256)		(0.0319)		(0.271)
Observations	26,504	26,504	17,552	17,552	26,504	26,504	26,504	26,504
R-squared	0.077	0.077	0.123	0.123	0.005	0.005	0.079	0.079
Mean	140.195	140.195	87.458	87.458	1.713	1.713	152.96	152.96
Effect wrt mean	.38	.29	3.49	3.35	7.24	7.65	2.01	2.1
Days from	No	Yes	No	Yes	No	Yes	No	Yes
Panel B								
	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-0.320	-0.297	1.341	1.475	2.863	3.111	-2.474	-2.454
	(4.120)	(4.133)	(3.102)	(3.112)	(2.736)	(2.744)	(3.893)	(3.908)
Day of stretch	-3.816	-3.752	2.994	3.369	0.201	0.898	13.78*	13.83*
	(8.267)	(8.318)	(6.224)	(6.263)	(5.489)	(5.523)	(7.853)	(7.900)
Last4Days	2.146	2.398	-0.295	1.166	-2.311	0.407	-2.258	-2.060
	(4.261)	(5.566)	(3.208)	(4.191)	(2.829)	(3.696)	(4.013)	(5.248)
Days from prev		-0.0352		-0.204		-0.379		-0.0276
		(0.499)		(0.376)		(0.332)		(0.471)
Observations	26,504	26,504	26,504	26,504	26,504	26,504	17,552	17,552
R-squared	0.124	0.124	0.101	0.101	0.161	0.161	0.196	0.196
Mean	447.358	447.358	212.668	212.668	134.272	134.272	184.841	184.841
Effect wrt mean	.07	.07	.63	.69	2.13	2.32	1.34	1.33
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not-home, alone, with the spouse only, with the spouse and the kids.* The sample includes only female respondents in couples where at least one member works in the private sector.

Table E12 Distress and Time Use by activity, location and companionship - Private, Males

Panel A

	Spending		Cons. Research		Personal Care		Sleeping	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-0.960	-0.993	-0.0891*	-0.0934*	-1.487	-1.405	-1.558	-1.493
	(0.679)	(0.680)	(0.0498)	(0.0499)	(1.845)	(1.848)	(1.797)	(1.800)
Day of stretch	1.198	1.057	0.186*	0.168*	7.325**	7.671**	5.987*	6.262*
	(1.366)	(1.376)	(0.100)	(0.101)	(3.714)	(3.742)	(3.617)	(3.644)
Last4Days	-1.235*	-1.736*	-0.0564	-0.122*	-2.368	-1.141	-1.122	-0.148
	(0.700)	(0.915)	(0.0514)	(0.0671)	(1.904)	(2.488)	(1.854)	(2.423)
Days from prev		0.0704		0.00920		-0.172		-0.137
		(0.0828)		(0.00607)		(0.225)		(0.219)
Observations	30,150	30,150	30,150	30,150	30,150	30,150	30,150	30,150
R-squared	0.042	0.043	0.001	0.001	0.112	0.112	0.127	0.127
Mean	15.059	15.059	.079	.079	537.116	537.116	499.764	499.764
Effect wrt mean	6.37	6.59	112.66	117.72	.28	.26	.31	.3
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Home		Spouse		Kids		Kids Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-0.141	0.433	-8.639**	-8.799**	-6.820	-6.596	-2.386	-2.207
	(3.725)	(3.731)	(3.612)	(3.619)	(4.285)	(4.289)	(2.459)	(2.461)
Day of stretch	-2.525	-0.0872	17.64**	16.96**	0.388	1.642	-3.914	-2.913
	(7.497)	(7.552)	(7.271)	(7.324)	(8.595)	(8.665)	(4.932)	(4.972)
Last4Days	-4.860	3.793	-11.57***	-13.98***	-4.633	-0.409	1.756	5.128
	(3.843)	(5.022)	(3.727)	(4.871)	(4.408)	(5.752)	(2.530)	(3.301)
Days from prev		-1.216***		0.338		-0.598		-0.477
		(0.454)		(0.441)		(0.523)		(0.300)
Observations	30,150	30,150	30,150	30,150	20,866	20,866	20,866	20,866
R-squared	0.120	0.120	0.219	0.219	0.226	0.226	0.028	0.028
Mean	401.079	401.079	315.097	315.097	301.679	301.679	81.027	81.027
Effect wrt mean	.04	.11	2.74	2.79	2.26	2.19	2.94	2.72
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *non-essential spending, purchases research, total personal care, sleeping.* Panel B: Dependent variables are minutes spent *at-home, with the spouse, with the kids, with the kids only.* The sample includes only male respondents in couples where at least one member works in the private sector.

Table E13 Distress and Time Use by activity, location, and companionship - Others, Private, Males

Panel A

	Household act.		Kids care		Adults Care		Relax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	-3.212	-3.117	-1.849	-1.771	-0.190	-0.195	0.845	1.090
	(1.965)	(1.968)	(1.699)	(1.701)	(0.255)	(0.255)	(2.447)	(2.451)
Day of stretch	3.650	4.051	-1.063	-0.630	0.291	0.268	1.957	3.000
	(3.955)	(3.984)	(3.409)	(3.436)	(0.513)	(0.516)	(4.924)	(4.960)
Last4Days	-2.348	-0.925	0.493	1.953	-0.307	-0.389	-2.640	1.061
	(2.027)	(2.649)	(1.748)	(2.281)	(0.263)	(0.343)	(2.524)	(3.299)
Days from prev		-0.200		-0.207		0.0114		-0.520*
		(0.240)		(0.207)		(0.0311)		(0.298)
Observations	30,150	30,150	20,866	20,866	30,150	30,150	30,150	30,150
R-squared	0.081	0.081	0.068	0.068	0.005	0.005	0.114	0.115
Mean	93.718	93.718	57.684	57.684	1.544	1.544	189.792	189.792
Effect wrt mean	3.43	3.33	3.21	3.07	12.31	12.63	.45	.57
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Panel B

	Not-Home		Alone		Spouse Only		Spouse&Kids	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Stretch	2.193	1.510	2.528	2.679	-3.735	-3.911	-4.564	-4.503
	(4.014)	(4.020)	(3.341)	(3.346)	(2.682)	(2.687)	(3.852)	(3.856)
Day of stretch	-4.529	-7.427	-9.696	-9.059	11.43**	10.68**	5.466	5.810
	(8.079)	(8.137)	(6.723)	(6.773)	(5.399)	(5.438)	(7.726)	(7.789)
Last4Days	6.527	-3.758	4.215	6.479	-6.018**	-8.672**	-5.956	-4.797
	(4.141)	(5.411)	(3.446)	(4.504)	(2.767)	(3.616)	(3.962)	(5.171)
Days from prev		1.445***		-0.318		0.373		-0.164
		(0.490)		(0.407)		(0.327)		(0.470)
Observations	30,150	30,150	30,150	30,150	30,150	30,150	20,866	20,866
R-squared	0.189	0.190	0.093	0.093	0.153	0.153	0.197	0.197
Mean	500.85	500.85	229.701	229.701	137.969	137.969	208.711	208.711
Effect wrt mean	.44	.3	1.1	1.17	2.71	2.83	2.19	2.16
Days from	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parenthesis, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Panel A: Dependent variables are minutes spent on the following activities: *household activities, kids care, adults care, relax.* Panel B: Dependent variables are minutes spent *not-home, alone, with the spouse only, with the spouse and the kids.* The sample includes only male respondents in couples where at least one member works in the private sector.