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Effects of Lottery Wins on Household Labor Supply

Ignacio Belloc[1,2] | José Alberto Molina[1,2,3] | Jorge Velilla[1,2]

[1]Department of Economic Analysis, IEDIS and University of Zaragoza, Zaragoza, Spain | [2]GLO, Essen, Germany | [3]IZA, Bonn, Germany

Correspondence: Ignacio Belloc (ibelloc@unizar.es)

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ABSTRACT

This paper analyzes the impact of lottery wins on household labor supply in the United Kingdom, using data from the British Household Panel Survey. We show that lottery wins do not have significant effects on hours of work of males, while female hours of work decrease in response to lottery wins. When we control for different lottery prize amounts, we find that large lottery wins reduce female annual hours of work by 120 h one and 2 years after the prize. The estimates are heterogeneous across age groups, levels of educational attainment, and household composition. These results suggest that shocks in unearned income may take some time to appear but have a lasting impact.

JEL Classification: D13, D31, J22

1 | Introduction

This paper addresses the impact of winning the lottery on household labor supply. We consider that winning the lottery is an exogenous shock to the household economic environment and, as such, it may have an impact on household observed behaviors driven by various forces, such as intrahousehold effects (Theloudis et al. 2025), or standard income and wealth effects (Heathcote et al. 2014). As a consequence, households may respond to this shock by modifying their hours of work and, for large shocks and older individuals close to retirement, by quitting the labor force.

Some authors have studied the impact of various shocks to the household economic environment on observable behaviors, including gambling, gifts, lottery wins, and inheritances. Such positive shocks can generally be considered as unexpected income changes, and thus are assumed to be exogenous, after certain reasonable assumptions. In addition, they generally represent an improvement in the household's financial situation that may affect recipient decisions regarding earnings, labor supply, mortgages, consumption, or retirement, among other outcomes.

Within this context, it is important to study how such wealth shocks affect household labor supply, to test the potential intrahousehold effects of large monetary cash transfers that target specific household members on work hours, such as pensions, tax reforms, or basic income programs, as they represent unexpected income changes that can have different effects compared to other income transfers, and generally have an intertemporal aspect, especially for large income shocks such as lottery wins. Nevertheless, many studies have failed to precisely document how individuals respond to exogenous changes in wealth and unearned income, as it is difficult to find a convincing exogenous unanticipated source of variation in these sources. Hence, in this paper, we investigate the extent to which a positive shock in unearned income, through a lottery win, influences household labor supply.

We use data from the British Household Panel Survey (BHPS) for the period 1997–2008, when information about lottery wins

was gathered, to study the impact of lottery wins on labor supply of dual-earner couples in the UK.[1] We consider a lottery win as a major life event and adopt a collective household perspective (Chiappori 1988, 1992), which has recently become the predominant theoretical framework in household economics for theoretically and empirically studying household behaviors. Against the traditional unitary perspective, this approach enables us to analyze intrahousehold dynamics and resource allocation (Choukhmane et al. 2025). The data for this paper cover a consecutive 12-year time window, which allows us to explore any persistence behind the estimates. In doing so, we follow Theloudis et al. (2025), who found that shocks to the household economic environment, mainly through wage shocks, have a lasting impact on labor supply, and we analyze how current and past lottery wins impact current spouses' hours of work. Household decisions tend to respond gradually to wealth shocks, and simply estimating contemporaneous relationships may not capture the full effect of a positive shock in unearned income.

We exploit the panel structure of the BHPS and estimate fixed-effect models to control for unobserved and time-constant heterogeneity. The UK lottery is one of the largest in the world and several authors have acknowledged that many people play lotteries (Wardle 2007; Apouey and Clark 2015; Cheng et al. 2018; Flèche et al. 2021; Costa-Font and Györi 2023; Costa-Font and Powdthavee 2023). In addition, the panel dimension of the survey allows us to mitigate some potential concerns regarding unobserved permanent individual heterogeneity in preferences, by using the fixed-effects estimator. Consequently, we exploit within-person variations over time and consider lottery wins to be a random source of household economic resources in our identification strategy.

Our results suggest that winning the lottery is unrelated to husbands' annual hours of work. However, current female hours of work are affected by having won the lottery both in the present and in the past. If the husband wins the lottery at the current date, the wife reduces her current hours of work by about 26 h per year. On the other hand, if he won the lottery 1 year ago, the current labor supply of the wife is found to decrease by about 28 h per year. These results suggest that lottery wins flow from husbands to wives, reflecting a joint household decision. Furthermore, we use information on the amount of the lottery win and find that it is important. However, we also report gender-specific effects, concentrated in the female subsample: when the husband receives a small lottery win (worth between £0–500), the wife reduces her working time by 31 h in the same year and by 30 h 1 year after the win. Conversely, if the wife receives a significant lottery win (worth more than £1000), she reduces her working hours by 122 and 120 h 1 and 2 years after the win, suggesting that they adjust their behavior with some lag, possibly due to rigid labor market behavior in the UK.

Our contribution to the literature is twofold. First, we contribute to the literature on wealth and earnings shocks by studying the impact of lottery wins on household labor supply behaviors (D. M. Blau and Goodstein 2016; Cesarini et al. 2017; Niizeki and Hori 2019; Golosov et al. 2024; Theloudis et al. 2025), focusing on work hours rather than on labor force participation (D. M. Blau and Goodstein 2016; Niizeki and Hori 2019), labor earnings (Cesarini et al. 2017; Golosov et al. 2024), or other household behaviors. Determining whether exogenous income shocks affect labor supply is an empirically demanding identification problem, due to the lack of exogenous changes in income (Imbens et al. 2001). Within this context, to the best of our knowledge, this is the first study to address whether household labor supply is impacted by lottery wins, and the study most closely related to ours is that of Cesarini et al. (2017), who study individual and household labor earnings responses to lottery prizes in Sweden.

Second, we study the impact of winning the lottery, both in the present and in the past, on current household labor supply. Prior studies focusing on wealth shocks and their relationships to household labor supply have primarily focused on static or contemporaneous relationships by exploiting information on inheritances (D. M. Blau and Goodstein 2016; Niizeki and Hori 2019). Nevertheless, lottery prizes and inheritances are income sources with significant differences across the recipients, since inheritances are typically related to the death of a parent and received by people at advanced stages of their life-cycle, while lottery wins are received by a subset of fortunate players, regardless of their age. Thus, considerable uncertainty remains about the persistence of any wealth effects on household labor supply, and we contribute to these studies by providing a first exploration of the impact of current and past lottery wins on household labor supply.

The rest of the paper is organized as follows. Section 2 provides a detailed background of wealth effects on various outcomes and discusses the related literature. Section 3 presents the data, sample selection, and variables. Section 4 outlines the econometric strategy, and Section 5 describes the results. Finally, Section 6 concludes.

2 | Literature Review

In this section, our objective is to give a summary of the related literature on income shock impacts, paying attention to the most recent articles published. Many studies have focused on wealth shock impacts on different outputs, such as marital stability, household labor earnings, mortgages, health status, consumption, fertility, and major life cycle decisions such as retirement. Among other exogenous wealth shocks, our literature review indicates that lottery wins, inheritance receipts, or gifts stand out because these may result in sudden wealth, an exogenous change in income, and this financial improvement could result in changes in individual and household decisions.

Cesarini et al. (2017) study the effect of wealth on household labor earnings, using a sample of Swedish lottery players from high-quality administrative data during 1986–2010. The authors find that winning a lottery prize modestly reduces labor earnings, and this response is stronger for winners than for their spouses. This last result points to the importance of the lottery winner's identity and rejects the unitary household model. Furthermore, the study shows that winning a lottery prize has persistent effects over the 10 years following the win. Picchio

et al. (2018) analyze data on Dutch State Lottery winners from 2005 to 2008, finding that winning a lottery prize reduces labor earnings, both contemporaneously and 3 years after the win, although they do not find significant effects on labor force participation. When they remove large lottery wins (over €500,000), they only observe an instantaneous effect on labor earnings, suggesting that such labor earnings reduction is mainly concentrated among those who receive a significant lottery win. Similarly, Golosov et al. (2024) find that labor earnings significantly decrease in the years following the lottery win using administrative data in the US, particularly among households in higher income quartiles. In a novel paper, Cesarini et al. (2023), using the same three samples of lottery players as in Cesarini et al. (2017), estimate the effects of lottery wins on marriage and fertility, finding interesting heterogenous results by winner's gender. Specifically, males increase their probability of marriage within 5 years after the lottery (medium-run) and of having children in all time horizons (two, five, and 10 years after the lottery), while female winners increase their probability of divorce within 2 years after the lottery (short-run), but not 10 years after the lottery (long-run).

For inheritances, D. M. Blau and Goodstein (2016) use data from the Health and Retirement Study (HRS) for a sample of older married couples in the US, focusing on labor force participation, and obtain that receiving an inheritance causes a reduction in the recipient's labor supply, but there is no impact on the recipient's spouse. The authors treat inheritance as a distribution factor, since it is not subject to laws regarding marital property division at divorce in the US, pertaining to the recipient exclusively. In addition, the authors point to the importance of controlling for inheritance expectations, in order to interpret inheritances as a source of exogenous variation in wealth, since some inheritances are anticipated for some time and individuals may change their behavior before actually receiving the bequest, according to life-cycle models. Similarly, Niizeki and Hori (2019) use Japanese panel microdata, the Family and Lifestyle Survey of 2012, to explore the effect of inheritances in the extensive margin of work of individuals aged 21–51, showing that men's labor force participation does not respond to an inheritance, while women's labor force participation decreases following an inheritance. The authors also reject the unitary model, since whoever receives an inheritance reduces her/his labor supply.

The effect of inheritances and gifts on labor supply has been extensively analyzed in Europe recently (Bø et al. 2019; Doorley and Pestel 2020; Malo and Sciulli 2021; Basiglio 2022; Tur-Sinai et al. 2022; Suari-Andreu 2023; Belloc et al. 2025b). For instance, Doorley and Pestel (2020) examine the effect of inheritances in Germany, using data from the German Socio-Economic Panel (SOEP), finding that women are less likely to work full-time after receiving an inheritance and that their hours of work decrease after receiving an unexpected inheritance; this latter effect persists for 3 years after the unexpected receipt. By contrast, men appear not to respond. Basiglio (2022) takes a different approach, focusing on the likelihood of divorce, using Dutch panel data from 2002 to 2016. Her findings suggest different impacts according to the recipient, and when the shock (any inheritance and/or gift) is received by the wife the probability of the couple separating increases. Tur-Sinai et al. (2022) use data from the Survey of Health, Aging and Retirement in Europe (SHARE), where information about inheritances and gifts worth more than €5000 is gathered, showing no effects of inheritances and gifts on labor force participation, for men or women. Suari-Andreu (2023) also uses data from SHARE and focuses on the impact of receiving an inheritance on retirement, consumption, and labor supply, documenting that an inheritance does not have large effects on labor supply, retirement, or food consumption. In a novel approach, Belloc et al. (2025b) highlight the role of accounting for the identity of the spouse who inherits using data from SHARE, rejecting the inheritance pooling hypothesis and showing that wives reduce their labor force participation by 5.3% points after receiving an inheritance.

For the UK, the literature on wealth shocks has focused principally on the impact of lottery wins on different factors (Gardner and Oswald 2007; Boertien 2012; Apouey and Clark 2015; Flèche et al. 2021; Costa-Font and Györi 2023; Costa-Font and Powdthavee 2023), using data from the BHPS. For example, Gardner and Oswald (2007) use data from a General Health Questionnaire (GHQ) conducted in the BHPS between 1996 and 2003, finding that lottery winners have significantly better psychological health. Boertien (2012) focuses on separation and finds that lottery wins reduce the probability of separation only when men win, suggesting that a temporary change in income can distract people from problems within the household.

Like Gardner and Oswald (2007), Apouey and Clark (2015) focus on health status, although they show different lottery impacts according to the health indicator. Specifically, lottery wins have no effect on overall health, but do have a positive effect on mental health. Flèche et al. (2021) study the dynamic effect of lottery wins 1 year before t on the likelihood of becoming self-employed in t, obtaining a significant increase in the probability of self-employment in year t for the top 25% of winners in $t-1$, both men and women, suggesting that the gender entrepreneurial gap could be reduced by improving women's capital access. Costa-Font and Györi (2023) examine the impact of lottery wins on individual BMI, from 2002 to 2007, finding that a lottery win of £1000 reduces the probability of being overweight 1 year later by 3% points, suggesting that the effects of lottery wins take a while to exert health effects. These estimates are particularly concentrated among low-education individuals.

In this paper, we contribute to the literature by examining, for the first time, the impact of lottery wins on household labor supply in the UK. We differ from prior research in other countries by taking a household perspective (Imbens et al. 2001; Picchio et al. 2018) and focusing on work hours rather than labor earnings (Cesarini et al. 2017; Golosov et al. 2024). We do not limit our analysis to contemporaneous relationships, since we also study the lagged effects of lottery wins, differentiating us from D. M. Blau and Goodstein (2016) and Niizeki and Hori (2019), who study the impact of inheritances on household labor force participation in the US and Japan, respectively. Specifically, we examine the impact of lottery wins on household labor supply up to 2 years later, to document any persistence in this relationship. Although the BHPS ended in 2008, to the best of the authors' knowledge this dataset represents the

only nationally representative survey, publicly available, with individual-level, *longitudinal* information on lottery wins over time, together with rich information on socio-demographics, labor, and household characteristics.

3 | Data and Variables

We use data from the BHPS for the years 1997-2008.[2] The BHPS is a nationally representative sample of over 5000 households and 10,000 individuals across Great Britain, conducted between September and Christmas, for a total of 18 waves between 1991 and 2008, by the Institute for Social and Economic Research (ISER) of the University of Essex. The same individuals were re-interviewed in subsequent waves, so the BHPS is a panel data set. In addition, the design of the BHPS consists of following all participants, and if an individual leaves their original household to form a new one, he/she continues to be interviewed and all the new family members become part of the survey and are interviewed. As some panel members left the sample (either through death, emigration, or other forms of attrition) new panel members were incorporated throughout the survey period.

Initially, the first wave in 1991 collected information from 10,300 individuals in 5500 households, drawn from 250 post-code areas of Great Britain. In Wave 9 (survey year 1999) two additional samples equally split between Scotland and Wales were added to the panel sample of 2000 households, and in Wave 11 (survey year 2001) an additional sample, of 2900 households, from Northern Ireland, was included to cover the whole of the United Kingdom. By Wave 18 (2008), about 16,000 individuals participated in the survey.

Our empirical analysis focuses on 12 waves of data, over the period 1997–2008, when information on lottery wins, our key independent variable, is available. To collect lottery information, the following questions are asked: "*Since September 1st (year before), have you personally received any payments, or payment in kind, from a win on the football pools, national lottery or other form of gambling*?" in all survey waves since 1997. If this question was answered positively, then the respondent was asked: "*About how much in total did you receive (was this worth)? (win on the football pools, national lottery or other form of gambling)*". Against alternative datasets, such as the SOEP where lottery win information, as well as inheritance information, are only available at the household level, in the BHPS the information regarding lottery wins is collected at the individual level, which allows us to distinguish the winning person within the household (if any). In the data, the question about winning the lottery is mutually exclusive between family members. That is, the husband answers about whether he has won a prize, and the wife answers about whether she has won. Double positive responses would therefore indicate that both spouses participated and won, potentially reflecting the intensity of playing within the household. This is a tremendous advantage of the BHPS since many works have rejected the well-known income pooling hypothesis (i.e., resources are not equally distributed within the household). This enables us to go deeper into the intrahousehold allocation black box process.

Thus, we can distinguish lottery winners (and other gambling winners) from non-lottery winners, and how much winners receive in total.[3] For this reason, the BHPS has already been used in numerous studies of the impact of lottery wins on various outcomes, such as health (Gardner and Oswald 2007; van Kippersluis and Galama 2014; Apouey and Clark 2015; Cheng et al. 2018; Costa-Font and Györi 2023), marital stability (Boertien 2012), self-employment (Flèche et al. 2021), and social ties (Costa-Font and Powdthavee 2023). Furthermore, contrary to inheritance receipts, lottery winnings are unlikely to be anticipated.

We restrict the sample to two-member households formed by heterosexual spouses (married or cohabiting) between 21 and 65 years old at the time of the interview (Mazzocco 2007), observed for at least three consecutive years (Theloudis et al. 2025). Besides, we consider couples that are stable, that is, that are always formed by the same husband and the same wife (e.g., Mazzocco 2007; Theloudis et al. 2025). As our analysis is focused on market work hours, we keep working couples only (i.e., households in which both the husband and wife report positive hours of work through the year). Furthermore, we drop all observations with missing values for the key variables of interest. These restrictions leave us with a final sample of 1069 unique households whom we follow for at least three consecutive years, formed by a man (husband) and a woman (wife), corresponding to a total of 6214 observations (household X year).

The core BHPS questionnaire includes a wide range of socio-demographic factors of households and individuals, such as income, socio-economic values, labor market behavior, education, household composition, and demographics, some of which we use as control variables in the empirical model. These include age (measured in years), wages (defined in pounds/hour, as total labor income over annual hours of work), self-employment status (a dummy taking value 1 for the self-employed, 0 for employees), marital status (value 1 for married couples, 0 otherwise), household size, the number of children, household non-labor earnings, and household wealth (defined as the combined amount received from interest and dividends for both partners).[4] All monetary and wealth amounts are deflated and expressed in 2005 British pounds using the UK Consumer Price Index (CPI).[5] We also include lagged controls for wages, household non-labor income, and wealth. To control for the potential impact of young kids on household labor supply (i.e., younger children demand more time from their parents), we differentiate between the number of children under 5 years old, and the number of children between five and fifteen years old. We also control for the region of residence (19 regions/metropolitan areas), and the survey year.

Descriptive statistics are reported in Table 1, including the mean as well as standard deviations on the individual-level and household-level variables. As for the main variables, male (female) hours of work are on average 1910 (1360) hours per year. Regarding lottery wins, about 15% of men in our sample report winning the lottery in the survey year, while the percentage of women winners is about 10.6%. However, the amounts of lottery wins are relatively small (the average lottery win is £23.4 for males and £38.0 for females), as expected, though high standard

TABLE 1 | Descriptive statistics.

	Males		Females		Diff.
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**	**(*p*-value)**
Individual variables					
Work hours	1910.089	372.448	1360.330	475.154	(< 0.001)
Lottery win	0.150	0.357	0.106	0.307	(< 0.001)
Lottery amount	23.435	283.850	38.003	1924.067	(0.554)
Lottery amount (conditional on winning)	156.585	719.704	359.440	5911.55	(0.300)
Small lottery prize	0.951	0.217	0.960	0.195	(0.351)
Medium lottery prize	0.022	0.145	0.014	0.116	(0.253)
Large lottery prize	0.028	0.165	0.026	0.159	(0.801)
Age	45.029	8.428	43.180	8.305	(< 0.001)
Wage rate (pounds per hour)	13.368	9.784	9.658	8.471	(< 0.001)
Primary education	0.464	0.499	0.513	0.500	(< 0.001)
Secondary education	0.382	0.486	0.313	0.464	(< 0.001)
Tertiary education	0.154	0.361	0.173	0.378	(< 0.001)
Self-employed	0.052	0.221	0.020	0.139	(< 0.001)
		Mean	**Std. Dev.**		
Household variables					
Married		0.939	0.238		
# household members		3.483	1.067		
# children aged 0–4		0.123	0.368		
# children aged 5–15		0.800	0.950		
Household non-labor income		2632.01	4780.93		
Household wealth		509.114	2679.70		
# observations (household X year)		**6214**			
# households		**1069**			

Note: Data from BHPS 1997–2008. The whole sample consists of working couples between 21 and 65 years old. Small lottery prizes defined as those equal to or less than £500; medium lottery prizes defined as those greater than £500 and equal to or less than £1000; large lottery prizes defined as those greater than £1000. *p*-values from *t*-tests on the equality of means between males and females are reported in parentheses.

deviations suggest significant variability. Conditional on winning the lottery, the average amount for male winners is £156.585 and £359.440 for female winners, the average of respondents who received a medium-sized lottery win (i.e., £500–1000) is 2.2% for male winners and 1.4% for female winners, while the average for large lottery prizes (i.e., more than £1000) is 2.8% for males and 2.6% for females. Regarding the other variables, the average husband is about 45 years old, while the average wife is about 43 years old. The hourly wage of husbands is on average £13.4 per hour, against £9.7 per hour for wives, in line with Blundell et al. (2021). Furthermore, about 15.4% of males and 17.3% of females have a high education level, whereas 5.2% of males and 2.0% of females are self-employed. Finally, 94% of households report being legally married, and the average household has 3.5 members, with on average 1 kid (0.1 child on average between 0 and 4 years old, and 0.8 on average between 5 and 15 years old), and the total non-labor income and amount from interest and dividends are about £2632.010 and £509.114, respectively.

Table 2 shows descriptive statistics differentiating among lottery winners and non-lottery winners, suggesting statistically significant differences in observable individual characteristics between these two groups of individuals. Specifically, male lottery winners work fewer hours, have lower wage rates, are older, and have lower education levels and self-employment rates. For females, winners receive lower wages, are older and have lower education levels. All these differences are statistically significant.

4 | Econometric Strategy

We estimate how household labor supply is affected by lottery wins, using the fixed-effects estimator (i.e., the "within" estimator) on the following equation, separately for husbands ($j = 1$) and wives ($j = 2$):

TABLE 2 | Descriptive statistics, winners and non-winners.

	Males					Females				
	Non-winners		Winners		Diff.	Non-winners		Winners		Diff.
	Mean	Std. Dev.	Mean	Std. Dev.	(*p-value*)	Mean	Std. Dev.	Mean	Std. Dev.	(*p-value*)
Individual variables										
Work hours	1930.612	415.615	1881.221	299.145	(< 0.001)	1356.901	474.730	1367.744	476.107	(0.403)
Wage rate (pounds per hour)	13.762	9.678	12.814	9.907	(< 0.001)	9.859	6.649	9.224	11.451	(< 0.001)
Age	44.735	8.621	45.443	8.134	(0.001)	42.909	8.302	43.766	8.285	(< 0.001)
Primary education	0.454	0.498	0.479	0.500	(0.052)	0.475	0.499	0.597	0.491	(< 0.001)
Secondary education	0.366	0.482	0.405	0.491	(0.002)	0.329	0.470	0.280	0.449	(< 0.001)
Tertiary education	0.180	0.385	0.117	0.321	(< 0.001)	0.196	0.397	0.123	0.328	(< 0.001)
Self-employed	0.058	0.234	0.042	0.201	(0.005)	0.019	0.137	0.021	0.143	(0.598)

Note: The number of male non-winners is 674 (3632 observations), male winners 395 (2582 observations), female non-winners 770 (4249 observations), and female winners 299 (1965 observations). *p*-values from *t*-tests on the equality of means between winners and non-winners are reported in parentheses.

$$
\begin{aligned}
Y^j_{it} = \alpha^j_i + \sum_{k=0}^{2} \Big(& \beta^j_{1k} Lottery^1_{it-k} + \beta^j_{2k} Lottery^2_{it-k} + \gamma^j_{1k} w^1_{it-k} \\
& + \gamma^j_{2k} w^2_{it-k} + \delta^j_k y_{it-k} + \rho^j_k a_{it-k} \Big) \\
& + \eta^{j\prime} X^j_{it} + \tau^j_{11} Y^1_{it-1} + \tau^j_{12} Y^1_{it-2} + \tau^j_{21} Y^2_{it-1} + \tau^j_{22} Y^2_{it-2} \\
& + \lambda^j_t + \mu^j + \varepsilon^j_{it},
\end{aligned} \tag{1}
$$

where i represents the surveyed household ($i = 1, ..., N$), j denotes the spouse, and t the survey year. The dependent variable Y^j_{it} is the annual hours of work of spouse j in household i. $Lottery^j_{it-k}$ is a dummy variable taking value 1 if spouse j in household i won the lottery in period $t - k$, for $k = 0, 1, 2$, 0 otherwise, and w^j_{it-k}, y_{it-k}, and a_{it-k} represent log-wages, log-non-labor income, and log-wealth, respectively.[6] Vector X^j_{it} represents time-varying socio-demographics, α^j_i represents household-fixed effects, λ^j_t is year fixed-effects, and μ^j region fixed-effects (we omit the region sub-index for the sake of simplicity). Finally, ε^j_{it} is the error term and we cluster the standard errors at the household level to account for hetero-skedasticity and arbitrary correlation of the error term at the household level over time. The variables in X^j_{it} include spouse j age and its square, to account for any non-linear effects of age on labor supply, self-employment status, marital status, household size, and the number of children in the household (aged 0–4, and 5–15). β^j_{1k} and β^j_{2k} are our coefficients of interest, measuring the own and spouse lottery win effect on the annual labor supply of a given spouse j, both contemporaneously $k = 0$ and lagged ($k = 1, 2$).

According to prior literature, one major problem in estimating the impact of lottery wins on labor supply is that it is likely that unobserved time-invariant characteristics jointly influence lottery wins and labor supply behaviors, such as risk aversion, time-use preferences, or financial knowledge, among others. Therefore, it is important to capture fixed unobservable characteristics. Given the panel structure of the BHPS, that follows the same individuals through time, we control for the unobserved heterogeneity of individuals and implement individual fixed-effects panel estimations, in order to remove any time-invariant unobserved heterogeneity in preferences. Specifically, the presence of α^j_i in Equation (1) indicates that we use individual fixed-effects panel estimations. This estimation method is preferred over pooled Ordinary Least Squares (OLS) regression models, which are subject to possible endogeneities, such as individual or household-level time-invariant unobservable factors that may bias the OLS estimates.

One key piece of information provided by the BHPS is the amount of the lottery win received (individuals were asked to report the amount of a lottery win received during all waves since 1997). Since larger lottery wins represent larger increases in unearned income, this may affect labor supply behavior more strongly (Imbens et al. 2001; Sila and Sousa 2014; van Kippersluis and Galama 2014; Picchio et al. 2018). Thus, we run Equation (1) replacing $Lottery^j_{it-k}$ with three dummy variables taking value 1 if spouse j in household i won a small lottery (worth equal to or less than £500), a medium lottery (worth more than £500 and equal to or less than £1000) and a large lottery (worth more than £1000) in period $t - k$, for $k = 0, 1, 2$, and 0 otherwise, in order to examine whether those who received a larger lottery win were more likely to modify their annual hours of work, in comparison to those who do not win any lottery in period t, $t - 1$, and $t - 2$.[7] In this case, β^j_{1k} and β^j_{2k} captures the effects of a small (greater than £0 and equal to or less than £500), medium (greater than £500 and equal to or less than £1000) or large (greater than £1000) lottery win on household labor supply. In additional specifications, we also scale lottery win amounts relative to household income.

5 | Results and Discussion

This section shows the results of estimating Equation (1). We proceed as follows. First, we focus on a dummy variable that takes value 1 if either the husband or the wife won a lottery prize in period t, $t - 1$, or $t - 2$, respectively. Second, we focus

on three alternative dummy variables that refer to different lottery prize amounts for each spouse within the household, keeping as reference category no lottery winners, as it is quite reasonable that spouses respond differently to lottery wins depending on the magnitude of the prize. Later, we scale lottery prizes relative to past household income. Besides, we also report heterogeneity checks based on individual and household characteristics and conduct a battery of robustness checks using alternative sample selections, econometric specifications, and methods of estimation. Finally, we compare the results of this study with those of prior research.

5.1 | Baseline Results

Table 3 shows the main results of estimating Equation (1) on spouses' annual hours of work. These results show that a lottery win has a contemporaneous positive effect on the men's hours of work at the 10% significance level. Specifically, annual hours of work of men increase by 21.207 h due to a spouse's lottery win. However, additional lags display no statistically significant coefficients, indicating that a past lottery win, regardless of the spouse's identity, is not related to the work hours of men. In contrast, the results for women suggest statistically significant effects of lottery wins on hours of work. Specifically, women's annual hours of work are reduced by 26.936 h when their spouse wins the lottery in that year. Additionally, this effect is persistent until 1 year later, when the peak of the decline occurs, since if the spouse won the lottery the previous year, the current annual hours of work of women are reduced by 28.672 h. Two years later, this effect disappears.[8]

TABLE 3 | Current and past impacts of lottery wins.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−12.164	11.600
	(9.680)	(15.435)
Spouse	21.207*	−26.936**
	(12.444)	(13.168)
Lottery win $t-1$		
Self	6.705	15.008
	(12.447)	(16.377)
Spouse	−8.951	−28.672**
	(12.627)	(14.524)
Lottery win $t-2$		
Self	5.413	1.672
	(10.107)	(13.996)
Spouse	−3.884	6.053
	(11.888)	(14.422)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.152	0.281

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

In summary, while men's annual hours of work are not affected by lottery wins at standard significance levels ($p > 0.05$), women tend to reduce their labor supply, both contemporaneously and 1 year following the win. This finding is in line with prior research which documents that labor supply elasticities are greater for women than for men (Keane 2011) and it rejects the unitary household model (D. M. Blau and Goodstein 2016; Cesarini et al. 2017; Niizeki and Hori 2019), since the identity of the wealth shock recipient matters.

So far, we have only studied the impact of lottery wins on work hours. However, we acknowledge that a simple dummy strategy for lottery wins ignores lottery win size and could substantially affect our results. Therefore, we next estimate Equation (1) and replace the lottery win indicator variable for both spouses (in t, $t-1$, and $t-2$) with three dummy variables that take value 1 for small lottery wins, medium lottery wins, and big lottery wins, in t, $t-1$ and $t-2$ for each spouse, and value 0 otherwise.

Column 1 of Table 4 shows that men do not change their annual hours of work, irrespective of the amount of the lottery prize, neither for own nor spouse lottery prizes. However, statistically significant effects are reported for the women's hours of work. Specifically, women's current annual hours of work are reduced by 31.526 h if their husbands have won a small lottery prize in that year, and by 30.403 if their husband won a small lottery prize 1 year before. For large lottery wins, the results suggest that current hours of work by women are reduced by 122.162 h if they won a lottery prize worth more than £1000 one year before, and by 120.556 h if they won such a large lottery prize two years before, suggesting some persistent effects of large lottery wins on current women's labor supply.

All these estimates are statistically significant at the 5% level and confirm that a simple dummy variable strategy for lottery wins omits significant differences across lottery amounts. Consequently, a large lottery win significantly decreases women's labor supply, although this effect appears with some lag and not contemporaneously. The magnitudes are pretty similar and range from 120.556 to 122.162, suggesting a lasting impact of large lottery wins on labor supply and that this effect takes time to appear.[9] Consequently, the prior estimates that suggest that women reduce their current annual hours of work due to the receipt of a lottery win are due to lottery amounts concentrated in the lower and upper tails of the lottery amounts distribution, suggesting ultimately that women modify their current labor behavior.

As an additional specification, we scale the lottery amount by household income in the previous wave (Brown et al. 2010; Doorley and Pestel 2020; Kim and Koh 2021, 2025; Malo and Sciulli 2021; Belloc et al. 2025a).[10] Results, reported in Table 5,

TABLE 4 | Current and past impacts of lottery win amounts.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−10.432	13.248
	(9.672)	(16.172)
Spouse	17.341	−31.526**
	(12.203)	(13.356)
Medium lottery win t		
Self	−70.916	34.824
	(78.164)	(73.142)
Spouse	54.202	43.808
	(50.647)	(34.807)
Large lottery win t		
Self	−29.057	−47.985
	(35.079)	(59.973)
Spouse	127.017	71.771
	(80.592)	(61.249)
Small lottery win $t-1$		
Self	5.616	19.788
	(12.644)	(16.967)
Spouse	−6.547	−30.403**
	(12.707)	(15.069)
Medium lottery win $t-1$		
Self	−1.483	−93.854
	(38.050)	(149.325)
Spouse	33.992	−9.029
	(31.715)	(29.012)
Large lottery win $t-1$		
Self	48.477	−122.162**
	(30.818)	(53.419)
Spouse	−97.459	31.307
	(108.899)	(47.685)
Small lottery win $t-2$		
Self	5.715	3.053
	(10.572)	(14.087)
Spouse	−4.625	6.610
	(11.580)	(15.089)
Medium lottery win $t-2$		
Self	−23.977	66.753
	(50.886)	(62.960)
Spouse	36.372	14.556
	(26.230)	(37.975)
Large lottery win $t-2$		
Self	45.011	−120.556**
	(35.328)	(59.630)
Spouse	−13.822	0.802
	(126.095)	(50.593)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.155	0.285

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE 5 | Current and past impacts of lottery win amounts, scaled by past household income.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Household income $t-1$		
Self	−426.048**	−33.662***
	(212.931)	(9.333)
Spouse	36.441	595.042
	(47.183)	(489.739)
Lottery win amount $t-1$/Household income $t-2$		
Self	264.434	−38.099***
	(487.685)	(11.447)
Spouse	−1.175	−289.878
	(20.635)	(727.812)
Lottery win amount $t-2$/Household income $t-3$		
Self	203.738	−66.235***
	(325.878)	(16.904)
Spouse	−25.920	−552.163
	(27.791)	(818.395)
Number of observations	2572	2572
Number of households	781	781
R-squared	0.196	0.284

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

suggest that an increase in the lottery prize equal to the past household income (about £41,945 on average) significantly reduces the labor supply for both husbands and wives in our

sample. However, the response differs among husbands and wives, in terms of both magnitude and persistence. Specifically, such an increase in the lottery amount reduces the labor supply of husbands by about 426 h annually, suggesting that some may exit the labor market. In contrast, the effect on wives is smaller but more persistent, with the peak of the decline 2 years after the win. At the time of occurrence, an increase in the lottery prize equal to the past household income reduces current working hours among wives by 33 h. On the other hand, wives' current annual working hours fall by 38 in the following year and 66 h two years after, respectively.

In the UK, most lottery wins accrued during marriage, unless the couple has signed a specific prenuptial agreement, are treated as being owned by spouses equally and, in the event of divorce, should be divided equally. As argued previously, we consider a lottery win *to* be a shock to *household* resources, not to individual wealth. Consequently, a lottery win cannot be treated as assignable, that is, it does not straightforwardly empower or modify the bargaining power of a given spouse within the household as would be the case of an inheritance, for instance. In contrast, it expands the household budget constraint and the outside option of *both* spouses symmetrically.[11]

However, we find that a lottery win causes a change in household labor supply only for women, especially for large shocks, as women reduce their current labor supply due to this positive unearned income shock, and this effect appears to be persistent (at least until 2 years after the prize). Further research should dive deeper into this result by studying the complete time allocation of families (which is not available in the BHPS), as decreased female labor supply could be compensated by an increase in chores or care activities, reinforcing intrahousehold inequalities concerning time allocation.

The fact that the distribution of lottery wins across the household matters, for small and large prizes, rejects a key prediction of the unitary household models. Specifically, it rejects the well-known income pooling hypothesis which suggests that it is the total amount of household resources that matters to household observed behavior, and the household pools all resources. This also suggests a non-random assignment of lottery wins within the household and a joint household decision. On the other hand, if the woman wins a significant prize, this has no effect on the spouse labor supply.[12]

5.2 | Heterogeneity Checks

This subsection examines the heterogeneous effect of lottery wins on household labor supply. Table 6 presents the corresponding regression results. In particular, we investigate whether the effects of lottery wins on hours worked vary by age (spouses under 45 vs. 45 and older), earnings (below vs. above median household earnings), education (primary or less vs. higher education), and household composition (spouses in households with vs. without children). First, we test whether there is any heterogeneity by age. Following Costa-Font and Powdthavee (2023), we split the sample into younger and older spouses and find that only wives under the age of 45 significantly adjust their labor supply in response to lottery wins. Second, we examine heterogeneity by education and find that wives reduce their labor supply following a lottery win regardless of educational attainment. Finally, we assess heterogeneity by household composition and find that only women with children reduce their labor supply 1 year after the lottery win. For men, we observe statistically significant positive effects for spousal lottery wins among highly educated men and among men in households without children ($p < 0.05$).[13]

5.3 | Additional Checks, Alternative Specifications, and Sample Criteria

a. *Testing the impact of lottery wins on full-time status.* Another potential mechanism through which our estimates may relate to labor supply decisions is a change in full-time employment status. Specifically, respondents could adjust their full-time status due to a wealth shock. The results appear in Appendix Table A4 for lottery wins, but do not suggest that workers adjust their full-time status due to a lottery win. For lottery amounts, the results are reported in Appendix Table A5 and A6 and do not suggest that workers reduce their full-time status.

b. *Omitting individual-specific fixed-effects.* Our main specification includes individual fixed-effects, and in Appendix Tables A7–A9 we show Seemingly Unrelated Regression (SUR) estimates without fixed-effects, where we treat the BHPS as a repeated cross-section and account for correlation within households through the SUR method of estimation. We find that omitting individual fixed-effects strongly affects the results, suggesting that the inclusion of individual fixed-effects is essential to mitigate potential concerns regarding omitted variables bias.

c. *Including individuals over 65 in the sample.* Our baseline estimates focus on couples aged between 21 and 65. Alternatively, we include those over 65 in our estimations and re-run Equation (1), respectively for lottery wins and large lottery wins. The results in Appendix Tables A10–A12 are very similar to those previously reported, although the estimates for lottery amounts are somewhat greater.

d. *Omitting self-employed workers.* Initially, our sample selection focuses on working couples aged between 21 and 65 years, with three years of consecutive information. As can be seen in Table 1, 5.2% of males and 2% of females in our baseline sample are self-employed. Self-employed workers may be more flexible in choosing their working hours and, in this robustness check, we exclude self-employed individuals (almost 274 observations from 92 households) from the main sample and run Equation (1), focusing on the effect of lottery wins on labor supply of the employed. The results of this robustness check are reported in Appendix Tables A13–A15 and suggest similar results to the main results of Tables 2 and 3. In addition, for males, current annual hours of work increase by 179 h if their spouses win a large lottery prize in that year. As a

TABLE 6 | Heterogeneity checks.

	Male						Female					
	Younger	**Older**	**Highly educated**	**Less educated**	**With children**	**Without children**	**Younger**	**Older**	**Highly educated**	**Less educated**	**With children**	**Without children**
Dependent variable: Annual hours of work												
Lottery win t												
Self	−25.767*	2.087	−14.318	−15.254	−31.321**	−6.420	12.879	19.378	−7.957	−39.099**	4.493	8.587
	(13.712)	(15.744)	(13.233)	(13.949)	(13.004)	(16.011)	(27.294)	(16.201)	(21.661)	(16.930)	(24.031)	(16.737)
Spouse	7.192	21.764	42.525**	4.856	−13.796	44.249**	−33.845*	−28.972	−15.495	20.770	−18.941	−6.959
	(21.603)	(17.886)	(18.724)	(16.533)	(16.402)	(19.051)	(20.277)	(19.815)	(19.195)	(20.244)	(20.021)	(15.712)
Lottery win $t-1$												
Self	−9.521	26.736	18.168	−9.960	−11.743	34.081	34.614	−18.452	−9.010	−14.027	15.905	−2.911
	(15.289)	(21.519)	(16.302)	(18.827)	(15.053)	(22.560)	(29.967)	(17.818)	(25.062)	(15.109)	(25.827)	(16.818)
Spouse	7.634	−41.358*	−30.606*	24.949	16.902	−37.635	−58.585***	−1.747	−53.824**	28.018	−54.528***	16.880
	(17.754)	(22.955)	(16.079)	(20.207)	(15.967)	(24.240)	(21.222)	(15.600)	(25.517)	(20.958)	(19.209)	(15.281)
Lottery win $t-2$												
Self	−6.018	2.026	−1.081	9.669	−8.528	31.313*	5.741	−7.355	4.184	26.000*	−1.604	4.930
	(16.042)	(16.301)	(13.016)	(15.178)	(13.057)	(18.465)	(21.788)	(18.090)	(21.014)	(15.189)	(20.036)	(18.690)
Spouse	3.015	−10.904	−22.242	16.828	23.209	−23.321	16.495	14.574	−11.950	1.639	4.769	29.266**
	(17.852)	(19.989)	(16.747)	(17.204)	(14.198)	(23.672)	(20.061)	(15.010)	(22.350)	(18.721)	(21.010)	(14.311)
Number of observations	1735	2051	2021	1765	2024	1762	2050	1736	1819	1967	2024	1762
Number of households	559	661	574	495	623	590	648	573	536	533	623	590
R-squared	0.180	0.172	0.151	0.19	0.189	0.166	0.279	0.339	0.309	0.312	0.298	0.294

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

result, women reduce their labor supply with some delay to devote more time to other activities, while men compensate by increasing their working hours, thereby deepening intrahousehold inequalities through greater specialization in time use.

e. *Controlling for self-reported health status.* The main estimates do not account for the self-reported health status of spouses, which is expected to be a key determinant of an individual's hours worked, as well as their spouse's labor supply. However, for the years 2000–2008 the BHPS includes the following question: "*Please think back over the last 12 months about how your health has been. Compared to people of your own age, would you say that your health has on the whole been excellent/good/fair/poor/very poor?*".[14] Based on this, we define a dummy variable that takes the value 1 if the spouse reported being in excellent or very good health, and value 0 otherwise. Appendix Tables A16–A18 suggest similar results after including this control variable for both spouses.

f. *Placebo tests.* We test the sensitivity of our estimates to a set of placebo tests, with the results being reported in Appendix Tables A19 and A20. In Table A19, we simulate a random lottery win indicator, for both husbands and wives, that matches the distributional properties (mean and standard deviation) of the actual lottery wins. On the other hand, Table A20 displays coefficient estimates for the effect of future lottery wins on past labor supply, to test for potential anticipation effects. Coefficients are not statistically significant in both cases.

g. *Non-winners.* Identification in our analysis relies on lottery winners or their spouses, while households formed for spouses who are always non-winners are not used for identification. However, our main sample includes households that did not win *t*he lottery during the observation period and differ in ways that may be relevant to labor supply. These may include both unlucky spouses and those who did not participate in the lottery. In Appendix Tables A21–A23, we restrict the sample to households that reported at least one lottery win during the observation period. This approach follows other studies that cannot directly observe lottery participation (Cheng et al. 2018; Raschke 2019; Flèche et al. 2021; Costa-Font and Györi 2023; Costa-Font and Powdthavee 2023). The results remain robust to the exclusion of non-winners.[15]

h. *Matched sample.* As an alternative approach, we implement a Propensity Score Matching (Rosenbaum and Rubin 1983) estimator to construct a suitable comparison group.[16] Specifically, we create a control group that "matches" the treatment group, which includes households who have won the lottery at least once during the observation period. We then re-estimate Equation (1) in the matched sample, which consists of the observations in the treatment group plus the observations in the matched control group. Results, reported in Tables A24–A26, are very similar across different lottery *amounts.*

5.4 | Comparison With Prior Labor Supply Estimates

All in all, our results suggest gender-specific effects of lottery wins on household labor supply. Furthermore, we document long-lasting effects of large lottery wins on current women's labor supply. The gender-related results align with a large amount of research documenting that labor supply decreases when unearned income increases and that labor supply is more elastic for females, who are traditionally considered to be less strongly attached to the labor market (F. D. Blau and Kahn 2007; Keane 2011; Bargain et al. 2014), exploiting information for inheritances in Europe or Japan (Bø et al. 2019; Niizeki and Hori 2019; Doorley and Pestel 2020; Malo and Sciulli 2021; Belloc et al. 2025b) as well as other unearned income components arising from cash transfers, work bonuses or house price shocks (Jacob and Ludwig 2012; Zhao and Burge 2017; Disney and Gathergood 2018; Feinberg and Kuehn 2018; Yang 2018; Li et al. 2020). However, prior estimates using lottery prizes in the US and Sweden (Imbens et al. 2001; Cesarini et al. 2017) have not documented any gender-specific heterogeneity, while Picchio et al. (2018) and Golosov et al. (2024) obtain labor earnings responses greater for male lottery players than for female lottery players. Hence, our results from this point of view are novel.[17]

We obtain modest responses for small lottery prizes, displayed on the labor supply of the females, and that responses are especially important in magnitude for large prizes, in line with prior research in Massachusetts (Imbens et al. 2001). These responses for small prizes contrast with Imbens et al. (2001), Cesarini et al. (2017), Picchio et al. (2018) and Golosov et al. (2024). Specifically, Imbens et al. (2001) document no effect of lottery wins on the labor supply of the spouse, while Cesarini et al. (2017) and Golosov et al. (2024) obtain that labor responses are stronger for winners than for their spouses, and Picchio et al. (2018) show that smaller prizes only have effects for those who won the lottery. In our sample, small prizes are shared between spouses, and lottery wins flow from males to females reflecting a joint household decision.

We find that the responses for large prizes take some time to appear, 1 year in our sample, confirming our initial hypothesis that differentiating between short− and medium-run responses is important to properly estimate labor supply responses to income shocks, in line with Picchio et al. (2018). In the UK, contrary to the Netherlands' labor market in which workers can easily adjust their labor supply at the intensive margin through part−time occupations (Picchio et al. 2018), it appears that it takes a while to effectively modify the labor supply and adjust to the new family circumstances, as the effect is observed 1 year after the lottery win, not in the same year, suggesting some rigidity of the labor market in the UK. This delayed effect appears despite the small lottery amounts of our sample, in comparison to prior research (Cesarini et al. 2017; Picchio et al. 2018).[18] This characteristic of our sample also contrasts with prior results in Sweden, since Cesarini et al. (2017) also show that Swedish lottery winners immediately reduce their earnings.

Our study focuses on labor supply decisions concerning working hours in a sub-sample of dual-earner couples. Analyses for the decision to participate in the labor market do not display statistically significant values. This contrasts with previous labor supply estimates for inheritances (Brown et al. 2010; D. M. Blau and Goodstein 2016; Niizeki and Hori 2019; Malo and Sciulli 2021; Belloc et al. 2025b), suggesting that the labor supply responses to inheritances differ from lottery wins. This can be interpreted by the fact that older individuals are more likely to inherit than those in earlier stages of their life cycle. During later stages of the life cycle, labor supply decisions are typically discrete and concentrated in the extensive margin by withdrawal from the labor force. For instance, Malo and Sciulli (2021) find that inheritances decrease the probability of being in the labor force by 7.86% points among women in Europe, whereas Belloc et al. (2025b), using a dataset involving older Europeans, show that women appear to reduce their probability of being in the labor force by 5.3% points after inheriting. These latter responses are purely contemporaneous, and inheritances in the past do not influence current labor supply decisions. In Japan, Niizeki and Hori (2019) also report that only women heirs appear to reduce their probability of being in the labor force by 4.7% points.

Finally, the restrictions imposed by our household level analysis preclude us from estimating long-run responses, which have been reported, in other contexts, even 6 years and 10 years after winning a lottery at the individual level (Imbens et al. 2001; Cesarini et al. 2017). Additional analyses restricting the sample to households followed for at least five consecutive years suggest that the impact of lottery wins on household labor supply disappears 1 year after the lottery prize. Against this, Picchio et al. (2018), who also focus on medium-term responses 3 years after the prize, show that the impact of the prize on earnings persists over time and the peak is found 3 years after.

6 | Conclusions and Policy Implications

This paper analyzes the impact of lottery wins on household labor supply, focusing on the annual hours of work from a sample of dual-earner couples in the UK.[19] We adopt a household perspective, which allows us to study intrahousehold dynamics, and document different effects, depending on the identity of the winning spouse, on the one hand, and the spouse's labor supply, on the other. Using the British Household Panel Survey (BHPS), a large nationally representative household panel survey, we show that winning the lottery in the present and in the past has a negative effect on current work hours among women. In addition, small prizes received by the husband reduce the labor supply of the partner, while for large amounts females significantly decrease their annual hours of work. From a policy point of view, an exogenous change in wealth reduces the incentive to work among females, contrary to that of males. Prior research using lottery wins has not reported any heterogeneity by gender (Imbens et al. 2001; Cesarini et al. 2017) or has shown larger effects for males (Picchio et al. 2018; Golosov et al. 2024).

Household labor supply estimates reject the unitary model of the household, since we find that lottery wins have differential impacts on husbands and wives, depending on the lottery winner, and thus we reject the well-known income pooling hypothesis, according to which the identity of the lottery winner should not affect household labor supply decisions. Consequently, it is important to adopt a household perspective when examining the effects of income shocks, as households do not pool the resources. We also find that lottery wins have a lasting impact on household behaviors, in line with Theloudis et al. (2025), and complementing existing research on lottery wins and other shocks, such as inheritances, that have been reported to be related to household labor force participation in a static setting (D. M. Blau and Goodstein 2016; Niizeki and Hori 2019).

One limitation of this paper is that we cannot account for lottery ticket spending, which could bias our estimates (Picchio et al. 2018; Kim and Oswald 2021) since a lottery win is a random event subject to actually entering and playing the lottery. Unfortunately, the BHPS does not contain information about the number of times an individual has played the lottery or on players' expenditures on lottery tickets. Thus, we are unable to distinguish between regular players, occasional players, and non-players. This shortcoming is shared by other major panel datasets such as the SOEP or the Household, Income and Labor Dynamics in Australia (HILDA). This suggests thar our estimates may suffer from selection bias, as only individuals who buy lottery tickets can win, and buying lottery tickets might be related with unobserved factors that also influence labor supply (e.g., risk preferences, financial constraints, or income levels). Relatedly, estimates might also suffer from omitted variable bias, as we cannot control for lottery participation, and by focusing only on lottery winners, the analysis misses a key comparison group, non-winners who also bought tickets, and therefore estimates are likely biased. Nevertheless, the use of a household panel survey enables us to partially control for unobserved time-invariant individual heterogeneity in preferences and alleviate the problem of omitted information on lottery ticket spending, through the use of panel data estimators and assuming that lottery ticket spending is relatively constant over time (Kim and Oswald 2021). If variation in lottery ticket spending is constant across households, it will be absorbed through the inclusion of fixed effects (Kim and Oswald 2021; Costa-Font and Györi 2023). Therefore, our empirical strategy partially accounts for this issue.[20] Furthermore, recent evidence (Kim and Koh 2021), finds that controlling for ticket spending has only a minimal impact on estimates.

Another limitation relates to the definition of different amounts of lottery wins. Some authors have defined small, medium, and large lottery prizes in different ways. For example, Picchio et al. (2018) defined a small prize if the lottery win is smaller than €10,000 and a large prize if the lottery win is greater than €100,000. However, the BHPS does not allow for this definition, as it does not include a sufficiently large amount of large lottery wins. Finally, time-varying unobserved characteristics of households may affect our estimates. These time-varying characteristics may include changes in behavior before or after a

lottery win, such as changes in preferences regarding leisure, paid work, fertility, retirement, or replaying, which might be endogenous to the probability of winning the lottery.

Despite these limitations, several policy-relevant implications emerge from this work and the study of lottery wins in the UK, a region where a large share of the population plays the lottery, makes our results of interest for policy makers in understanding the intrahousehold consequences of lottery prizes. The main implication of our results is that lottery wins may exacerbate intrahousehold inequalities, as women tend to reduce their labor supply. Therefore, our findings can inform the design of gambling taxation and the regulation of lottery systems, since even medium-sized lottery wins (classified in our analysis as large due to sample limitations) discourage work among women and reinforce gender inequalities in terms of paid work and time allocation within the household.

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Conflicts of Interest

The authors declare no conflicts of interest.

Endnotes

[1] Existing research has used the BHPS to study the impact of the lottery on various household behaviors. Boertien (2012) shows that lottery wins reduce the probability of divorce 3 years later, Apouey and Clark (2015) study the impact of lottery prizes on physical and mental health, Cheng et al. (2018) study the relationship between lottery wins and health service utilization, Flèche et al. (2021) document a greater probability of being self-employed for those who win a lottery, whereas Costa-Font and Györi (2023) and Costa-Font and Powdthavee (2023) examine the effect of lottery wins on individuals' body mass index (BMI) and social relationships, respectively.

[2] In 2009, the BHPS was suspended and subsumed within a new survey, the Understanding Society Study (UK Household Longitudinal Study (UKHLS)). This resulted in many changes to the survey. Specifically, we do not use that sample in this analysis because it does not include information about lottery wins.

[3] In the UK, a significant share of the population plays the lottery and the national lottery is, overwhelmingly, the main form of gambling (Wardle 2007; Boertien 2012; Apouey and Clark 2015; Cheng et al. 2018; Flèche et al. 2021; Costa-Font and Györi 2023; Costa-Font and Powdthavee 2023).

[4] The survey provides information on amount received from interest and dividends divided into brackets. We assign the midpoint of the reference bracket and for the highest bracket we assign the lower bound, since it has no upper bound.

[5] We have extracted the CPI index from the Office for National Statistics (https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/d7bt/mm23, accessed 17 January 2023).

[6] We control for changes in assets before and after lottery wins and include the present and past values of interests and dividends, which denotes returns from household wealth. This is our proxy for wealth accumulation. Information on wealth components is only available during limited years in the BHPS (Kan and Laurie 2014; van Kippersluis and Galama 2014; Karagiannaki 2017; Burrows 2018).

[7] We acknowledge that this classification of lottery amounts could be refined. However, the limited sample size regarding lottery wins prevents us from a more detailed classification. For instance, there might be nonlinearities associated to *very large* winnings (i.e., labor supply may respond only to substantial prizes). Unfortunately, such cases are rare in the data (only 4 observations above £10,000). Excluding these cases does not materially alter our results.

[8] We restrict the analysis to households observed for at least five consecutive periods and find similar results: additional lags (i.e., the fourth and fifths lags) are not statistically significant.

[9] The results remain identical if we exclude household non-labor income and household wealth from the specifications, suggesting that those variables are not including either the amount of lottery win or the interest arising from lottery wins.

[10] We also used dummy variables for lottery prizes above the median of this variable (£38,084.27), but only a single prize, from wives in our sample, exceeds this value.

[11] The outside option represents the situation of partners outside the marriage (Theloudis et al. 2025).

[12] In Appendix Tables A1–A3 we estimate the effects of lottery wins and lottery amounts on spouses' labor force participation. To do this, we modify slightly our sample selection and include those spouses who are not employed, and predict their hourly wages using a Mincer-style equation (i.e., using individual's and household's characteristics to predict each spouse's hourly wage rate). The results of the linear probability models, together with individual fixed effects, do not suggest that lottery prizes reduce the probability of being in the labor force. This result is not surprising, given the age range covered and the lottery amounts of our sample.

[13] We examined heterogeneity in terms of income or region of residence, but found no evidence of differential effects. Additionally, we explored heterogeneity across the distribution of hours worked using the quantile fixed effects estimator proposed by Machado and Santos Silva (2019). The estimates, however, did not suggest meaningful heterogeneity.

[14] This survey question is available for all years excluding 1999. However, we restrict the sample to households observed at least three consecutive periods, meaning that years 1997 and 1998 cannot be used for the analysis.

[15] About 51% of households report winning the lottery more than once in the entire panel.

[16] Bø et al. (2019) also used this methodology to balance the distribution of observed characteristics between inheritors and non-inheritors.

[17] We consider that Imbens et al. (2001) show that females reduce their working hours more as a result of large lottery wins, but the difference is not statistically significant, while Cesarini et al. (2017) find that labor earnings responses are greater for males than for females, but these differences are not statistically significant.

[18] In fact, Picchio et al. (2018) show that removing lottery prizes above €500,000 leads to solely instantaneous effects. In our sample, the maximum corresponds to a lottery prize of £151,027 among females.

[19] Although we focus on labor supply, we acknowledge that lottery wins may impact broader household financial decisions, such as investments in education, home ownership, or other forms of capital accumulation. We left these analyses for further research.

[20] Recent analyses indicating the importance of accounting for lottery ticket spending cannot control for unobserved time-invariant heterogeneity (Kim and Oswald 2021; Kim and Koh 2021, 2025; Nguyen 2021; Nguyen et al. 2023). Therefore, concerns regarding endogeneity persist. Future research should revisit this lottery ticket bias with the appropriate household panel dataset.

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APPENDIX

TABLE A1 | Labor force participation and lottery wins.

	Male	Female
Dependent variable: LFP		
Lottery win t		
Self	−0.011	0.029**
	(0.009)	(0.012)
Spouse	0.010	0.004
	(0.011)	(0.012)
Lottery win $t-1$		
Self	0.000	−0.001
	(0.009)	(0.013)
Spouse	−0.002	−0.004
	(0.010)	(0.012)
Lottery win $t-2$		
Self	−0.011	−0.027**
	(0.009)	(0.013)
Spouse	−0.016	−0.016
	(0.011)	(0.011)
Number of observations	7181	7181
Number of households	1799	1799
R-squared	0.105	0.136

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged LFP for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A2 | Labor force participation and lottery win amounts.

	Male	Female
Dependent variable: LFP		
Small lottery win t		
Self	−0.009	0.030**
	(0.009)	(0.013)
Spouse	0.010	0.003
	(0.011)	(0.012)

(Continues)

TABLE A2 | (Continued)

	Male	Female
Medium lottery win t		
Self	−0.014	−0.069
	(0.015)	(0.096)
Spouse	0.027	0.031
	(0.062)	(0.054)
Large lottery win t		
Self	−0.053	0.025
	(0.050)	(0.055)
Spouse	−0.014	0.001
	(0.062)	(0.040)
Small lottery win $t-1$		
Self	0.002	0.002
	(0.009)	(0.013)
Spouse	−0.005	−0.008
	(0.010)	(0.012)
Medium lottery win $t-1$		
Self	−0.021	−0.108
	(0.018)	(0.093)
Spouse	0.089	0.055
	(0.059)	(0.082)
Large lottery win $t-1$		
Self	−0.052	−0.049
	(0.048)	(0.050)
Spouse	0.046**	0.066*
	(0.020)	(0.036)
Small lottery win $t-2$		
Self	−0.010	−0.028**
	(0.010)	(0.014)
Spouse	−0.018*	−0.013
	(0.011)	(0.011)
Medium lottery win $t-2$		
Self	−0.037	0.093*
	(0.025)	(0.050)
Spouse	0.066	−0.022
	(0.083)	(0.055)
Large lottery win $t-2$		
Self	−0.050	0.032
	(0.053)	(0.044)
Spouse	0.024	−0.126
	(0.024)	(0.078)

(Continues)

TABLE A2 | (Continued)

	Male	Female
Number of observations	7181	7181
Number of households	1799	1799
R-squared	0.106	0.139

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged LFP for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A3 | Labor force participation and lottery win amounts scaled by past household income.

	Male	Female
Dependent variable: LFP		
Lottery win amount t/Past household income $t-1$		
Self	−0.173	−0.002
	(0.169)	(0.010)
Spouse	−0.006	−0.193
	(0.012)	(0.460)
Lottery win amount $t-1$/Past household income $t-2$		
Self	−0.060	−0.000
	(0.217)	(0.017)
Spouse	0.004	0.370
	(0.007)	(0.334)
Lottery win amount $t-2$/Past household income $t-3$		
Self	−0.176	0.026*
	(0.147)	(0.014)
Spouse	0.014	−0.019
	(0.011)	(0.690)
Number of observations	5157	5157
Number of households	1384	1384
R-squared	0.080	0.093

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged LFP for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A4 | Additional checks: Full-time status and lottery wins.

	Male	Female
Dependent variable: Full-time status		
Lottery win t		
Self	−0.001	0.015
	(0.006)	(0.024)
Spouse	0.014*	−0.023
	(0.008)	(0.018)
Lottery win $t-1$		
Self	0.012	−0.005
	(0.008)	(0.026)
Spouse	−0.004	−0.027
	(0.010)	(0.019)
Lottery win $t-2$		
Self	0.004	−0.010
	(0.006)	(0.021)
Spouse	0.000	−0.015
	(0.006)	(0.022)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.092	0.088

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged full-time status for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A5 | Additional checks: Full-time status and lottery win amounts.

	Male	Female
Dependent variable: Full-time status		
Small lottery win t		
Self	0.000	0.013
	(0.007)	(0.024)
Spouse	0.013*	−0.029
	(0.008)	(0.018)
Medium lottery win t		
Self	−0.009	0.279***
	(0.017)	(0.080)
Spouse	0.063	0.051
	(0.041)	(0.070)
Large lottery win t		
Self	−0.015	−0.030
	(0.010)	(0.079)
Spouse	0.035	0.067
	(0.022)	(0.041)

(Continues)

TABLE A5 | (Continued)

	Male	Female
Small lottery win $t-1$		
Self	0.012	−0.003
	(0.008)	(0.027)
Spouse	0.001	−0.031
	(0.009)	(0.019)
Medium lottery win $t-1$		
Self	0.009	−0.213
	(0.011)	(0.212)
Spouse	0.008	0.095
	(0.013)	(0.070)
Large lottery win $t-1$		
Self	0.026	−0.008
	(0.017)	(0.094)
Spouse	−0.190	0.009
	(0.130)	(0.052)
Small lottery win $t-2$		
Self	0.004	−0.010
	(0.007)	(0.021)
Spouse	0.002	−0.009
	(0.006)	(0.023)
Medium lottery win $t-2$		
Self	0.014	0.034
	(0.010)	(0.106)
Spouse	0.008	−0.177*
	(0.013)	(0.100)
Large lottery win $t-2$		
Self	0.012	−0.054
	(0.013)	(0.077)
Spouse	−0.127	−0.093
	(0.097)	(0.063)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.101	0.092

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged full-time status for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A6 | Additional checks: Full-time status and lottery win amounts scaled by past household income.

	Male	Female
Dependent variable: Full-time status		
Lottery win amount t/Past household income $t-1$		
Self	0.043	−0.019*

(Continues)

TABLE A6 | (Continued)

	Male	Female
	(0.162)	(0.011)
Spouse	0.033	0.276
	(0.043)	(0.370)
Lottery win amount $t-1$/Past household income $t-2$		
Self	0.174	−0.018
	(0.136)	(0.015)
Spouse	−0.014	0.151
	(0.028)	(0.863)
Lottery win amount $t-2$/Past household income $t-3$		
Self	0.288*	−0.029
	(0.148)	(0.018)
Spouse	−0.011	−1.454
	(0.018)	(1.089)
Number of observations	2572	2572
Number of households	781	781
R-squared	0.086	0.076

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged full-time status for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A7 | SUR estimates on lottery wins.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−10.304	17.542
	(11.391)	(12.913)
Spouse	7.160	−31.834***
	(12.969)	(11.342)
Lottery win $t-1$		
Self	8.851	5.195
	(11.032)	(12.566)
Spouse	−22.579*	−10.933
	(12.612)	(10.973)
Lottery win $t-2$		
Self	4.384	−21.485*
	(10.715)	(12.390)
Spouse	0.804	6.063
	(12.439)	(10.650)

(Continues)

TABLE A7 | (Continued)

	Male	Female
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.632	0.787

Note: All specifications include controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Standard errors in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A8 | SUR estimates on lottery win amounts.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−7.857	18.355
	(11.658)	(13.151)
Spouse	6.520	−35.343***
	(13.207)	(11.605)
Medium lottery win t		
Self	−32.573	1.799
	(74.035)	(158.570)
Spouse	−20.828	−5.680
	(159.406)	(73.664)
Large lottery win t		
Self	−47.862	−23.589
	(47.907)	(60.011)
Spouse	15.894	40.670
	(60.285)	(47.681)
Small lottery win $t-1$		
Self	9.541	5.274
	(11.237)	(12.804)
Spouse	−17.713	−9.963
	(12.852)	(11.178)
Medium lottery win $t-1$		
Self	14.450	−94.577
	(75.725)	(95.933)
Spouse	−27.244	−89.120
	(96.329)	(75.349)
Large lottery win $t-1$		
Self	−3.101	9.165
	(52.923)	(62.623)

(Continues)

TABLE A8 | (Continued)

	Male	Female
Spouse	−146.752**	5.031
	(62.932)	(52.686)
Small lottery win $t-2$		
Self	2.504	−22.383*
	(10.924)	(12.598)
Spouse	−1.536	7.849
	(12.648)	(10.860)
Medium lottery win $t-2$		
Self	53.729	47.242
	(59.200)	(88.123)
Spouse	2.126	−20.906
	(88.546)	(58.931)
Large lottery win $t-2$		
Self	24.868	1.838
	(58.794)	(71.375)
Spouse	69.338	−58.816
	(71.710)	(58.537)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.633	0.787

Note: All specifications include controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Standard errors in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A9 | SUR estimates on lottery win amounts scaled by past household income.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−456.853	−12.758
	(509.265)	(67.609)
Spouse	7.341	358.608
	(69.582)	(494.889)
Lottery win amount $t-1$/Past household income $t-2$		
Self	−24.793	−12.634
	(675.334)	(67.722)
Spouse	−38.912	−507.547
	(69.706)	(656.152)
Lottery win amount $t-2$/Past household income $t-3$		
Self	100.942	−18.153
	(995.864)	(67.680)
Spouse	−28.681	−852.651
	(69.664)	(967.444)
Number of observations	2572	2572

(Continues)

TABLE A9 | (Continued)

	Male	Female
Number of households	781	781
R-squared	0.618	0.801

Note: All specifications include controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A10 | Estimates on lottery wins including individuals over 65.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−12.740	8.897
	(10.645)	(15.410)
Spouse	24.087*	−27.188**
	(12.535)	(13.075)
Lottery win $t-1$		
Self	4.522	15.321
	(13.210)	(16.272)
Spouse	−4.781	−29.241**
	(13.954)	(14.436)
Lottery win $t-2$		
Self	4.264	2.169
	(10.676)	(13.950)
Spouse	−2.672	4.473
	(13.110)	(14.415)
Number of observations	3812	3812
Number of households	1076	1076
R-squared	0.157	0.280

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A11 | Estimates on lottery win amounts including individuals over 65.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−10.928	11.249
	(10.699)	(16.138)

(Continues)

TABLE A11 | (Continued)

	Male	Female
Spouse	19.887	−31.419**
	(12.205)	(13.259)
Medium lottery win t		
Self	−74.538	38.029
	(79.531)	(76.665)
Spouse	73.966	43.952
	(49.200)	(35.208)
Large lottery win t		
Self	−31.167	−68.995
	(35.551)	(60.683)
Spouse	137.840*	71.764
	(80.873)	(61.497)
Small lottery win $t-1$		
Self	3.181	21.006
	(13.440)	(16.793)
Spouse	−2.880	−30.525**
	(14.137)	(15.004)
Medium lottery win $t-1$		
Self	2.652	−95.378
	(39.715)	(149.214)
Spouse	40.961	−9.312
	(35.181)	(29.415)
Large lottery win $t-1$		
Self	47.879	−156.337***
	(30.782)	(58.119)
Spouse	−74.758	32.338
	(94.302)	(47.885)
Small lottery win $t-2$		
Self	4.358	4.034
	(11.192)	(14.018)
Spouse	−3.959	5.227
	(12.939)	(15.093)
Medium lottery win $t-2$		
Self	−20.566	65.094
	(50.422)	(62.636)
Spouse	40.978	13.057
	(29.810)	(37.840)
Large lottery win $t-2$		
Self	42.966	−151.859**
	(34.254)	(59.737)
Spouse	8.956	4.625
	(108.176)	(51.291)
Number of observations	3812	3812
Number of households	1.076	1076
R-squared	0.160	0.284

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A12 | Estimates on lottery win amounts scaled by past household income including individuals over 65.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−446.668**	−52.273*
	(216.068)	(29.349)
Spouse	43.669	575.254
	(58.666)	(491.050)
Lottery win amount $t-1$/Past household income $t-2$		
Self	311.009	−56.962*
	(515.231)	(31.710)
Spouse	6.415	−296.419
	(11.721)	(727.327)
Lottery win amount $t-2$/Past household income $t-3$		
Self	293.010	−84.192**
	(341.008)	(35.907)
Spouse	−16.385	−557.613
	(15.731)	(815.238)
Number of observations	2590	2590
Number of households	785	785
R-squared	0.193	0.286

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A13 | Estimates on lottery wins omitting the self-employed.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−6.470	2.247
	(8.967)	(15.658)

(Continues)

TABLE A13 | (Continued)

	Male	Female
Spouse	24.188*	−29.008**
	(13.075)	(13.767)
Lottery win $t-1$		
Self	15.274	7.498
	(12.172)	(16.543)
Spouse	−3.491	−29.247*
	(12.076)	(15.897)
Lottery win $t-2$		
Self	10.042	−0.958
	(10.230)	(13.794)
Spouse	−5.370	7.863
	(11.974)	(14.910)
Number of observations	3538	3538
Number of households	984	984
R-squared	0.122	0.278

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A14 | Estimates on lottery win amounts omitting the self-employed.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−3.864	2.658
	(8.948)	(16.099)
Spouse	17.595	−34.351**
	(12.805)	(14.106)
Medium lottery win t		
Self	−99.700	29.963
	(79.978)	(86.635)
Spouse	85.402*	67.313*
	(49.858)	(37.301)
Large lottery win t		
Self	−35.244	−19.782
	(36.530)	(60.631)
Spouse	179.421**	75.493
	(71.396)	(67.429)
Small lottery win $t-1$		
Self	14.541	11.863
	(12.305)	(16.947)
Spouse	−2.790	−31.522*
	(11.896)	(16.338)

(Continues)

TABLE A14 | (Continued)

	Male	Female
Medium lottery win $t-1$		
Self	20.376	−105.440
	(34.774)	(150.357)
Spouse	47.189	−24.039
	(34.276)	(25.288)
Large lottery win $t-1$		
Self	39.106	−112.675**
	(26.944)	(55.273)
Spouse	−52.684	55.916
	(119.032)	(50.664)
Small lottery win $t-2$		
Self	11.013	2.415
	(10.624)	(13.991)
Spouse	−5.110	7.625
	(11.770)	(15.495)
Medium lottery win $t-2$		
Self	−54.781	59.800
	(56.070)	(57.361)
Spouse	43.668	9.485
	(31.903)	(36.862)
Large lottery win $t-2$		
Self	55.682	−170.265**
	(41.654)	(78.909)
Spouse	−21.698	23.235
	(127.878)	(57.006)
Number of observations	3538	3538
Number of households	984	984
R-squared	0.127	0.282

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A15 | Estimates on lottery win amounts scaled by past household income omitting the self-employed.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−531.475***	−29.440***
	(155.831)	(8.249)
Spouse	37.174	495.908
	(47.598)	(458.302)
Lottery win amount $t-1$/Past household income $t-2$		
Self	389.327	−36.535***
	(472.986)	(9.601)

(Continues)

TABLE A15 | (Continued)

	Male	Female
Spouse	2.587	77.872
	(19.429)	(646.281)
Lottery win amount $t-2$/Past household income $t-3$		
Self	112.165	−61.016***
	(287.982)	(15.618)
Spouse	−25.388	−272.472
	(27.951)	(757.945)
Number of observations	2423	2423
Number of households	728	728
R-squared	0.176	0.270

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A16 | Estimates on lottery wins including self-reported health status of both spouses.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−18.582*	23.533
	(10.913)	(15.334)
Spouse	39.511**	−49.880***
	(17.730)	(18.940)
Lottery win $t-1$		
Self	−0.135	−3.023
	(12.275)	(18.849)
Spouse	5.233	−40.888***
	(16.216)	(15.458)
Lottery win $t-2$		
Self	14.110	−8.318
	(11.219)	(18.026)
Spouse	−7.866	8.358
	(14.979)	(16.433)
Male: Good health	−3.960	3.171
	(13.046)	(11.904)
Female: Good health	−14.697	2.483
	(11.781)	(12.877)
Number of observations	2876	2876

(Continues)

TABLE A16 | (Continued)

	Male	Female
Number of households	900	900
R-squared	0.155	0.259

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A17 | Estimates on lottery win amounts including self-reported health status.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−18.860*	25.616
	(10.689)	(15.790)
Spouse	35.175**	−55.499***
	(17.462)	(18.936)
Medium lottery win t		
Self	−106.339	62.691
	(117.060)	(90.464)
Spouse	67.332	3.748
	(53.080)	(43.343)
Large lottery win t		
Self	−8.607	−53.344
	(34.897)	(101.722)
Spouse	160.316*	63.549
	(90.200)	(71.323)
Small lottery win $t-1$		
Self	−3.321	0.691
	(12.674)	(20.523)
Spouse	5.725	−41.109**
	(16.793)	(16.018)
Medium lottery win $t-1$		
Self	−26.939	19.623
	(57.527)	(53.137)
Spouse	16.394	−29.143
	(38.399)	(35.423)
Large lottery win $t-1$		
Self	56.380*	−153.570
	(30.625)	(121.317)

(Continues)

TABLE A17 | (Continued)

	Male	Female
Spouse	47.856	18.925
	(88.704)	(59.001)
Small lottery win $t-2$		
Self	15.520	−6.228
	(12.202)	(18.129)
Spouse	−11.448	9.922
	(15.175)	(17.754)
Medium lottery win $t-2$		
Self	−107.382**	23.985
	(51.309)	(78.332)
Spouse	34.182	25.037
	(43.407)	(46.030)
Large lottery win $t-2$		
Self	53.377*	−142.645
	(30.295)	(96.564)
Spouse	104.997	1.414
	(83.798)	(52.953)
Male: Good health	−5.603	2.923
	(13.157)	(11.875)
Female: Good health	−15.290	2.517
	(11.875)	(13.012)
Number of observations	2876	2876
Number of households	900	900
R-squared	0.160	0.263

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A18 | Estimates on lottery win amounts scaled by past household income including self-reported health status.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−393.872*	−1913.471
	(202.025)	(1574.181)
Spouse	794.096	599.057
	(1005.042)	(483.165)
Lottery win amount $t-1$/Past household income $t-2$		
Self	649.966	−1921.681
	(455.775)	(1575.297)
Spouse	809.783	−296.569
	(1003.548)	(847.868)

(Continues)

TABLE A18 | (Continued)

	Male	Female
Lottery win amount $t-2$/Past household income $t-3$		
Self	384.797	−1952.318
	(276.850)	(1575.438)
Spouse	791.801	−274.711
	(1000.597)	(813.406)
Male: Good health	0.363	14.308
	(16.935)	(12.395)
Female: Good health	−4.739	13.186
	(15.585)	(13.059)
Number of observations	1910	1910
Number of households	649	649
R-squared	0.212	0.257

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A19 | Placebo test: random variable for lottery wins.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	1.886	15.320
	(9.248)	(10.046)
Spouse	1.491	−1.114
	(10.450)	(9.756)
Lottery win $t-1$		
Self	11.914	−6.117
	(8.664)	(11.821)
Spouse	−2.153	−3.199
	(9.849)	(10.290)
Lottery win $t-2$		
Self	−3.834	0.326
	(9.796)	(10.838)
Spouse	−16.276	−5.221
	(11.744)	(10.451)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.152	0.279

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A20 | Placebo test: future lottery wins.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win $t + 1$		
Self	−13.602	−38.046
	(9.096)	(24.504)
Spouse	23.296	7.084
	(15.029)	(16.840)
Lottery win $t + 2$		
Self	−1.579	−1.021
	(12.926)	(23.310)
Spouse	6.643	8.334
	(14.957)	(17.835)
Number of observations	3786	3786
Number of households	1069	1069
R-squared	0.117	0.110

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t) and household wealth (in t). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A21 | Estimates on lottery wins restricting to households who reported at least one lottery win.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−15.267	11.666
	(9.621)	(15.139)
Spouse	21.243*	−25.989*
	(12.529)	(13.365)
Lottery win $t - 1$		
Self	3.539	14.179
	(12.368)	(16.664)
Spouse	−10.314	−29.841**
	(12.652)	(14.975)
Lottery win $t - 2$		
Self	5.535	−0.946
	(9.921)	(13.828)
Spouse	−6.698	4.635
	(11.921)	(14.323)

(Continues)

TABLE A21 | (Continued)

	Male	Female
Number of observations	2174	2174
Number of households	564	564
R-squared	0.148	0.278

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t - 1$, $t - 2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t - 1$, $t - 2$), household wealth (in t, $t - 1$, $t - 2$) and lagged annual hours of work for both spouses ($t - 1$, $t - 2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A22 | Estimates on lottery win amounts restricting to households who reported at least one lottery win.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−14.003	13.148
	(9.631)	(15.869)
Spouse	16.907	−31.022**
	(12.147)	(13.597)
Medium lottery win t		
Self	−65.770	42.174
	(73.951)	(86.707)
Spouse	67.853	47.058
	(54.532)	(34.714)
Large lottery win t		
Self	−26.535	−36.634
	(34.029)	(60.059)
Spouse	126.783	86.739
	(84.644)	(61.357)
Small lottery win $t - 1$		
Self	2.764	18.517
	(12.529)	(17.300)
Spouse	−7.676	−32.545**
	(12.737)	(15.505)
Medium lottery win $t - 1$		
Self	−5.208	−83.328
	(39.961)	(146.349)
Spouse	34.931	11.526
	(33.036)	(32.568)

(Continues)

TABLE A22 | (Continued)

	Male	Female
Large lottery win $t-1$		
Self	38.647	−104.385*
	(33.282)	(57.653)
Spouse	−108.910	48.213
	(107.297)	(48.120)
Small lottery win $t-2$		
Self	6.340	0.891
	(10.333)	(13.883)
Spouse	−6.933	5.401
	(11.625)	(14.956)
Medium lottery win $t-2$		
Self	−30.486	54.012
	(51.202)	(56.732)
Spouse	29.354	12.633
	(25.663)	(43.781)
Large lottery win $t-2$		
Self	37.391	−118.914*
	(35.268)	(61.436)
Spouse	−34.684	4.733
	(124.941)	(50.559)
Number of observations	2174	2174
Number of households	564	564
R-squared	0.153	0.283

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A23 | Estimates on lottery win amounts scaled by past household income restricting to households who reported at least one lottery win.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−441.733*	−30.995***
	(237.802)	(10.550)
Spouse	25.364	654.779
	(49.455)	(494.940)
Lottery win amount $t-1$/Past household income $t-2$		
Self	200.064	−40.497***
	(474.094)	(13.248)
Spouse	−12.930	−139.872
	(20.874)	(794.679)
Lottery win amount $t-2$/Past household income $t-3$		
Self	147.693	−71.961***
	(310.280)	(19.157)
Spouse	−32.703	−639.512
	(32.782)	(854.501)
Number of observations	1520	1520
Number of households	429	429
R-squared	0.187	0.275

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A24 | Estimates on lottery wins in the matched sample.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win t		
Self	−43.663***	6.784
	(12.987)	(16.010)
Spouse	26.704*	−18.108
	(14.828)	(15.296)
Lottery win $t-1$		
Self	27.318*	0.910
	(14.363)	(16.343)
Spouse	−29.276**	−27.468*
	(14.418)	(15.539)
Lottery win $t-2$		
Self	7.552	16.754
	(12.439)	(16.541)
Spouse	−21.049	−0.405
	(13.797)	(16.121)
Number of observations	1993	1993
Number of households	671	671
R-squared	0.208	0.310

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A25 | Estimates on lottery win amounts in the matched sample.

	Male	Female
Dependent variable: Annual hours of work		
Small lottery win t		
Self	−41.335***	11.741
	(13.582)	(16.858)
Spouse	23.884	−23.732
	(14.836)	(15.696)
Medium lottery win t		
Self	−74.191	−35.796
	(54.854)	(63.698)
Spouse	30.812	90.246*
	(47.799)	(46.403)
Large lottery win t		
Self	−68.959**	−90.987
	(32.084)	(68.662)
Spouse	89.631	124.380
	(96.893)	(76.950)
Small lottery win $t-1$		
Self	26.395*	2.742
	(14.662)	(17.577)
Spouse	−26.002*	−26.668
	(14.649)	(16.307)
Medium lottery win $t-1$		
Self	94.152	—
	(67.116)	
Spouse	—	16.555
		(38.548)
Large lottery win $t-1$		
Self	0.965	−141.753**
	(23.086)	(63.137)
Spouse	−119.808	28.069
	(87.616)	(53.428)
Small lottery win $t-2$		
Self	8.805	20.762
	(12.846)	(16.759)
Spouse	−20.324	2.570
	(13.612)	(17.104)
Medium lottery win $t-2$		
Self	22.009	98.113
	(44.728)	(82.356)
Spouse	60.619**	−2.715
	(30.229)	(56.580)
Large lottery win $t-2$		
Self	−8.318	−202.841***
	(20.479)	(48.748)
Spouse	−102.894	−15.665
	(111.960)	(42.975)
Number of observations	1993	1993
Number of households	671	671
R-squared	0.211	0.319

Note: All specifications include individual fixed effects, and controls for wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

TABLE A26 | Estimates on lottery win amounts scaled by past household income in the matched sample.

	Male	Female
Dependent variable: Annual hours of work		
Lottery win amount t/Past household income $t-1$		
Self	−508.546**	−32.911***
	(237.703)	(10.228)
Spouse	36.012	607.613
	(47.116)	(500.389)
Lottery win amount $t-1$/Past household income $t-2$		
Self	110.214	−41.002***
	(467.785)	(12.066)
Spouse	−4.876	−122.025
	(20.736)	(725.351)
Lottery win amount $t-2$/Past household income $t-3$		
Self	80.461	−62.438***
	(344.925)	(15.017)
Spouse	−26.465	−641.234
	(29.905)	(862.979)
Number of observations	1993	1993
Number of households	671	671
R-squared	0.195	0.308

Note: All specifications include individual fixed effects, and controls for predicted wages of both spouses (in t, $t-1$, $t-2$), age and age squared, self-employment status, marital status, household size, number of children, household non-labor income (in t, $t-1$, $t-2$), household wealth (in t, $t-1$, $t-2$) and lagged annual hours of work for both spouses ($t-1$, $t-2$). Robust standard errors, clustered at the household level, are reported in parentheses. Each regression also includes time and regional dummies.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.