The Opposing Effects of Wealth on Younger and Older Entrepreneurs

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Abstract

Using wealth windfalls from lottery winnings and matched employer-employee tax files, we compare the effect of additional wealth on the entrepreneurial activity of older and younger individuals. We find that additional wealth leads older winners (aged 55 to 64) to reduce business ownership, which is consistent with using the wealth shock to finance retirement. In contrast, additional wealth leads younger winners (aged 21 to 54) to increase business ownership. The firms the old exit have higher growth potential (because they are incorporated), and higher business growth, than the firms that the young enter, which has negative implications for the economy.

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1 Introduction

Both wealth and business owner's age are important for entrepreneurship. Wealth increases business ownership and performance through relaxing financial constraints on entrepreneurs.[1] Age also affects entrepreneurship in that entrepreneurship rates increase and then decline over the life cycle.[2] However, it is unclear how wealth and age interact to affect business ownership and growth. On the one hand, additional wealth may generate more entrepreneurship if it helps younger individuals to start their businesses earlier in life and allows older individuals to maintain their business ownership for longer. On the other hand, additional wealth may not affect younger entrepreneurs, if their financial constraints are not binding, and could actually cause reduction in entrepreneurial activity, if it allows older entrepreneurs to finance their exit from entrepreneurship into retirement. In this paper, we provide evidence on these conflicting predictions by examining the effects of wealth on younger and older individuals' business ownership, business growth and scale.

Our main motivation in studying the interaction of wealth and age on entrepreneurial activity is that the population is aging in many countries. Population aging has a negative effect on economic growth and productivity (e.g., Maestas et al., 2023), and it may decrease business formation (Liang et al., 2018). In addition, on average, wealth, which plays a key role in entrepreneurship (Bellon et al., 2021, Bernstein et al., 2022), is concentrated among older individuals. Increases in wealth (e.g., stemming from the stock market or house prices) may reduce business ownership incentives of older entrepreneurs, if the wealth shock increases the incentive to exit into retirement. For these reasons, it is important to understand how wealth interacts with age in determining entrepreneurial outcomes.

To examine these questions, we use comprehensive matched employer-employee tax record data and variation in lottery prize amounts as a plausibly exogenous increase in individuals' wealth. The lottery data consist of all lottery wins over $1,000 from 2004 to 2021, provided by the

[1] A variety of exogenous sources of wealth have been examined in providing evidence consistent with financial constraints on entrepreneurs. These sources include: (1) lottery wins (e.g., Lindh and Ohlsson, 1996, Taylor, 2001, McKenzie, 2017, Cesarini et al., 2017, Cespedes et al., 2023, Golosov et al., 2024); (2) inheritance (e.g., Hurst and Lusardi, 2004, Cagetti and De Nardi, 2006, Andersen and Nielsen, 2012); (3) natural resource windfalls (e.g., Bellon et al., 2021, Bernstein et al., 2022); (4) real estate and housing wealth (Hurst and Lusardi, 2004, Adelino et al., 2015, Corradin and Popov, 2015, Schmalz et al., 2017, Bahaj et al., 2020); and (5) changes to the availability of credit (Black and Strahan, 2002, Kerr and Nanda, 2009, Chatterji and Seamans, 2012, Bos et al., 2018, Krishnan and Wang, 2019, Dobbie et al., 2020, Herkenhoff et al., 2021).

[2] For example, Bernstein et al. (2022), Azoulay et al. (2020), Hincapié (2020), Liang et al. (2018), Gendron-Carrier (2025).

lottery corporation of a Canadian province.[3] For each of these lottery wins, we match the lottery winners to their tax-based administrative data, which include an employer-employee matched dataset. These administrative data provide us with an annual window into each lottery winner's economic decisions: whether they choose to enter or exit business ownership, how their businesses grow, how much labor supply they provide (as measured by wage income), and whether they choose to exit wage labor. Following much of the literature (e.g., Schmalz et al., 2017, Bellon et al., 2021, Herkenhoff et al., 2021), we study all businesses because they are representative of the overall economy, not only those "superstar" firms that have an IPO or receive a patent. Combining the lottery winnings information with the administrative data, we implement a stacked difference-in-differences (DID) empirical methodology to assess the relative effects on individuals' economic decisions of an additional dollar of wealth.

Our main finding is that additional wealth (from lottery prizes) leads older individuals (aged 55 to 64 on the date of the lottery win) to reduce both business ownership and the growth of their businesses. We find that an increase in wealth to older individuals significantly reduces their ownership of incorporated firms. We also document that extra wealth does not affect the ownership of unincorporated firms by older individuals. Incorporated firms are often used as a proxy for businesses with higher growth potential (Levine and Rubinstein, 2017, Jones and Pratap, 2020), while unincorporated firms are often used as a proxy for businesses with lower growth potential (e.g. entrepreneurs looking for non-pecuniary benefits rather than profit and growth maximization). Thus our results, showing that additional wealth motivates older individuals to reduce the ownership of incorporated (i.e. higher-growth potential) firms, imply a larger negative effect on economic growth.

In contrast to our findings on older individuals, younger individuals (age 21 to 54 on the date of the lottery win) increase their entrepreneurial activities with extra wealth. These younger individuals significantly increase their ownership of both higher-growth-potential incorporated firms, as well as less growth-oriented unincorporated businesses. Comparing the effect of extra wealth on the business ownership decisions of younger and older individuals, we find that additional wealth has opposing effects for these two groups. While extra wealth allows younger individuals to increase business ownership, older winners reduce their business participation, especially in more growth-oriented incorporated firms.

[3] Lottery prizes have also been used to examine the effect of wealth increases on outcomes such as labor supply (e.g., Imbens et al., 2001, Cesarini et al., 2017, Golosov et al., 2024), stock market participation (Briggs et al., 2021), bankruptcy filing (Hankins et al., 2011), and many others.

An important element of business ownership is the extent of equity shares that an individual owns in that firm. We thus examine how extra wealth affects the equity share in incorporated firms among older and younger individuals. This dimension is important because it shows the extent to which individuals invest into or divest from their firms following a cash windfall. Using our rich data on the equity shares held in corporations by each individual, we document that an increase in wealth to an older business owner will reduce their equity share in incorporated firms. We also find that these effects arise from older owners selling or closing their businesses completely (i.e., on the extensive margin) as well as reducing their shares in corporations they still own (i.e., on the intensive margin).

In contrast to older individuals, younger owners increase their overall equity share in incorporated firms with additional wealth. This effect comes from the extensive margin (buying existing corporations or starting new corporations) and not the intensive margin (increasing equity share in a business they already own). Thus, as with our previous results, additional wealth motivates younger and older individuals to adjust their corporate ownership position in the exact opposite directions, as measured by equity shares owned.

We also examine whether the reduction in business ownership among older individuals is temporary or long-term. This question is important because a long-term exit from business ownership has a larger effect on the economy. Defining long-term exit as having no business ownership for five years, we find that extra wealth to older individuals increases long-term exit from incorporated business ownership, but it has no significant effect on unincorporated firm ownership. These findings for older individuals imply that their reduction in incorporated business ownership is a long-term change, not a transitory effect. Combining these results with our finding of a positive effect of additional wealth on exit from wage labor in this group, we show that additional wealth induces older winners to exit both business and wage labor markets. The long term exit by older individuals from all kinds of work (both entrepreneurial activity as well as wage labor markets) can be taken to constitute retirement, thus our evidence shows that extra wealth causes older individuals to transition into retirement.

Focusing on long-term outcomes of younger individuals, we find that additional wealth does not increase exits from incorporated and unincorporated business ownership in this group. However, extra wealth does increase long-term exit from wage labor among younger individuals. Combining these results with our earlier findings that younger individuals increase their ownership of incorporated and unincorporated firms, we can infer that, with additional wealth, younger

individuals reduce their wage labor supply and transition into business ownership. In addition, this effect is long-term.

While business ownership has a first-order effect on the economy, it is also important to understand how wealth affects the growth of the businesses themselves (i.e., using data on various business level outcomes). Thus, we use data on business outcomes of incorporated and unincorporated firms to measure how the businesses change when their owners receive additional wealth. When examining their incorporated businesses, we find that additional wealth to an older business owner reduces total sales, revenues, and expenses. Thus, extra wealth leads not only to declines in incorporated firm ownership (extensive margin), but also to negative business growth (intensive margin) in this group. In addition, we document a small decline in net self-employment income (i.e., profits) among older unincorporated business owners in response to extra wealth.

For younger individuals, on the other hand, we find no effect of extra wealth on the growth of their incorporated businesses. For unincorporated firms, however, additional wealth increases net self-employment income (profits) for younger winners. A wealth windfall also increases the probability of reporting income (revenue) and net income (profit) among their unincorporated businesses. Comparing the effects of additional wealth on business growth of younger and older individuals, we again find that wealth has opposing effects based on age. Younger individuals increase business growth (in particular, unincorporated businesses) with their additional wealth and older winners shrink their businesses (in particular, incorporated firms).

Overall, we find that additional wealth reduces entrepreneurial activity of older individuals along all dimensions we consider. With extra wealth, these individuals are less likely to remain business owners, they exit business ownership and wage labor in a long run, their still remaining firms show negative business growth, and they reduce equity share in their corporations. In contrast, wealth windfalls to younger individuals increase their entrepreneurial activity in many dimensions. These individuals use extra wealth to transition from wage labor to business ownership, they increase the growth of unincorporated firms, and increase their equity share in corporations.

Our study contributes to a literature on the effect of age on entrepreneurship. This literature documents a hump shape in entrepreneurship rates over the life cycle (e.g., Bernstein et al., 2022, Azoulay et al., 2020, Hincapié, 2020, Liang et al., 2018, Gendron-Carrier, 2025). The main contribution of our paper relative to this existing literature is that we can isolate the additional effect of an exogenous wealth windfall on this life cycle profile. Our main finding that a wealth windfall

leads older individuals to exit from entrepreneurship thus implies that those older individuals who receive additional wealth will exit entrepreneurship at a higher rate compared with older individuals who do not receive a wealth windfall. Similarly, our results imply that younger individuals who receive additional wealth will enter entrepreneurship at a higher rate compared with younger individuals who do not receive a wealth windfall.

Our paper is also related to the literature on financial constraints as a barrier to entry into entrepreneurship. This literature typically examines how some measure of entrepreneurship increases in response to an event relaxing financial constraints (see footnote 1). This literature overwhelmingly shows that an exogenous wealth shock causes an increase in entrepreneurial activity, which supports the conclusion that the entrepreneur was financially constrained. While our findings for younger lottery winners are consistent with this literature, our main new finding, that a wealth windfall from a lottery win causes older entrepreneurs to exit from entrepreneurship into retirement is thus in the exact opposite direction compared to this existing literature.

While a large literature documents that wealth shocks will generate more entrepreneurial activity, a related but different literature documents that wealth shocks will generate exit from wage work into retirement by older wage employees[4]. It is not a priori obvious, which of these two opposing effects dominate for older entrepreneurs, i.e. whether an older entrepreneur will select to use an income shock to increase her entrepreneurial activities, or alternatively to select to exit into retirement. The aim of this paper is to provide new empirical evidence on this tradeoff. [5]

We also contribute to the literature on entrepreneurship that examines the relationships between wage labor and entrepreneurial labor [6]. This literature examines the transition from wage labor to entrepreneurial labor (and vice versa), and also the various tradeoffs between selecting into either wage labor or entrepreneurial labor. We add to this literature by comparing how additional wealth alters transitions from wage labor to entrepreneurship between older and younger individuals. We also provide new evidence on how additional wealth may lead to exit from both wage labor and entrepreneurship and generate a transition into retirement.

[4] Hurd et al. (2009), Brown et al. (2010), Gelber et al. (2016), Cesarini et al. (2017), Zhao and Burge (2017), Disney and Gathergood (2018), Golosov et al. (2024)

[5] While there is little existing reduced form evidence on the choice we examine (whether older entrepreneurs invest in their business, or choose to exit into retirement), this choice, however, is an important part of the structural life cycle models of Cagetti and De Nardi (2006, 2009). These life cycle models compare the entry and exit choices of older and younger entrepreneurs in the context of financial constraints (Cagetti and De Nardi, 2006) and estate taxes (Cagetti and De Nardi, 2009).

[6] Gompers et al. (2005), Babina (2020), Hacamo and Kleiner (2022), Catherine (2022)

2 Data and Descriptive Statistics

Our paper uses two main administrative data sources to study the effects of windfall gains from lotteries on individuals' entrepreneurial decisions. First, we use administrative data on lottery wins from a single Canadian province.[7] Second, we match these lottery data to Statistics Canada's Canadian Employer-Employee Dynamics Database (CEEDD), which contains employer-employee matched administrative tax records data. We detail both data sources below, as well as the matching procedure and the final sample used in the analysis. Appendix Table A1 lists all the variables used in the analysis, their definitions, and the source of data used to construct them.

2.1 Lottery Data

We use lottery data from 2004 to 2021 from one anonymous Canadian province that cover all lottery winners with prizes larger than or equal to $1,000. Similar to other studies with lottery data, small prizes of less than $1,000 are not tracked by the lottery organization and not included in the study. This provincial lottery organization, which administers all lottery products in this province, provided us with these data under the condition that we do not disclose its name or the name of the province. For each lottery prize, the raw lottery data include winners' first and last names, six-character postal codes, the exact date of the lottery payout, the exact dollar value of each prize, and the type of lottery product. These data are recorded by the lottery organization at the time of the prize payout. We provided this lottery winner data to Statistics Canada, which then undertook the matching process whereby the lottery winner data was matched to administrative tax records. Given the highly confidential nature of tax filings and to preserve the privacy of the individuals and businesses in our study, after the matching process, Statistics Canada removed names, postal codes, and all personal identifiers of the individuals and businesses in our study.

Our setting allows us to precisely identify the amount won, directly from the lottery corporation, and link it to winners' administrative data on labor and business outcomes. All lottery wins are tax-free in Canada, and all payments are made as lump-sum in our data, with no lottery wins paid out as installments.[8] For prizes with multiple winners (e.g., two individuals on a winning

[7] A previous vintage of the lottery data has been used in Agarwal et al. (2020) to study the effects of lottery wins on winners' neighbors, including their debt, financial distress, and consumption choices.

[8] A small fraction of lotteries from the original data could have up to two prizes (e.g., some lotteries come with extra prizes paid in installments). In such cases, these multiple prizes will be recorded in our data separately, and our criteria that individuals must win only once will drop these lottery win events.

ticket), we have either two names or in-trust information (for more than two winners). Because the raw data do not include all names of lottery winners for in-trust prizes, we remove these lottery wins from the data. For prizes with two winners, we assign 50% of the prize to each winner.

Similar to other lottery data, our data have some very large multimillion dollar wins, and numerous smaller wins. To preserve the anonymity of large winners, who could be identified in the data by their large and unique prizes, we winsorize the lottery amount at $350,000, which is approximately the 99th percentile of the lottery prize distribution. This approach also helps us to account for the effect of potential outliers in the lottery data. It is similar to previous studies with lottery data that truncate or winsorize lottery amounts at the 98th or other top percentiles of the prize distribution (e.g., Hankins et al., 2011, Agarwal et al., 2020).

To address the question of the external validity of our setting, Marshall (2011) shows that in the years 2004-2009, approximately 60% of Canadians played a government-sponsored lottery, and that government lotteries were the most frequently used form of gambling in Canada. Similarly, Rotermann and Gilmour (2022) shows that, in 2018, 64% of adult Canadians gambled at least once per year, with lottery games and instant lottery games being the most prevalent form of gambling.

2.2 Individual Tax and Demographic Data

Statistics Canada's Canadian Employer-Employee Dynamics Database (CEEDD) allows us to match tax records of individuals at different levels. We use individual-level tax records data (T1 Personal Master File, or T1PMF) from 2001 to 2018 as the linkage file to allow us to match a winner's personal tax data across a range of datasets, using a unique person identification number. This file is recorded at the individual level and contains the aggregate annual tax information (e.g., total labor income, investment income or business income), as well as demographic information such as age.

We use data on investment income and pension contributions as recorded in the personal income data to define financial constraints at the individual level. Investment income includes interest income from any savings accounts, dividends and capital gains. Because we do not observe balances of savings accounts or contributions to them, we use income from these accounts to identify individuals with some savings. Since we have data on pension contributions, we use these data to flag people who make pension contributions as another form of saving. We define individuals as being financially constrained if they have no interest or investment income or pen-

sion contributions in the pre-win period because they have no savings observable to us.[9] Those individuals with any form of savings are defined as not financially constrained.

In addition to the aggregated tax information provided in the personal tax file, the T4 Record of Employment and Remuneration (T4ROE) provides the annual remuneration of each individual at each employer where they have worked in that year. This feature allows us to track all the different employers of a given individual each year and through time. Employers provide information on their employees, such as salary paid, reason for separation, contributions to pension programs, and number of days worked if there is a job separation. The data are available from 2001 to 2018.

We use these data to construct an empirical measure of the number of jobs per person. This variable is used to measure job separations. This outcome captures changes in the number of employment records for each person in each year, and it accounts for changes in temporary or seasonal jobs. We also use these data to compute the total annual wage conditional on having a job (in practice, we define this variable as wage conditional on not quitting a job).

2.3 Incorporated Business Data

The main source of data for incorporated businesses in the CEEDD is the National Accounts Longitudinal Microdata File (NALMF), which is a longitudinal administrative database of Canadian corporations. From these data, we obtain annual income statement and balance sheet information.

We complement these data with T2S50 files, which contain shareholder information using the same unique individual-level identifier, referred to as a business entity ID. We can therefore attribute ownership of each incorporated business to individuals in our sample. By merging both files, we are able to study the firm performance and owner decisions before and after lottery wins. The data are available from 2001 to 2018.

Using these data, we assign incorporated business ownership for each person in each year. First, we create a panel of corporations owned by lottery winners during the sample period. Then, we link each incorporated business number to its owners. Finally, we create an indicator variable that measures if a winner owned at least one incorporated business during the years observed.

[9] In practice, we define no income and no contributions as having less than $100 for each in annual averages. We define pension contributions as contributions to a Registered Retirement Savings Plan (RRSP) account. RRSPs are similar to Individual Retirement Accounts (IRAs) in the U.S.

2.4 Unincorporated Business Data

To track unincorporated businesses, we use consolidated data on the T1 Financial Declarations (T1FD), which are filed by taxpayers who report self-employment income, and T1 Business Declarations (T1BD), which are filed by unincorporated business owners. These data are available from 2005 to 2018. Unincorporated businesses can be either sole proprietorships or partnerships. These data identify the business numbers of each unincorporated firm owned by each person in each year.

In addition to unincorporated business ownership, we compute total self-employment income from its components, such as business, commission, fishing, farming, professional and rental income, as reported in the personal income data. We use gross self-employment income and net self-employment income (net of expenses), which can be interpreted as revenues and profits from unincorporated businesses, respectively.

While we have some data on unincorporated business performance, these data are more limited than those on incorporated businesses. Moreover, reporting on unincorporated business performance is somewhat less complete, as many forms of unincorporated businesses (e.g., individuals with self-employment income) do not have to report much information to the tax authorities. As a result, when presenting findings on the performance of businesses owned by lottery winners, we primarily focus on results for incorporated businesses and, where possible, we include findings for unincorporated businesses.

2.5 Exit from Wage Employment and Firm Ownership

We construct variables to measure long-term exit from wage labor, incorporated business ownership, and unincorporated business ownership using the CEEDD. We use personal income tax files to define long-term exit from wage labor as having no reported income for five consecutive years after having wage income in the previous year, a definition similar to the one used by Golosov et al. (2024).[10] We define long-term exit from incorporated business using the ownership variable rather than observed earnings from the business they own. We define exit from incorporated business ownership as having no ownership of a corporation for five consecutive years after owning a corporation in the previous year. Similarly, we define exit from unincorporated business ownership as having no ownership of an unincorporated business for five consecutive years and owning

[10] For robustness, we define long-term exit from the labor market using a shorter period (e.g., three years).

this type of firm in the previous year.

2.6 Sample Construction

In this section, we discuss the construction of the sample used in our analysis. We start with the population of approximately 80,000 lottery wins provided by the lottery corporation over the years 2004 to 2021. As a first step in building our analysis sample, Statistics Canada matched these lottery winners to their administrative tax records. This matching is based on the first and last name of each winner, and their six-character postal codes as of the lottery payout date. Because Canadian six-character postal codes are very small geographic units containing approximately 15 households, on average, it is highly unlikely that there will be two people with the same first and last names in the same postal code at one point in time. From the original approximately 80,000 observations of lottery wins, approximately 80% were matched to a Canadian Social Insurance Number and thereby linked to a unique personal identifier in the CEEDD.

We impose three additional restrictions on the sample of individuals considered for our analysis: (i) The lottery prize must not be paid through a trust (i.e., we only consider lottery wins with two or fewer winners' names on the ticket); (ii) the winner must only win once during the sample period 2004 to 2021; and (iii) the winner must be aged 21 to 64 during the year of the win. Finally, we drop any observations where the individual tax information is missing. From this sample, about 16% of the observations have data on unincorporated business outcomes, and about 13% of the observations have data on incorporated business outcomes.

2.7 Descriptive Statistics

Table 1 provides descriptive statistics for the sample of winners in our data in the year before their lottery win. On average, winners are 45 years old, with 63% of them being male and 53% married. The average lottery win amount is $12,976, with many winners having smaller prizes and a few winners having very large prizes (which we winsorize at $350,000). The average annual earnings in the sample is $50,027, with 87% of winners having positive earnings. The average number of employers is 1.21 per year and wage earnings conditional on not quitting a job is $50,556.

Panels C and D of Table 1 summarize business-related outcomes which we use. On average, 16% of winners have an unincorporated business and 10% have net self-employment income. The

average self-employment income is $1,664. The incorporated business ownership rate is 13%.[11] The overall ownership (equity) share is 9.5% in the sample. Conditional on owning at least one corporation, winners own 75% of their corporation's equity. Incorporated businesses have around $203,000 in initial capital (assets in the first year of operation), while unincorporated businesses have $7,224 in initial capital.

Table A1 provides definitions of all the variables used along with their sources. The source files are as follows: (1) Lottery data; (2) personal tax information; (3) unincorporated business data from the year 2005 onward; (4) information on shareholders who own a stake in the company; (5) incorporated business performance data; and (6) remuneration and job duration information for each employer-employee pair.

3 Empirical Methodology

3.1 Random Assignment of Lottery Amount

To provide evidence for our identification assumptions that lottery amounts are randomly assigned, we examine whether demographic and other individual characteristics are correlated with the lottery amount. Table 2 summarizes these results. We run both univariate tests (trying each characteristic one at a time) and a multivariate regression (all variables at once). Individual characteristics include age, gender, marital status, wage earnings, self-employment income, unincorporated and incorporated business ownership and an indicator of financial constraints. All these variables are measured two years prior to the lottery win date to make sure they are not affected by a lottery win's timing.[12] Columns 1 and 2 of Table 2 show that no winners' characteristics are correlated with the lottery amount. For the multivariate regression, we also find an F-statistic for the joint significance of the individual characteristics of 0.99 and a p-value of 0.44.

3.2 Empirical Model

Our research question compares the effect of additional wealth on entrepreneurship of older and younger cohorts, using lottery winnings as the source of this additional wealth. We study this

[11] Jeon et al. (2021) document that these magnitudes of unincorporated and incorporated business ownership by lottery winners are similar to the magnitudes in the total Canadian population. In 2016, approximately 15% of Canadian taxpayers were unincorporated self-employed, while approximately 10% of Canadian taxpayers were incorporated self-employed.

[12] We have run these regressions based on variables one year prior to lottery win and find qualitatively similar results.

question by examining the differences in the effect of an additional dollar of lottery winnings on the change in entrepreneurship from before to after the lottery win between older and younger lottery winners. Effectively, we run a DID regression model to study the differences between older and younger winners' entrepreneurship responses to additional wealth.

Because our data effectively include staggered treatments (lottery wins over time), we follow the recent literature to overcome the well-known issues arising when using a standard two-way fixed effect difference-in-differences (TWFE DID) model in the case of staggered treatments (e.g., Goodman-Bacon, 2021). In particular, we follow Cengiz et al. (2019), Deshpande and Li (2019), and many others in building a stacked regression model. Baker et al. (2022) shows that the stacked estimator is efficient and its flexibility allows us to estimate both static and dynamic specifications. In estimating the model in this fashion, the main variables are defined for each cohort-specific dataset, and individual and time fixed effects are saturated with indicators for dataset identifiers. This estimation is equivalent to estimating treatment effects for each cohort of winners and then applying variance weighting to estimate average effects across cohorts (Baker et al., 2022).

The main issue in estimating a classical TWFE DID regression for staggered treatment analyses arises because some of the control group individuals have been previously treated, and therefore might not serve as an adequate control group. To remedy this situation, we follow Golosov et al. (2024) and many others in building a control group that has not yet been treated using the sample of winners that won in later years in our data. We group all individuals who won the lottery in a calendar year into one cohort. Each cohort of winners is analyzed in a lottery win-relative time window $w + j$, with $j \in -6$ to 6 corresponding to years before and after each cohort's lottery win year. The control group is chosen for each cohort as the individuals that won the lottery more than six years after the current cohort, such that the treatment for these individuals happens after our estimation window ends. In other words, if the win year of the treatment group is w, the control group for this cohort w consists of winners that won in $w^* > w + 6$. The individuals in the control group are commonly referred to as *not-yet-treated* individuals (Baker et al., 2022). Given the years for which we observe winners, the treatment group consists of winners from 2004 to 2014, and the control group consists of winners from 2011 to 2021.[13] We refer to each cohort of winners and

[13] The use of *not-yet-treated* individuals as the control group forces us to use a restricted sample of winners because we exclude lottery wins for which we do not have a valid control group. We do not impose perfect balance over the event-study to maximize the number of data points that can be used in the analysis. As an illustration, for the 2004 cohort, the treatment group consists of winners from the year 2004, and the control group consists of winners from the years 2011 to 2021. For the 2014 cohort, the treatment group consists of winners from the year 2014, and the control group consists of winners from the year 2021. The same winner can appear as a control and a treated person in our data in different

their control group as a cohort-specific dataset (Baker et al., 2022).

Unless explicitly reported, most of our analysis identifies the causal effect of lottery wins from the variation in the dollar amount won across individuals. Formally, we estimate the following event study specification:

$$Y_{itc} = \sum_{\substack{j=-6 \\ j\neq -1}}^{6} \mathbb{I}(\text{Time}_{ijc}) \times \left[\beta_{0j}\text{Amount}_i \times \text{Treated}_{ic} \times \text{Younger}_i + \beta_{1j}\text{Amount}_i \times \text{Treated}_{ic} + ...\right] + \alpha_{i,c} + \lambda_{t,c} + \varepsilon_{itc}, \quad (1)$$

where i indexes individuals, c indexes cohorts of winners, j indexes event-time years and t indexes calendar years. Y_{itc} represents the different outcomes we study, such as labor earning, entrepreneurship ventures or firm outcomes, $\mathbb{I}(\text{Time}_{ijc})$ represents a series of event-time dummies, Amount_i is the lottery winning for individual i, Treated_{ic} is the cohort-specific individual treatment identifier, and Younger_i is an indicator variable for whether individual i is younger than age 55 in the year of the win. We include all other interactions and all level terms for these variables not absorbed by fixed effects. In this equation, the series of β_{1j} coefficients measures the average effect of one dollar in lottery wins for each year, relative to the year before the win, on the outcome of interest Y_{itc} for older individuals (the omitted group). The series of β_{0j} coefficients measures the same effect for the difference between the younger and older individuals. This specification, combining a stacked regression model with varying intensity of treatment, is similar to Butters et al. (2022). The models we estimate include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects (Wing et al., 2024). We cluster standard errors at the level of the individual in each cohort-year, which is the level of variation we exploit to identify the effect of lottery wins.

In addition to estimating an event study specification, we report results from a DID model in the following form:

$$Y_{itc} = \beta_3\text{After}_{it} \times \text{Amount}_i \times \text{Treated}_{ic} \times \text{Younger}_i + \beta_4\text{After}_{it} \times \text{Amount}_i \times \text{Treated}_{ic} + ... + \alpha_{i,c} + \lambda_{t,c} + \varepsilon_{itc}, \quad (2)$$

event windows. For example, a 2011 winner will be used as a control individual for the 2004 cohort of winners with the data from 2001 to 2010 (outside this winner's treatment window). Then, this same 2011 winner will be used as a treatment person in 2011 with his 2005-2017 data.

where we replace the set of event time dummy variables with one indicator variable After_{it}, which is equal to one for the year of the lottery win and subsequent years and is zero otherwise. The rest of this equation is the same as equation (1). In this equation, β_4 represents the effect for older individuals (the omitted group), and β_3 measures the effect for the difference between the younger and older individuals. We report the effects for younger and older individuals separately, and we use the Delta method to calculate their standard errors.

4 Measuring Firm Ownership and Its Economic Effect

We examine how extra wealth affects not only the quantity of business ownership, but also those businesses' growth potential, i.e., their ability to add to the overall economy. This is because there is a well-known issue in the entrepreneurship literature that there is a very large heterogeneity in different types of entrepreneurial ventures (e.g., Hurst and Pugsley, 2011, Haltiwanger et al., 2013). Therefore, simply aggregating ownership across all entrepreneurial firms does not provide a full description of how much these different kinds of firms contribute to the overall economy. For this reason, in addition to simply measuring firm ownership, we also examine the characteristics of the owned firms, which helps us understand how much the firm is adding to the overall economy.

We measure the growth potential of firms in two ways. First, we use the legal structure of the firm (incorporated vs. unincorporated) as a proxy for the growth orientation of the firm. Second, we provide evidence on the actual business level outcomes of the firm. In this section, we discuss each in turn.

4.1 Incorporated and Unincorporated Status as a Proxy for Growth Orientation

One important distinction between different kinds of entrepreneurial firms that has often been made in the literature is the choice of legal business structure used by firms. Specifically, this literature has examined the choice between incorporated and unincorporated legal structure (e.g., Bellon et al., 2021, Herkenhoff et al., 2021, Bos et al., 2018, Levine and Rubinstein, 2017). This literature has argued that high growth-potential owners typically choose an incorporated business structure. If these growth-oriented incorporated firms are successful, then they will have meaningful effects on an economy. At the other end of the spectrum are less growth-oriented businesses, whose owners typically choose unincorporated legal forms. Entrepreneurs with unincorporated businesses may be less motivated by growth and more motivated by non-pecuniary benefits of

entrepreneurship, such as being their own bosses or participating in a favorite activity (Jones and Pratap, 2020). Like this entrepreneurship literature, we use the choice of legal business structure (incorporated versus unincorporated) as a proxy for the long-term growth orientation of a firm.

4.2 Firm Level Outcomes as a Measure of Actual Growth

While incorporated status is a proxy for potential business growth, we can also measure actual growth using tax data on various firm level outcomes for both incorporated (sales, expenses, and revenues) and unincorporated firms (gross and net self-employment income). These outcomes allow us to measure how much both incorporated and unincorporated businesses add to the economy due to increases in their owners' wealth. If business owners invest extra wealth from lottery winnings into their firms and increase their business growth, then the effect on the economy of the additional wealth is positive. On the other hand, if additional wealth motivates business owners to wind down or shrink their firms, then the effect on the overall economy is negative. We provide evidence on these hypotheses in the following sections.

5 The Effect of Wealth on Business Ownership

In this and the following sections, we present our findings on the different effects of wealth on economic outcomes for older and younger individuals. For each set of outcomes, we study the effects on older individuals and younger individuals and then consider the differences between them.

5.1 Incorporated Firms

We present findings on the ownership of incorporated businesses in column (1) of Table 3. For every additional $100,000 received in lottery winnings, older individuals are 2.3 percentage points less likely to own an incorporated business and younger individuals are 1.5 percentage points more likely to own an incorporated business after winning the lottery. These coefficients represent a 17.7% drop and an 11.5% increase for older and younger individuals, respectively, on the baseline rate of incorporated business ownership of 13% in the data (see Table 1). Moreover, the difference in the effects for younger and older individuals, 3.8 percentage points, is also highly

statistically significant.[14]

In Figure 1 (a) and (c), we present the dynamics of the effects on incorporated business ownership for younger and older lottery winners, respectively. We find that the effect on both groups is increasing over time after the lottery win, with the effect being increasingly negative for older individuals and increasingly positive for younger individuals. These figures also show that the lottery amount does not predict corporation ownership or any other outcomes in any of the pre-win years (from year $t-6$ to year $t-2$). This finding indicates that the lottery prizes are random and not correlated with pre-win outcomes. These dynamic results also allay concerns about non-parallel trends, which is unsurprising given the random nature of lottery winnings.

In sum, our analysis shows that additional wealth increases incorporated business ownership among younger individuals and decreases it among older individuals. Moreover, the effect on the two groups is large and increases over time.

5.2 Unincorporated Firms

In column (2) of Table 3, we report the effects of lottery wealth on the ownership of unincorporated businesses. We find that additional wealth does not significantly change the likelihood that older individuals own unincorporated businesses. On the other hand, an additional $100,000 in lottery wealth increases the likelihood that a younger individual owns an unincorporated business by 1.4 percentage points (a 8.8% change relative to the mean ownership rate of 16%), though that increase is only weakly statistically significant. The 2.8 percentage point higher likelihood of owning an unincorporated business for younger individuals relative to older individuals is more precisely estimated ($p < 0.05$).

We examine the dynamic effects on unincorporated business ownership among younger people in Figure 1 (b), which shows a positive and relatively steady effect of lottery winnings on the likelihood of younger individuals owning unincorporated businesses. Figure 1 (d) reports some evidence of a negative effect for older individuals, although this effect is both statistically insignificant and declining over time. Overall, we find that increased wealth causes an increase in the likelihood of younger individuals owning unincorporated businesses, but it does not seem to affect the likelihood among older individuals.

[14] In Appendix Tables A2 - A6, we report results for the full sample (combining older and younger lottery winners) for incorporated and unincorporated business ownership and performance. Almost all coefficients are statistically insignificant. These insignificant findings for the full sample emphasize the importance of examining older and younger lottery winners separately.

Taken together, these results indicate that older individuals may be more likely to withdraw from incorporated business activities with extra wealth, while still remaining attached to unincorporated firms. This difference may be explained by the different benefits and requirements of these two types of businesses (e.g., unincorporated businesses may provide non-pecuniary benefits, which increase the incentive for older individuals to remain in those businesses). These differentiated findings for incorporated and unincorporated business ownership, in particular, the finding that extra wealth leads to older entrepreneurs being more likely to exit incorporated but not unincorporated business, has important economic implications, given the arguments in Section 4 that incorporation can be used as a proxy for a higher growth orientation of the business.

6 The Effect of Wealth on Actual Business Growth

While in the previous section, we focused on the effect of wealth on incorporated and unincorporated business ownership among older and younger individuals; in this section, we examine the effect of wealth to business owners on the actual business growth of existing firms.

6.1 Incorporated Firms

In this section, we examine the effects of lottery winnings on incorporated businesses' growth. The results in Table 4 show that among older individuals with ongoing incorporated businesses, additional wealth reduces business growth along a few key dimensions. In particular, we find that every additional $1 in lottery wealth reduces firms' total sales by $1.57, expenses by $1.15 and revenues by $1.52. On the other hand, additional wealth does not increase business growth among the firms owned by younger individuals along any of the above dimensions. For all these outcomes, the differences between the two groups are statistically insignificant.

In Figure 2, we present the dynamic effects of wealth on incorporated business growth for younger and older individuals. This figure shows that older individuals' ongoing incorporated businesses' sales, expenses, and revenues are lower in all of the post-win years, though the decrease is not statistically significant in most years. We also see some evidence of an increase in all three measures of incorporated business performance for younger winners' firms, but the increase is never statistically significant. Overall, these results show that additional wealth induces older winners to reduce the scale of their ongoing incorporated businesses, whereas there seems to be no significant effect on the scale of younger winners' ongoing incorporated businesses.

6.2 Unincorporated Firms

In this section, we consider the effects of wealth on ongoing unincorporated businesses' performance. As mentioned earlier, business performance data for unincorporated businesses are less detailed, so we study lottery winners' self-employment income, which captures income from any unincorporated businesses owned by the individual. As we report in column 1 of Table 5, additional wealth does not affect older individuals' likelihood of reporting gross self-employment income (i.e., revenue), whereas every additional $100,000 in winnings increases a younger individual's likelihood of reporting gross self-employment income by 1.5 percentage points. The difference, however, in the effect between the two groups is not statistically significant. In column 2, we show results for the probability of having net self-employment income (profits). An additional $100,000 in wealth increases the likelihood of reporting net self-employment income by 1.7 percentage points for younger individuals, and it has no statistically significant effect for older people. The difference between the two groups is 2.5 percentage points, and it is significant.

We also study net self-employment income and find a $0.007 decrease for every additional $1 in winnings for older individuals and a $0.003 increase in self-employment income for younger individuals. The difference in net self-employment income between the two groups is statistically significant ($p < 0.05$), with younger individuals reporting $0.01 more self-employment income per additional dollar of wealth than older individuals.[15]

Figure 3 presents the dynamic analysis findings for unincorporated business performance. In this figure, we see an immediate increase in the likelihood of reporting gross and net self-employment income among younger individuals. The effect for the amount of net self-employment income is not as strong, but it seems to be similarly positive. Figure 3 shows no consistent effect on the probability of reporting gross and net self-employment income for older individuals (figures (d) and (e)), but there seems to be a clear negative effect of additional wealth in later years on the amount of net self-employment income (figure (f)). Overall, we find evidence that younger individuals scale up their unincorporated businesses with additional wealth and some evidence that older individuals scale down their unincorporated businesses.

[15] In unreported tests, we also examined the effect of additional wealth on net self-employment conditional on reporting any self-employment income. We find no effect of additional wealth on this outcome. This result, in conjunction with the findings in column 1 of Table 5, indicates that the effect of additional wealth on younger winners' ongoing unincorporated businesses after a lottery win is generally on an extensive margin. Younger individuals change from reporting no self-employment income to positive self-employment income with greater winnings but do not report an increase in such income if they previously reported such income.

6.3 How Changes in the Entrepreneurial Activity Affect the Overall Economy

In this section, we jointly consider the effects of wealth on business ownership and business growth of younger and older individuals and draw implications for the overall economy. As we argue in Section 4, the largest effect on the overall economy will come from incorporated firms that have significant business growth. Unincorporated firms, as well as incorporated firms without actual business growth will have a smaller effect on the overall economy. We provide evidence on these criteria by jointly interpreting our results from Sections 5 and 6.

We first examine our results for incorporated firms. In Section 5, we document that additional wealth increases incorporated business ownership among younger individuals, and decreases incorporated business ownership among older winners. Importantly, however, the results on business growth indicate that additional wealth to younger individuals will not generate significant increase in actual business growth by these incorporated firms (as measured by sales, expenses, and revenues from annual tax data). These results, taken together, imply that younger individuals may increase incorporated business ownership with extra wealth, but that these incorporated businesses will not generate significant increases in actual business growth. Thus, because these incorporated firms are not generating significant growth, these results imply that wealth increases to younger individuals will not have large positive spillover effects on the overall economy.

On the other hand, our results for older individuals imply that additional wealth to these individuals will indeed have a significant negative effect on the overall economy. This is because we find that the wealth increase received by older individuals will both generate a reduction in the ownership of incorporated businesses, and importantly, will also lead to the reduction in the measures of business growth (sales, expenses, revenues) of these incorporated firms.

Our findings for unincorporated firms suggest that younger individuals will increase their ownership of such firms with additional wealth, and these firms will increase their business performance to a degree (e.g., net self-employment income). However, we also find that additional wealth to older individuals will reduce business performance of their unincorporated firms. Based on these offsetting effects and the argument in Section 4 that unincorporated businesses have lower growth orientation, our results imply that extra wealth to younger individuals will not result in an increase in entrepreneurial activities with a large effect on overall economic growth.

Taken together, our results imply that the negative effects from additional wealth on the entrepreneurial activity of an older individual will outweigh the positive effects of extra wealth on

the entrepreneurial activity of a younger individual. Even though younger individuals' increase in business ownership compensates for the decline in firm ownership of older winners, the firms of younger individuals do not generate growth to offset the lost growth of older individuals' businesses.

7 The Interaction Between Entrepreneurial Labor and Wage Labor

In this section, we examine the effect of additional wealth on wage labor outcomes and long-term exit from entrepreneurship and wage labor. We study these outcomes to understand whether younger individuals transition from wage labor to entrepreneurship or add it as a side hustle and whether older individuals who exit entrepreneurship retire or transition to wage jobs. We examine three groups of outcomes: 1) wage labor supply; 2) transitions from wage labor to business ownership; 3) long-term exits from entrepreneurship and wage labor.

7.1 Wealth and Wage Labor Supply

A large literature has examined the effect of wealth (especially lottery wins) on wage labor outcomes. Many papers document that lottery wins reduce labor supply (including Imbens et al., 2001, Cesarini et al., 2017, Picchio et al., 2018, Golosov et al., 2024). On the other hand, several other studies have shown that additional financial resources allow individuals to fund an increase in job search (e.g., Herkenhoff et al., 2024, Doornik et al., forthcoming), which may serve to increase labor supply or wage earnings. Thus, the effect of additional wealth on wage labor supply is somewhat ambiguous. In this section, we provide evidence on this issue.

We present our findings on wage labor supply in Table 6. We consider the effects of additional wealth on four measures of individual wage labor supply: amount of wage earnings, reporting any wage earnings, number of jobs, and wage earnings conditional on having a job. Our main finding is that additional wealth reduces wage labor supply and the effects are remarkably similar for older and younger individuals, across all the measures we study.

In particular, column 1 of Table 6 shows that an additional dollar of wealth reduces wage earnings of younger individuals by \$0.047 and older individuals' wage earnings by \$0.037. Both negative effects on wage earnings are highly statistically significant. In the remaining columns of Table 6, we separate wage labor supply effects into effects on the extensive and intensive margins. In columns 2 and 3, we present extensive margin effects. Column 2 shows that both younger and

older individuals' likelihood of reporting any wage earnings decreases with additional wealth. Younger people are 5.5 percentage points less likely and older people are 7.3 percentage points less likely to report any wage earnings with every additional $100,000 in wealth. Both of these effects are highly statistically significant. In column 3, we show that an additional $100,000 in lottery winnings reduces the number of jobs reported by a younger person by 0.103 and by an older person by 0.096. Again, both of these effects are highly statistically significant.

Finally, in column 4 of Table 6, we examine intensive margin effects. We show that, conditional on having a job, every additional dollar of wealth reduces reported earnings by $0.038 among younger winners and by $0.034 among older winners. The effects on both groups are highly statistically significant. Together, the results in Table 6 indicate that additional wealth induces younger and older individuals to reduce their labor supply and that the effect is present on both the intensive or the extensive margins.

We also present the dynamic effects on wage labor supply in Figure 4. In figures (a) through (d), we see a clear, immediate, and persistent negative effect on all wage labor measures for younger people. The effects on older individuals' wage labor, shown in figures (e) through (h), are clear and immediate as well, though they seem to lessen somewhat over time. Overall, we find that additional wealth causes both older and younger individuals to reduce their supplied wage labor.

7.2 Wealth and the Transition from Wage Labor to Entrepreneurial Labor

Given our findings in Section 5 that younger individuals increase business ownership with additional wealth and the finding in the previous section that they decrease wage labor supply, in this section we examine whether additional wealth reduces wage labor and increases business ownership at the same time. This question is important to understand the flows of individuals from and into wage labor, entrepreneurial labor and outside of both markets.[16] To address this question, we focus on a sample of lottery winners who reduced their wage income by at least 20% in the current year compared with the previous year. Then, we estimate how additional wealth changes incorpo-

[16] This idea is related to the existing entrepreneurship literature that examines why individuals transition from wage employment to entrepreneurship (e.g., Gompers et al., 2005) or from entrepreneurship back to wage employment (e.g., Catherine, 2022). One element of this literature examines how various exogenous shocks can generate the transition into entrepreneurship. For example, Babina (2020) examines how financial distress in an employer encourages this transition, while Hacamo and Kleiner (2022) examine college graduation into a recession as a mechanism to force people into entrepreneurship.

rated and unincorporated business ownership in this group for older and younger individuals.[17] Table 7 and Figure 5 present our results.

The main finding in Table 7 is that younger individuals who reduced wage income also increase their business ownership with additional wealth. In particular, columns (1) through (3) show that an extra $100,000 in wealth increases incorporated firm ownership among younger individuals by 2.6 percentage points, unincorporated ownership by 4.3 percentage points, and either ownership by 4.6 percentage point. Similarly, Figure 5 shows that the effects of additional wealth on younger individuals are immediate and statistically significant. Thus, we find evidence that younger individuals transition from wage labor to entrepreneurial activity with additional wealth.

The results in Table 7 and Figure 5 for older individuals demonstrate that additional wealth does not motivate this group to transition into either incorporated or unincorporated business ownership after reducing their wage labor supply. In particular, in Table 7, we find negative and insignificant effects of additional wealth on business ownership among older individuals who reduced their wage income. Figure 5 shows that event study effects are not significant as well. Thus, our results for older individuals are not consistent with this group reducing their wage labor supply to transition to entrepreneurship. In the following section, we examine the transitions experienced by older individuals in more detail.

7.3 Wealth Increases and Long-Term Exit From Entrepreneurship and Wage Labor

While we documented that additional wealth allows younger individuals to transition from wage labor to entrepreneurship and older individuals to reduce both wage labor and business ownership, in this section, we focus on long-term effects of wealth on these individuals. Considering long-term effects is important because they will lead to larger changes in the economic growth. In addition, we use long-term effects to examine if older and younger individual are more likely to retire with extra wealth.[18] To examine long-term exit from wage labor and business ownership, we define new indicator variables that measure whether an individual with wage income in the previous year has no wage income in the following five years. Similarly, we define long-term exit

[17] As a robustness check, in Appendix Table A9 we report results for individuals who reduced their wage income by at least 10% and the results are qualitatively identical.

[18] A large literature has examined the effect of wealth on the decision to retire from wage labor (e.g., Joulfaian and Wilhelm, 1994, Sevak, 2002, Hurd et al., 2009, Brown et al., 2010, Gelber et al., 2016, Cesarini et al., 2017, Zhao and Burge, 2017, Disney and Gathergood, 2018, Golosov et al., 2024). We contribute to this literature by considering retirement from entrepreneurship.

from business ownership as no ownership of each type of business (incorporated or unincorporated) in the following five years and having this ownership in the previous year. Table 8 and Figure 6 summarize our findings.

Column 1 of Table 8 shows that for every additional $100,000 in lottery winnings older individuals are 3.8 percentage points more likely to exit from wage-based employment and younger individuals are 2.1 percentage points more likely to exit from wage-based employment. Both of these effects are highly statistically significant, with older individuals' exit likelihoods being statistically significantly larger than those of younger individuals. Next, in column 2, we show that there is no significant effect of wealth on older individuals' exit from unincorporated businesses, though the coefficient is positive. Similarly, younger individuals show no significant response to additional wealth in their exit from unincorporated businesses. The difference between the two groups is not statistically significant either. Finally, in column 3, we show that an additional $100,000 in wealth causes older individuals to be 3.3 percentage points more likely to exit from their incorporated businesses and has no effect on younger people's likelihood of exiting from their incorporated businesses. The effect on older individuals is statistically significant, as is the difference between them and younger individuals, with younger individuals being 3.3 percentage points less likely than older individuals to exit from incorporated businesses with an additional $100,000.

In Figure 6, we present the dynamic effects of additional wealth on exit from the three types of economic activity. For wage earnings (panels a and d), we find an immediate and persistent increase in long-term exit in response to additional wealth. In panels (b) and (e), we find that there is no effect on exit from incorporated businesses for younger individuals, but older individuals seem immediately more likely to exit from incorporated businesses, with the effect growing over time. For exit from unincorporated businesses (panels c and f), we find no significant effect of additional wealth for either group in any post-win year.

In summary, our results in this section that additional wealth increases long-term exit from incorporated business and wage labor for older individuals are consistent with this group retiring from both wage labor and entrepreneurial labor markets. On the other hand, our findings for younger individuals indicate that they exit wage labor market long-term, but do not exit entrepreneurship. Thus, the short-term effects of increased business ownership among this group do not dissipate with time. Overall, the long-term persistence of older individuals' exit from wage labor and entrepreneurship as well as that of younger individuals' transition to entrepreneurship

amplify the economic significance of the wealth effects we document.

8 Ruling Out Alternative Explanations

8.1 Financial Constraints

Since younger individuals, on average, have less wealth than older people, an alternative possible explanation for some of our findings above (that younger individuals are more likely than older people to increase entrepreneurship with additional lottery wealth) is that the younger winners are more likely to be financially constrained. Such an explanation would align with a large literature on financial constraints to entrepreneurship.[19] In this section, we offer two counter-arguments, one empirical and one theoretical, to this alternative possible explanation.

While it is plausible that a portion of the age-based differences in entrepreneurial responses to additional wealth arises due to differing financial constraints for the young and the old, we use empirical measures of financial constraints to show that these age-based differences are not entirely driven by financial constraints. We define financial constraints at the individual level (see Section 2.2 for more details) using data on investment income (interest income from savings accounts, dividends and capital gains) and pension contributions. We measure if a person had any savings before the lottery win and people without savings or pension contributions are labeled as financially constrained, while people with savings are labeled as not constrained.[20] Based on this distinction, we split the younger and the older samples into financially constrained and unconstrained groups.

Table 9 summarizes the effect of wealth on business ownership for financially constrained and unconstrained lottery winners of different age cohorts. The results indicate that there is no difference in ownership of businesses among younger individuals between the financially constrained and unconstrained. Both constrained and unconstrained young people increase their ownership of incorporated and unincorporated businesses, though the effects are slightly more statistically significant for the financially unconstrained. Given that unconstrained young people also respond

[19] That literature uses plausibly exogenous wealth increases (e.g., Bellon et al., 2021) to show that individuals open new businesses in response to additional wealth. Such a finding is usually interpreted as evidence that individuals were financially constrained before their wealth increased and, as a result, were unable to open new businesses until after the wealth increase.

[20] We also define financial constraints based on whether the individual has above or below median income before winning a lottery and obtain similar results.

to additional wealth, these findings imply that not all the age-based differences we document are driven by financial constraints.

Table 9 also shows that, for financially constrained and unconstrained older individuals, additional wealth decreases ownership of incorporated businesses (and unincorporated businesses, though these effects are not statistically significant). Equally importantly, the difference in business ownership is not statistically significant among constrained and unconstrained older people. If age solely proxied for financial constraints and older people were unconstrained, we would expect no effects on business ownership of additional wealth or, at the very least, a smaller effect of additional wealth on business ownership for unconstrained older people. As such, these results are not consistent with age solely being a proxy for financial constraints to entrepreneurship.

More broadly, our paper does not show the absence of financial constraints among older people. In fact, we document that, when they receive additional wealth, older people exit from business ownership and wage labor. This response to additional wealth captures a different financial constraint at work among older people: a constraint against retirement. Older people are financially constrained from reducing work as they would like and, when they receive additional wealth, it eases that constraint and they become more likely to retire. While age-based differences in entrepreneurship responses to wealth may be partially explained by financial constraints **against entrepreneurship**, our findings on long-term exits from labor and business ownership document that age does not serve as a proxy for financial constraints as a whole. Therefore, as a broad literature has already documented (Sevak, 2002, Hurd et al., 2009, Brown et al., 2010, Disney and Gathergood, 2018), older people are also financially constrained, but from retirement rather than entrepreneurship.

8.2 Prior Business Ownership

Differing levels of prior business ownership may provide an alternative explanation for the differences between younger and older individuals that we document. It may be the case that people who own businesses respond to additional wealth by divesting from their businesses while people who do not own businesses respond by starting businesses. If so, higher rates of business ownership among older individuals compared to younger individuals may explain our main results. To test this alternative hypothesis, we split our younger and older samples into two groups based on prior business ownership: those who never owned a business previously (designated "never owners") and those who owned at least one business previous to the lottery win (designated "ever

owners"). We then compare the responses to additional wealth of older and younger individuals for each of those groups.

In Table 10, we show the results of these tests. In columns (1) and (3), we show that, among never owners, older winners do not respond to additional wealth by increasing their business ownership (incorporated or unincorporated), whereas younger winners do. In both columns, the point estimates for older never owners' responses are much smaller than those of younger never owners and close to zero. These findings imply that the increase in business ownership for younger winners is not driven by winners without existing businesses generally being more likely to respond to additional wealth by increasing their business ownership.

In columns (2) and (4) of the table, we show that, among ever owners, older ever owners clearly reduce their ownership of incorporated businesses when they receive additional wealth. Younger ever owners, on the other hand, do not respond to additional wealth by decreasing their business ownership. In addition, the point estimate of younger ever owners' responses to additional wealth is much smaller than that for older owners and not statistically significant. This finding implies that the decrease in incorporated business ownership for older winners is not caused by all prior business owners being more likely to respond to additional wealth by divesting from their existing businesses. Together, the results we document in this section rule out the alternative explanation that our differential ownership responses for older and younger people are driven by general patterns based on business ownership experience.

9 Conclusion

In this paper, we examine how wealth affects the entrepreneurial decisions of younger and older individuals. The motivations for examining this issue are the importance of entrepreneurship for economic growth and job creation, and the rapidly aging population in many countries. We match lottery winner data to employer-employee tax files, which allows us to observe both wage labor and entrepreneurial activity.

Our main finding is that older and younger individuals respond very differently to a wealth increase. On the one hand, younger individuals reduce their wage labor supply and they increase their entrepreneurial activity with additional wealth. On the other hand, for older individuals, additional wealth reduces both their wage labor supply and entrepreneurial activity, which is consistent with retirement. These new results emphasize the importance of accounting for age

when examining the effect of wealth on entrepreneurship.

Because we can observe both entrepreneurial activity and wage labor (using matched employer-employee data), we are also able to provide an explanation for a puzzling result that both younger and older individuals reduce labor supply to the same degree in response to wealth increases. This result is inconsistent with standard life-cycle models, which predict that older individuals should reduce labor supply by a larger amount than younger people. By simultaneously examining wage labor supply and entrepreneurial activity, we can document that total work activity (wage labor plus entrepreneurial activity) does indeed decline more for older compared with younger individuals, which is consistent with the standard theory.

References

ADELINO, M., A. SCHOAR, AND F. SEVERINO (2015): "House prices, collateral, and self-employment," *Journal of Financial Economics*, 117, 288–306.

AGARWAL, S., V. MIKHED, AND B. SCHOLNICK (2020): "Peers' income and financial distress: Evidence from lottery winners and neighboring bankruptcies," *Review of Financial Studies*, 33, 433–472.

ANDERSEN, S. AND K. M. NIELSEN (2012): "Ability or finances as constraints on entrepreneurship? Evidence from survival rates in a natural experiment," *Review of Financial Studies*, 25, 3684–3710.

AZOULAY, P., B. F. JONES, J. D. KIM, AND J. MIRANDA (2020): "Age and high-growth entrepreneurship," *American Economic Review: Insights*, 2, 65–82.

BABINA, T. (2020): "Destructive Creation at Work: How Financial Distress Spurs Entrepreneurship," *The Review of Financial Studies*, 33, 4061–4101.

BAHAJ, S., A. FOULIS, AND G. PINTER (2020): "Home values and firm behavior," *American Economic Review*, 110, 2225–2270.

BAKER, A. C., D. F. LARCKER, AND C. C. WANG (2022): "How much should we trust staggered difference-in-differences estimates?" *Journal of Financial Economics*, 144, 370–395.

BELLON, A., J. A. COOKSON, E. P. GILJE, AND R. Z. HEIMER (2021): "Personal wealth, self-employment, and business ownership," *Review of Financial Studies*, 34, 3935–3975.

BERNSTEIN, S., E. COLONNELLI, D. MALACRINO, AND T. MCQUADE (2022): "Who creates new firms when local opportunities arise?" *Journal of Financial Economics*, 143, 107–130.

BLACK, S. E. AND P. E. STRAHAN (2002): "Entrepreneurship and bank credit availability," *The Journal of Finance*, 57, 2807–2833.

BOS, M., E. BREZA, AND A. LIBERMAN (2018): "The labor market effects of credit market information," *Review of Financial Studies*, 31, 2005–2037.

BRIGGS, J., D. CESARINI, E. LINDQVIST, AND R. ÖSTLING (2021): "Windfall gains and stock market participation," *Journal of Financial Economics*, 139, 57–83.

BROWN, J. R., C. C. COILE, AND S. J. WEISBENNER (2010): "The effect of inheritance receipt on retirement," *The Review of Economics and Statistics*, 92, 425–434.

BUTTERS, R. A., D. W. SACKS, AND B. SEO (2022): "How do national firms respond to local cost shocks?" *American Economic Review*, 112, 1737–1772.

CAGETTI, M. AND M. DE NARDI (2006): "Entrepreneurship, frictions, and wealth," *Journal of Political Economy*, 114, 835–870.

——— (2009): "Estate taxation, entrepreneurship, and wealth," *American Economic Review*, 99, 85–111.

CATHERINE, S. (2022): "Keeping options open: What motivates entrepreneurs?" *Journal of Financial Economics*, 144, 1–21.

CENGIZ, D., A. DUBE, A. LINDNER, AND B. ZIPPERER (2019): "The effect of minimum wages on low-wage jobs," *The Quarterly Journal of Economics*, 134, 1405–1454.

CESARINI, D., E. LINDQVIST, M. J. NOTOWIDIGDO, AND R. ÖSTLING (2017): "The effect of wealth on individual and household labor supply: Evidence from Swedish lotteries," *American Economic Review*, 107, 3917–3946.

CESPEDES, J., X. HUANG, AND C. PARRA (2023): "More money, more options? The effect of cash windfalls on entrepreneurial activities in small businesses," *SSRN (July 10, 2023)*.

CHATTERJI, A. K. AND R. C. SEAMANS (2012): "Entrepreneurial finance, credit cards, and race," *Journal of Financial Economics*, 106, 182–195.

CORRADIN, S. AND A. POPOV (2015): "House prices, home equity borrowing, and entrepreneurship," *Review of Financial Studies*, 28, 2399–2428.

DESHPANDE, M. AND Y. LI (2019): "Who is screened out? Application costs and the targeting of disability programs," *American Economic Journal: Economic Policy*, 11, 213–248.

DISNEY, R. AND J. GATHERGOOD (2018): "House prices, wealth effects and labour supply," *Economica*, 85, 449–478.

DOBBIE, W., P. GOLDSMITH-PINKHAM, N. MAHONEY, AND J. SONG (2020): "Bad credit, no problem? Credit and labor market consequences of bad credit reports," *The Journal of Finance*, 75, 2377–2419.

DOORNIK, B. F. N. V., A. R. GOMES, D. SCHOENHERR, AND J. SKRASTINS (forthcoming): "Financial access and labor market outcomes: Evidence from credit lotteries," *American Economic Review*.

GELBER, A. M., A. ISEN, AND J. SONG (2016): "The effect of pension income on elderly earnings: Evidence from social security and full population data," *NBER Working paper*.

GENDRON-CARRIER, N. (2025): "Prior work experience and entrepreneurship: The careers of young entrepreneurs," *Journal of Labor Economics*.

GOLOSOV, M., M. GRABER, M. MOGSTAD, AND D. NOVGORODSKY (2024): "How Americans respond to idiosyncratic and exogenous changes in household wealth and unearned income," *The Quarterly Journal of Economics*, 139, 1321–1395.

GOMPERS, P., J. LERNER, AND D. SCHARFSTEIN (2005): "Entrepreneurial spawning: Public corporations and the genesis of new ventures, 1986 to 1999," *The journal of Finance*, 60, 577–614.

GOODMAN-BACON, A. (2021): "Difference-in-differences with variation in treatment timing," *Journal of Econometrics*, 225, 254–277.

HACAMO, I. AND K. KLEINER (2022): "Forced Entrepreneurs," *The Journal of Finance*, 77, 49–83.

HALTIWANGER, J., R. S. JARMIN, AND J. MIRANDA (2013): "Who creates jobs? Small versus large versus young," *Review of Economics and Statistics*, 95, 347–361.

HANKINS, S., M. HOEKSTRA, AND P. M. SKIBA (2011): "The ticket to easy street? The financial consequences of winning the lottery," *Review of Economics and Statistics*, 93, 961–969.

HERKENHOFF, K., G. PHILLIPS, AND E. COHEN-COLE (2024): "How credit constraints impact job finding rates, sorting, and aggregate output," *Review of Economic Studies*, 91, 2832–2877.

HERKENHOFF, K., G. M. PHILLIPS, AND E. COHEN-COLE (2021): "The impact of consumer credit access on self-employment and entrepreneurship," *Journal of Financial Economics*, 141, 345–371.

HINCAPIÉ, A. (2020): "Entrepreneurship over the life cycle: Where are the young entrepreneurs?" *International Economic Review*, 61, 617–681.

HURD, M. D., M. RETI, AND S. ROHWEDDER (2009): "The effect of large capital gains or losses on retirement," *Developments in the Economics of Aging*, 127–163.

HURST, E. AND A. LUSARDI (2004): "Liquidity constraints, household wealth, and entrepreneurship," *Journal of Political Economy*, 112, 319–347.

HURST, E. AND B. W. PUGSLEY (2011): "What do small businesses do?" Tech. rep., National Bureau of Economic Research.

IMBENS, G. W., D. B. RUBIN, AND B. I. SACERDOTE (2001): "Estimating the effect of unearned income on labor earnings, savings, and consumption: Evidence from a survey of lottery players," *The American Economic Review*, 91, 778–794.

JEON, S.-H., H. LIU, AND Y. OSTROVSKY (2021): "Measuring the gig economy in Canada using administrative data," *Canadian Journal of Economics/Revue canadienne d'économique*, 54, 1638–1666.

JONES, J. B. AND S. PRATAP (2020): "An estimated structural model of entrepreneurial behavior," *American Economic Review*, 110, 2859–2898.

JOULFAIAN, D. AND M. O. WILHELM (1994): "Inheritance and labor supply," *Journal of Human Resources*, 1205–1234.

KERR, W. R. AND R. NANDA (2009): "Democratizing entry: Banking deregulations, financing constraints, and entrepreneurship," *Journal of Financial Economics*, 94, 124–149.

KRISHNAN, K. AND P. WANG (2019): "The cost of financing education: Can student debt hinder entrepreneurship?" *Management Science*, 65, 4522–4554.

LEVINE, R. AND Y. RUBINSTEIN (2017): "Smart and illicit: Who becomes an entrepreneur and do they earn more?" *The Quarterly Journal of Economics*, 132, 963–1018.

LIANG, J., H. WANG, AND E. P. LAZEAR (2018): "Demographics and entrepreneurship," *Journal of Political Economy*, 126, S140–S196.

LINDH, T. AND H. OHLSSON (1996): "Self-employment and windfall gains: Evidence from the Swedish lottery," *The Economic Journal*, 106, 1515–1526.

MAESTAS, N., K. J. MULLEN, AND D. POWELL (2023): "The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity," *American Economic Journal: Macroeconomics*, 15, 306–332.

MARSHALL, K. (2011): *Gambling 2011*, Statistics Canada.

MCKENZIE, D. (2017): "Identifying and spurring high-growth entrepreneurship: Experimental evidence from a business plan competition," *American Economic Review*, 107, 2278–2307.

PICCHIO, M., S. SUETENS, AND J. C. VAN OURS (2018): "Labour supply effects of winning a lottery," *The Economic Journal*, 128, 1700–1729.

ROTERMANN, M. AND H. GILMOUR (2022): *Who Gambles and Who Experiences Gambling Problems in Canada*, Statistics Canada/Statistique Canada.

SCHMALZ, M. C., D. A. SRAER, AND D. THESMAR (2017): "Housing collateral and entrepreneurship," *The Journal of Finance*, 72, 99–132.

SEVAK, P. (2002): "Wealth shocks and retirement timing: Evidence from the nineties," *Michigan Retirement Research Center Research Paper No. WP*, 27.

TAYLOR, M. P. (2001): "Self-employment and windfall gains in Britain: Evidence from panel data," *Economica*, 68, 539–565.

WING, C., S. M. FREEDMAN, AND A. HOLLINGSWORTH (2024): "Stacked difference-in-differences," *National Bureau of Economic Research*.

ZHAO, L. AND G. BURGE (2017): "Housing wealth, property taxes, and labor supply among the elderly," *Journal of Labor Economics*, 35, 227–263.

Tables and Figures

Table 1: Descriptive Statistics

	Lottery winners		Population	
	Mean	SD	Mean	SD
Panel A. Demographics and lottery				
Age	44.56	11.42	41.11	12.15
Male	0.63	-	0.5	-
Married	0.53	-	0.56	-
Amount won	12,976	45,516	-	-
Panel B. Employment data				
Wage earnings	50,027	45,863	41,813	45,400
$\mathbb{I}$(Has wage earnings)	0.87	-	0.83	-
Number of employers	1.21	0.88	1.18	0.93
Wage earnings | has job	50,556	48,817	59,504	50,399
Panel C. Unincorporated business data				
$\mathbb{I}$(Has uninc. bus.)	0.16	-	0.18	-
$\mathbb{I}$(Has net self-emp. inc.)	0.10	-	0.17	-
Self-emp. inc.	1,664	10,840	1,969	12,128
Panel D. Incorporated business data				
$\mathbb{I}$(Has inc. bus.)	0.13	-	0.12	-
Sales	917,231	2,382,380	860,376	2,720,166
Expenses	896,879	2,338,639	875,360	2,620,220
Revenues	996,287	2,534,854	1,000,689	2,913,246
Overall equity shares (%)	9.48	29.3	9.02	30.11
Equity share (%) | owns inc. bus.	75.00	43.31	73.14	51.59
$\mathbb{I}$(Owns equity share)	0.13	-	0.12	-
Panel E. Long-Term exit from labor and business ownership				
Exit from wage labor	0.015	-	0.014	-
Exit from uninc. bus. ownership	0.11	-	0.11	-
Exit from inc. bus. ownership	0.04	-	0.03	-
Panel F. Population-level				
Assets at $t = 0$ (inc. bus.)			202,998	608,974
Assets added at $t = 0$ (uninc. bus.)			7,224	35,897

Note: This table reports summary statistics for our main variables in the sample of lottery winners. The sample is constructed as described in Section 2.6. All variables are measured in the year before the lottery win.

Table 2: Individual Characteristics and Lottery Amount

	(1) Univariate	(2) Multivariate
Age	-40.12	-16.85
	(34.53)	(37.83)
Male	-904.29	-984.43
	(763.90)	(902.90)
Married	-356.79	-808.53
	(701.45)	(777.40)
Wage earnings	-0.013*	-0.01
	(0.01)	(0.01)
Net self-emp. inc.	0.02	0.03
	(0.04)	(0.04)
$\mathbb{I}$(Has uninc. bus.)	167.23	-365.64
	(1041.89)	(1108.64)
$\mathbb{I}$(Has inc. bus.)	1626.74	166.54
	(1142.14)	(1190.26)
Financial constraints	-966.84	-1329.85
	(700.90)	(831.06)

Note: This table shows correlations between the lottery amount and individual characteristics. The sample is constructed as described in Section 2.6. All characteristics are measured two years before the lottery win. Column 1 reports coefficients from univariate regressions, where the lottery amount is separately regressed against each characteristic. Column 2 shows the results from a multivariate regression of the lottery amount on all characteristics together. All specifications include lottery product by year of win fixed effects. Standard errors are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 3: Business Ownership

	(1) 𝕀(Has inc. bus.)	(2) 𝕀(Has uninc. bus.)
Younger	0.015***	0.014*
	(0.005)	(0.008)
Older	-0.023***	-0.014
	(0.009)	(0.011)
Difference	0.038***	0.028**
	(0.010)	(0.013)

Note: This table shows the effect of additional wealth ($100,000) on business ownership estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 4: Incorporated Business Performance

	(1) Total sales	(2) Expenses	(3) Revenues
Younger	0.087	0.182	-0.250
	(0.931)	(0.802)	(0.924)
Older	-1.571**	-1.153*	-1.515**
	(0.701)	(0.685)	(0.723)
Difference	1.658	1.335	1.265
	(1.165)	(1.055)	(1.174)

Note: This table shows the effect of additional wealth ($1) on business performance estimated using the model in equation (2). The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Total sales are defined as the sum of reported sales of goods and services. Expenses are defined as the sum of all non-farm expenses reported. Revenues are defined as the sum of farm and non-farm revenue. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 5: Unincorporated Business Performance

	(1) 𝕀(Has gross self-emp. inc.)	(2) 𝕀(Has net self-emp. inc.)	(3) Net self-emp. inc.
Younger	0.015**	0.017***	0.003**
	(0.006)	(0.006)	(0.001)
Older	-0.004	-0.008	-0.007*
	(0.010)	(0.008)	(0.004)
Difference	0.019	0.025**	0.010**
	(0.012)	(0.010)	(0.004)

Note: This table shows the effect of additional wealth on business performance estimated using the model in equation (2). Columns (1) and (2) show the effects of $100,000 in lottery wins, while column (3) shows the effect of $1 of extra wealth. The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. 𝕀(Has gross self-emp. inc.) is an indicator for having gross self-employment income in the tax records where gross self-employment income is all self-employment income without deducting expenses (similar to revenue). 𝕀(Has net self-emp. inc.) is an indicator for having net self-employment income in the tax records where net self-employment income is measured as gross self-employment income minus eligible deductions (similar to profits). All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 6: Wage Labor Supply

	(1) Wage earnings	(2) 𝕀(Has wage earnings)	(3) Nb of jobs	(4) Wage earnings | has job
Younger	-0.047***	-0.055***	-0.103***	-0.038***
	(0.007)	(0.007)	(0.015)	(0.011)
Older	-0.037***	-0.073***	-0.096***	-0.034***
	(0.009)	(0.013)	(0.019)	(0.011)
Difference	-0.010	0.018	-0.007	-0.003
	(0.012)	(0.015)	(0.024)	(0.015)

Note: This table shows the effect of additional wealth on wage labor supply estimated using the model in equation (2). Columns (2) and (3) show the effects of $100,000 in lottery wins, while columns (1) and (4) show the effects of $1 of extra wealth. The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Wage earnings are defined as employment income received from a business enterprise, including wages, salaries, and commissions, before deductions, and excluding self-employment income. 𝕀(Has wage earnings) is an indicator for having some wage earnings in the tax records. Nb of jobs is defined as the number of jobs held by the individual in a tax year using employer-employee pairing derived from the administrative data. Wage earnings | has job is wage earnings conditional on having at least one employer. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 7: Business Ownership After Reducing Work (by at least 20%)

	(1) 𝕀(Has inc. bus.)	(2) 𝕀(Has uninc. bus.)	(3) 𝕀(Has inc. or uninc. bus.)
Young	0.026**	0.043**	0.046***
	(0.013)	(0.020)	(0.016)
Old	-0.002	-0.021	-0.007
	(0.009)	(0.025)	(0.021)
Difference	0.028*	0.064**	0.053**
	(0.015)	(0.032)	(0.027)

Note: This table shows the effect of additional wealth ($100,000) on opening a business after reducing work estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 8: Long-Term Exit from Wage Labor Supply and Entrepreneurship

	5-year exit from		
	(1) Wage earnings	(2) Uninc. bus.	(3) Inc. bus.
Young	0.021***	0.007	0.001
	(0.003)	(0.017)	(0.007)
Old	0.038***	0.002	0.033**
	(0.007)	(0.017)	(0.013)
Difference	-0.017**	0.004	-0.033**
	(0.008)	(0.024)	(0.015)

Note: This table shows the effect of additional wealth ($100,000) on the probability of exit from wage labor and entrepreneurship estimated using the model in equation (2). The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. We measure 5-year exits from wage earnings as having no employment income for the individual in the following 5 years from the year observed. We define 5-year exits from incorporated and unincorporated businesses as no ownership in these types of businesses for the following 5 years. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table 9: Business Ownership and Financial Constraint Effects

	(1) Younger	(2) Older
A. Incorporated firms		
Constrained	0.011	-0.041**
	(0.007)	(0.019)
Unconstrained	0.017**	-0.018*
	(0.007)	(0.010)
Difference	-0.006	-0.023
	(0.010)	(0.022)
B. Unincorporated firms		
Constrained	0.005	-0.011
	(0.012)	(0.017)
Unconstrained	0.019*	-0.015
	(0.010)	(0.013)
Difference	-0.013	0.004
	(0.016)	(0.021)

Note: This table shows the effect of additional wealth ($100,000) on business ownership by financial constraints. The results are estimated using equation (2). The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. We measure having an incorporated business with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. We measure financial constraints with an indicator variable equal to 1 if the winner has no savings (as measured by no interest income on savings accounts, no dividends nor capital gains) and does not contribute to personal retirement accounts (no pension savings) in the pre-win years, and 0 otherwise. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

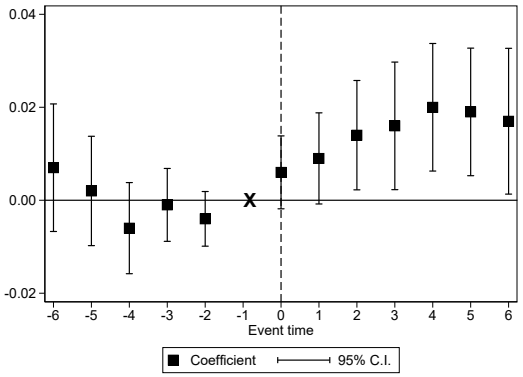
Table 10: Business Ownership by Prior Experience

	Inc. bus.		Uninc. bus.	
	(1) Never owner	(2) Ever owner	(3) Never owner	(4) Ever owner
Younger	0.014***	0.018	0.022***	-0.029
	(0.005)	(0.020)	(0.007)	(0.024)
Older	0.002	-0.097***	0.000	-0.037
	(0.005)	(0.027)	(0.009)	(0.025)
Difference	0.013*	0.116***	0.022*	0.008
	(0.007)	(0.033)	(0.012)	(0.034)

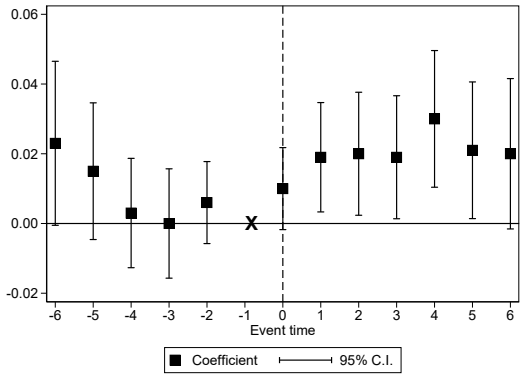
Note: This table shows the effect of additional wealth ($100,000) on business ownership estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. We measure prior business ownership as an indicator variable equal to 1 (Ever owner) if the winner had incorporated (unincorporated) ownership at least once before the lottery win date, and 0 otherwise (Never owner). All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Figure 1: Business Ownership

I. Younger

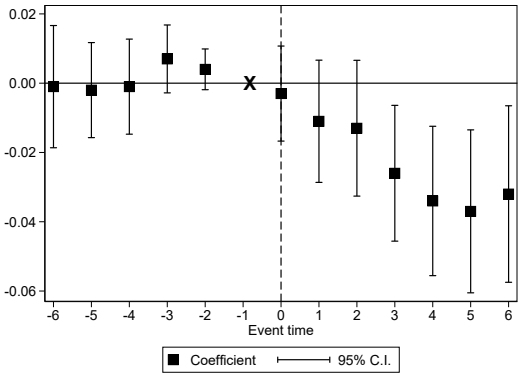


(a) Incorporated

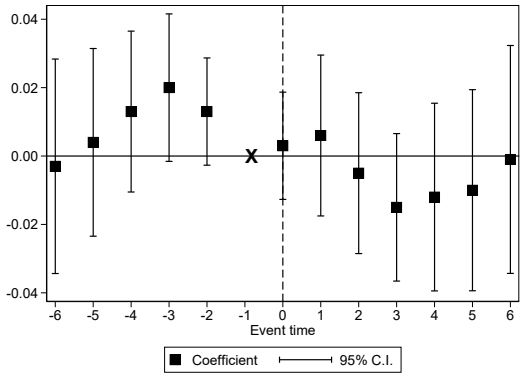


(b) Unincorporated

II. Older



(c) Incorporated

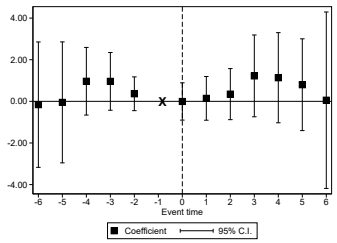


(d) Unincorporated

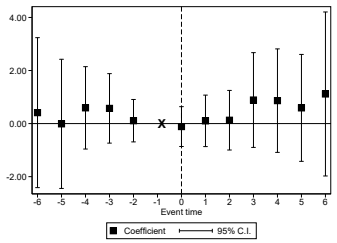
Note: This figure shows the effect of additional wealth ($100,000) on business ownership estimated using equation (1). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure 2: Business Performance of Incorporated Firms

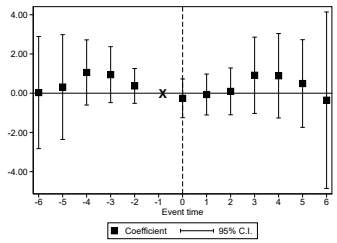
I. Younger



(a) Total sales

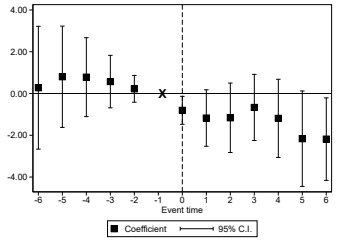


(b) Expenses

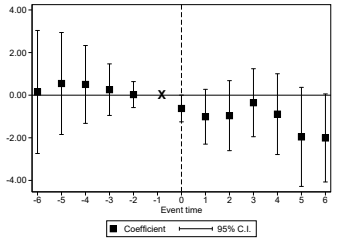


(c) Revenues

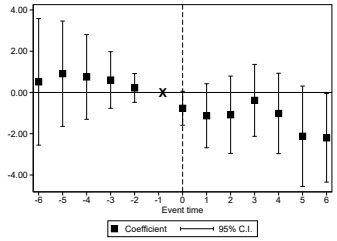
II. Older



(d) Total sales



(e) Expenses

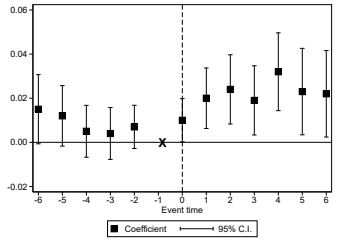


(f) Revenues

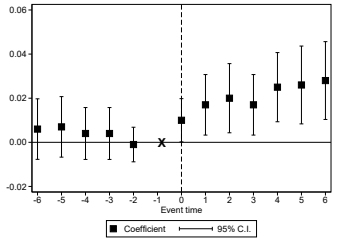
Note: This figure shows the effect of additional wealth ($1) on business performance estimated using equation (1). The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Total sales are defined as the sum of reported sales of goods and services. Expenses are defined as the sum of all non-farm expense amounts reported. Revenues are defined as the sum of farm and non-farm revenue. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure 3: Business Performance of Unincorporated Firms

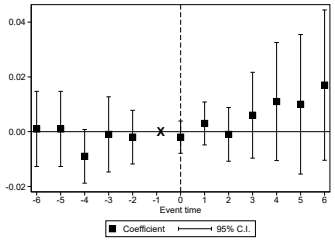
I. Younger



(a) 𝕀(Has gross self-emp. inc.)

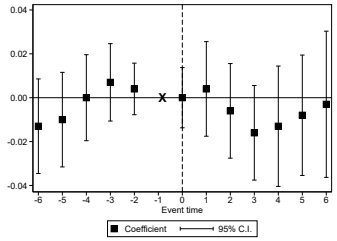


(b) 𝕀(Has net self-emp. inc.)

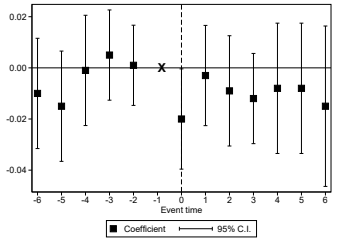


(c) Net self-emp. inc.

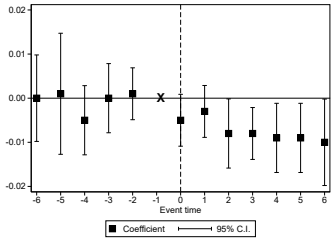
II. Older



(d) 𝕀(Has gross self-emp. inc.)



(e) 𝕀(Has net self-emp. inc.)

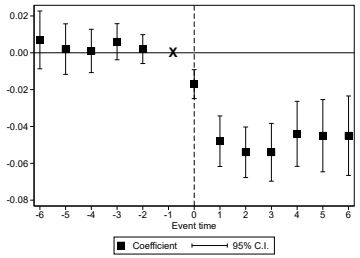


(f) Net self-emp. inc.

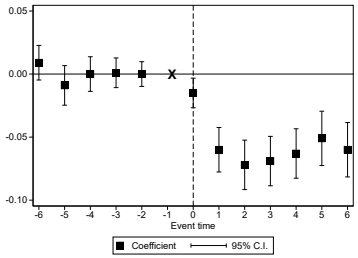
Note: This figure shows the effect of additional wealth on business performance estimated using the model in equation (1). Panels (a), (b), (d) and (e) show the effects of $100,000 in lottery wins, while panels (c) and (f) show the effect of $1 of extra wealth. The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having gross self-employment income is measured using a dummy variable for having gross self-employment income in the tax records. Having net self-employment income is measured using a dummy variable for having net self-employment income in the tax records. Net self-employment income is measured in dollars as the gross self-employment income minus eligible deductions (similar to profits). Gross self-employment income is all self-employment income without deducting expenses (similar to revenue). All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure 4: Wage Labor Supply

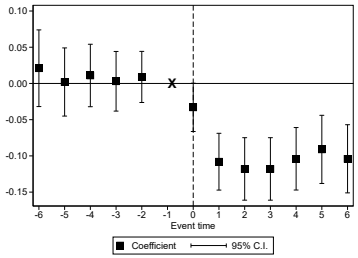
I. Younger



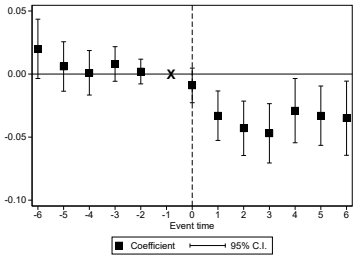
(a) Wage earnings



(b) Has wage earnings

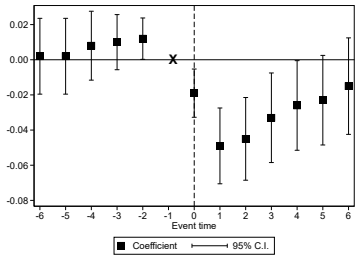


(c) Nb of jobs

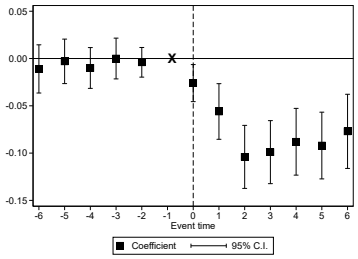


(d) Wage earnings | has job

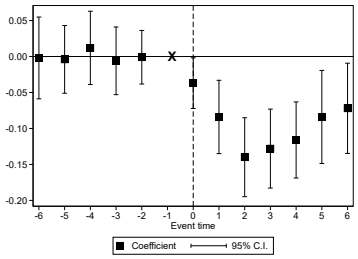
II. Older



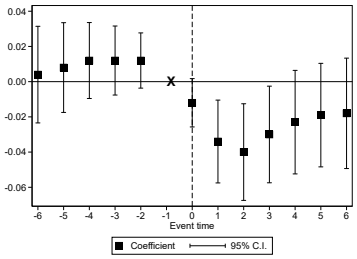
(e) Wage earnings



(f) Has wage earnings



(g) Nb of jobs

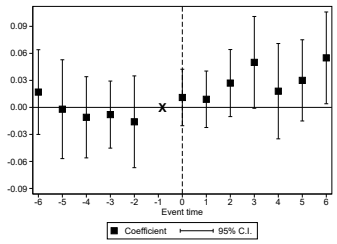


(h) Wage earnings | has job

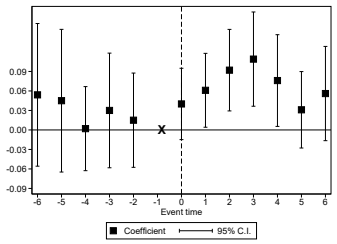
Note: This figure shows the effect of additional wealth on wage labor supply estimated using equation (1). Panels (b), (c), (f) and (g) show the effects of $100,000 in lottery wins, while panels (a), (d), (e) and (h) show the effect of $1 of extra wealth. The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Wage earnings are defined as employment income received from a business enterprise, including wages, salaries, and commissions, before deductions, and excluding self-employment income. Having wage earnings is measured with a dummy variable for having some wage earnings in the tax records. Number of jobs is defined as the number of jobs held by the individual in a tax year using employer-employee pairing derived from the administrative data. Wage earnings conditional on having a job are measured conditional on having at least one employer. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure 5: Business Ownership After Reducing Work (by at least 20%)

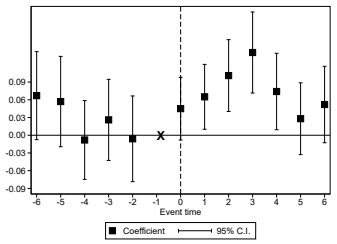
I. Younger



(a) $\mathbb{I}$(Has inc. bus.)

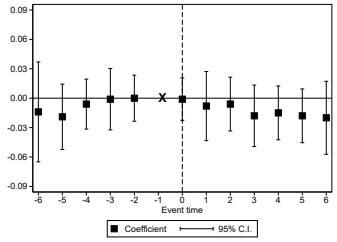


(b) $\mathbb{I}$(Has uninc. bus.)

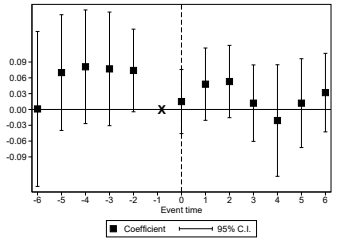


(c) $\mathbb{I}$(Has inc. or uninc bus.)

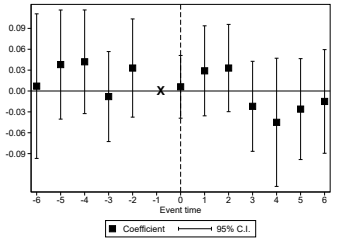
II. Older



(d) $\mathbb{I}$(Has inc. bus.)



(e) $\mathbb{I}$(Has uninc. bus.)

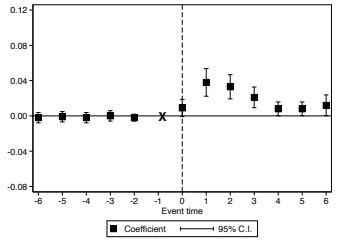


(f) $\mathbb{I}$(Has inc. or uninc bus.)

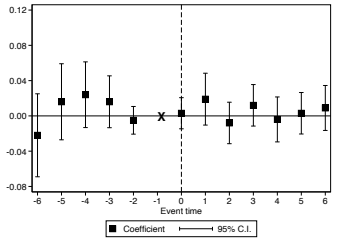
Note: This figure shows the effect of additional wealth ($100,000) on business ownership estimated using equation (1). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure 6: Long-Term Exit from Wage Labor and Entrepreneurship

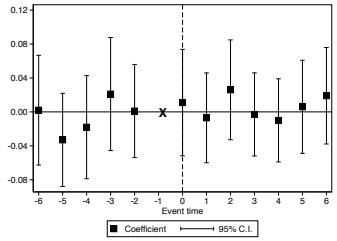
I. Younger



(a) Exit wage earnings

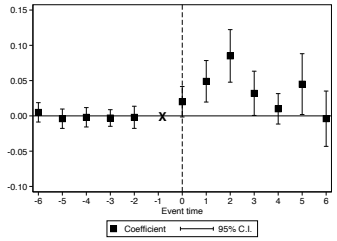


(b) Exit inc. bus.

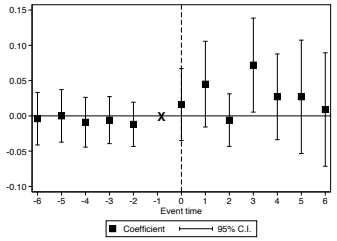


(c) Exit uninc. bus.

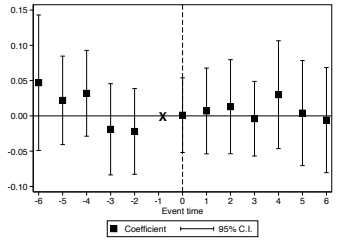
II. Older



(d) Exit wage earnings



(e) Exit inc. bus.



(f) Exit uninc. bus.

Note: This figure shows the effect of additional wealth ($100,000) on the probability of exit from wage labor and entrepreneurship estimated using the model in equation (1). The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. We measure 5-year exits from wage earnings as having no employment income for the individual in the following 5 years from the year observed. We define 5-year exits from incorporated and unincorporated businesses as no ownership in these types of businesses for the following 5 years. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

A Appendix: Extensions

A.1 The Effect of Wealth on Business Ownership Across Age Bins

In all of our tests, we define older and younger people as people aged 55 to 64 and 21 to 53, respectively, on the day of their lottery win. In this appendix section, we split our full sample into four equal age intervals to confirm that our main findings on the differences between older and younger people's entrepreneurial responses to wealth do not depend critically on our specific definitions and are generally robust to perturbations of age.

To confirm our findings' robustness to age-based perturbations, we study the effect on incorporated and unincorporated business ownership for people in four age-based categories: people aged 21 to 31, 32 to 42, 43 to 53, and 54 to 64.[21] We present our findings in Table A3 and Figure A1.

Generally, for the groups making up our younger cohort, the effect on incorporated business ownership is positive, with the coefficients in Table A3 being similar across all three groups, though only the effect for the 43 to 53 age group is statistically significant. This is consistent with the positive effect on incorporated business ownership for the younger people cohort. The effect on unincorporated business ownership for the younger people groups is more mixed, with a clear positive effect for the youngest group and opposite effects on the two older groups. Again, this is consistent with the weaker positive effect on unincorporated business ownership for the younger people cohort. As Figure A1 panels (a) to (c) and (e) to (g) show, the three age groups' unincorporated and incorporated business ownership dynamic responses to wealth are quite similar to what we find for the younger people cohort overall (see Figure 1).

Among the oldest age group (54 to 64), Table A3 shows a reduction in incorporated business ownership and no effect on unincorporated business ownership, much like the older people cohort in Table 3. Figure A1 panels (d) and (h) also show that the dynamics of the effects on incorporated and unincorporated business ownership are basically the same as those for the older people cohort (see Figure 1). As the oldest age group (54 to 64) and our older people cohort (55 to 64) are nearly identical, it is perhaps unsurprising that the effects we show for this oldest age group are quite similar to those for the older people cohort. Nevertheless, it is helpful that the slight perturbation of the interval does not significantly change the effect of wealth on either incorporated or unincorporated business onwership for older people.

A.2 Wealth and the Ownership of Equity Shares

In our main tests on the business ownership effects of additional wealth, we examine discrete changes in business ownership among older and younger people. Changing their ownership share in businesses is an alternative channel through which these people may respond to additional wealth. For instance, rather than selling off their business altogether, some older people may choose to sell most of their equity in the business while retaining some (much smaller) stake. In this appendix section, we study whether additional wealth induces any such intensive margin equity share effects among older and younger people.

To test whether additional wealth changes fractional ownership, we study the effects of lottery winnings on older and younger people's ownership shares in incorporated businesses. The administrative data provided in CEEDD includes information on fractional ownership of incorporated businesses, allowing us to directly study this question.

[21] We note that the last category does not match up with our older cohort age range of 55 to 64. We chose the age ranges for the four groups to make sure we had equal age intervals (of 11 years each). But, it is useful for us that the age ranges do not match, as it is further evidence of the robustness of our age-based definitions.

We report our findings in Figure A2 and Table A4. In both exhibits, we show the effects of additional wealth on three equity share-related variables: overall equity share, equity share conditional on owning an incorporated business, and whether the person owns any equity in an incorporated business. As we show in Table A4, column (1), an additional $100,000 increases young people's equity share in incorporated businesses by 1.4 percentage points and decreases old people's equity share by 2.2 percentage points. Moreover, we find the difference to be statistically significant. Figures A2 (a) and (d) show that these differences in the effects on overall equity share increase over time. However, Table A4, column (2), and Figures A2 (b) and (e) show that, while there is a weakly statistically significant decrease in older people's equity shares of incorporated businesses they retain, there is no analogous effect on younger people. And column (3) of Table A4 and Figures A2 (c) and (f) show that the effect on overall equity shares we documented above arise primarily from the "extensive margin." Younger people become significantly more likely to own any equity shares and older people become significantly less likely to own equity shares in response to additional wealth.

Jointly, these findings indicate that the effect on business ownership of additional wealth arises primarily through discrete changes in ownership. There is some weak evidence that older people, in addition to entirely selling off their businesses also reduce their stake in incorporated businesses they retain. But younger people do not alter their ownership of incorporated businesses they already owned in response to additional wealth at all.

A.3 Variation in Ownership Across Industry Sectors

While our primary analysis studies the overall effect of wealth on younger and older people's entrepreneurship, it may also be important to understand the sectoral differences in older and younger people's entrepreneurial responses to wealth. For instance, the implications of a broad-based exit from entrepreneurship among older people are very different from a narrowly-focused exit from just one sector, e.g., retail trade. Similarly, increased entry into information technology among young people has significantly different economic implications than their increased entry into real estate. For these reasons, in this section, we analyze the sectoral composition of the entrepreneurial responses of older and younger people to additional wealth.

Businesses who file tax data are required to designate the main NAICS industry in which the business operates. We use this industry classification data to segment our complete data across industries. Based on these NAICS classifications, we group all firms into nine broad industry sectors, which are listed at the top of Table A5. We then run our analysis on the effect of additional wealth for younger and older people on incorporated and unincorporated business ownership separately for each of these nine industries.

We report the findings of our industry subsample analyses in Table A5.[22] The first thing we note is that older people's exit from entrepreneurship in response to wealth is quite broad-based. Across incorporated and unincorporated businesses, older people respond to additional wealth by reducing business ownership in almost half (four of the nine) industry sectors. Moreover, some of the industries that older people exit seem important in terms of their significance for economic growth (manufacturing, finance and insurance, management and services). On the other hand, we find that younger people's entry into entrepreneurship due to wealth is quite narrow, showing up only in the real estate, rental, and lease industry sector. Taken together, these findings suggest a broad and potentially economically significant exit from entrepreneurship among older people

[22] As these subsamples are significantly smaller than the sample used for our primary analyses, we expect these subsample analyses to have much weaker statistical power.

and a narrow and likely less economically significant entry into entrepreneurship among younger people in response to additional wealth.

Tables

Table A1: Definitions of Variables

Variable	Definition	Source
A. Demographics and event-study		
Unique individual identifier	Unique longitudinal person identifier (casenum)	CEEDD
Year	Year of tax record	CEEDD
Year of win (cohort)	Year of payment of the lottery prize	Lottery Corporation
Amount won	Amount of lottery prize	Lottery Corporation
Event time	Number of years from the year of winning the lottery	Derived
After	Indicator if the observed year is during the event time t+0 to t+6	Derived
Treated flag	Indicator if the individual is part of the treatment group	Derived
Age	Difference between the tax year and harmonized birth year from T1	T1PMF
Younger	Indicator variable equal to 1 if the winner is aged 21 to 54 the year of the win, and 0 otherwise	Derived
Older	Indicator variable equal to 1 if the winner is aged 55 to 64 the year of the win, and 0 otherwise	Derived
Financial constraint	Indicator variable equal to 1 if the winner has no investment income and does not contribute to personal retirement accounts in the pre-win years, and 0 otherwise	Derived
B. Wage Labor Supply		
Wage earnings	Employment income received from a business enterprise, including wages, salaries, and commissions (self-employment income is excluded)	T1PMF
$\mathbb{I}$(Has wage earnings)	Indicator for having wage earnings in the current year	Derived
Nb of jobs	The number of jobs held by the individual in a tax year using employer-employee pairing	T4ROE
Wage earnings $\mid$ has job	Wage earnings, conditional on having at least one employer	Derived
5-year exit from wage earnings	Indicator representing if the individual does not earn employment income for the following 5 years from the year observed	Derived
C. Unincorporated business		
$\mathbb{I}$(Has uninc. bus.)	Indicator for owning at least one unincorporated business	Derived
$\mathbb{I}$(Has gross self-emp. inc.)	Indicator for having gross self-employment income	Derived
$\mathbb{I}$(Has net self-emp. inc.)	Indicator for having net self-employment income	Derived
Net self-emp. inc.	Net self-employment income (in dollars)	T1FDBD
5-year exit from uninc. bus.	Indicator representing if the individual does not own any incorporated business for the following 5 years from the year observed	Derived
D. Incorporated business		
$\mathbb{I}$(Has inc. bus.)	Indicator for owning at least one incorporated business	Derived
Total sales	Sum of reported sales of goods and services	NALMF
Expenses	Sum of all non-farm expense amounts reported	NALMF
Revenues	Sum of farm and non-farm revenue	NALMF
5-year exit from incorp. bus.	Indicator representing if the individual does not own any unincorporated business for the following 5 years from the year observed	Derived

Table A2: The Effect of Wealth on Business Ownership (Full Sample)

(1)	(2)
𝕀(Has inc. bus.)	𝕀(Has uninc. bus.)
0.004	0.007
(0.005)	(0.006)

Note: This table presents the effect of additional wealth ($100,000) on business ownership estimated using equation (2) without the interaction of Younger with After × Amount × Treated. The sample is constructed as described in Section 2.6. We identify having an incorporated business as having at least one incorporated business, and follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A3: Business Ownership (by age bins)

	(1) $\mathbb{I}$(Has inc. bus.)	(2) $\mathbb{I}$(Has uninc. bus.)
Age 21 to 31	0.011	0.040***
	(0.013)	(0.013)
Age 32 to 42	0.016	-0.014
	(0.011)	(0.014)
Age 43 to 53	0.015**	0.008
	(0.007)	(0.013)
Age 54 to 64	-0.020**	-0.006
	(0.008)	(0.011)

Note: This table shows the effect of additional wealth ($100,000) on business ownership estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A4: Incorporated Equity Ownership Shares

	(1) Overall equity shares	(2) Equity share | owns inc. bus.	(3) 𝕀(Owns equity share)
Younger	0.014**	-0.004	0.014***
	(0.006)	(0.024)	(0.005)
Older	-0.022***	-0.030*	-0.023***
	(0.008)	(0.018)	(0.009)
Difference	0.036***	0.026	0.038***
	(0.009)	(0.029)	(0.010)

Note: This table shows the effect of additional wealth ($100,000) on business ownership (equity) shares estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Overall equity shares measure both extensive (buying or selling a whole business) and intensive margins (buying or selling parts of business, but retaining some ownership). Equity shares conditional on retaining ownership measure an intensive margin of adjustment. 𝕀(Owns equity share) is an indicator of owning any shares in a corporation. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A5: Business Ownership by Industry

	(1) Natural resources and mining	(2) Manufact., Construct., Utilities, and Transport	(3) Retail and wholesale trade	(4) Information and services	(5) Finance and insurance	(6) Real estate, rental, and lease	(7) Management and services	(8) Hospitality, Education, and healthcare	(9) Other services and public admin
A. Incorporated firms									
Young	0.001	0.001	0.003	0.000	0.002	0.005*	0.002	0.000	0.002
	(0.001)	(0.003)	(0.002)	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Old	0.000	-0.010*	-0.003	0.002	-0.004***	-0.001	-0.011*	0.000	-0.006
	(0.001)	(0.005)	(0.002)	(0.002)	(0.001)	(0.002)	(0.006)	(0.001)	(0.004)
Difference	0.002	0.011*	0.006**	-0.002	0.006**	0.006*	0.013*	0.000	0.008*
	(0.002)	(0.006)	(0.003)	(0.002)	(0.002)	(0.004)	(0.007)	(0.002)	(0.005)
B. Unincorporated firms									
Young	-0.001	0.001	-0.001	-0.003	0.001	0.008***	-0.001	-0.002	0.000
	(0.001)	(0.003)	(0.002)	(0.003)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Old	0.002*	-0.004	-0.002	0.000	0.000	-0.008**	-0.001	0.002	0.000
	(0.001)	(0.004)	(0.003)	(0.003)	(0.000)	(0.003)	(0.003)	(0.001)	(0.001)
Difference	-0.003*	0.005	0.001	-0.003	0.001	0.015***	0.000	-0.004	0.001
	(0.002)	(0.005)	(0.004)	(0.004)	(0.001)	(0.004)	(0.003)	(0.002)	(0.001)

Note: This table shows the effect of additional wealth ($100,000) on business ownership by industry estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. We use two-digit NAICS codes of incorporated and unincorporated businesses owned by lottery winners to define nine broad industries. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A6: The Effect of Wealth on Business Performance (Full Sample)

	(1)	(2)	(3)
A. Incorporated Business Performance			
	Total sales	Expenses	Revenues
	-0.520	-0.343	-0.720
	(0.629)	(0.566)	(0.630)
B. Unincorporated Business Performance			
	𝕀(Has gross self-emp. inc.)	𝕀(Has net self-emp. inc.)	Net self-emp. inc.
	0.010*	0.011**	0.001
	(0.005)	(0.005)	(0.001)

Note: This table presents the effect of additional wealth on business performance estimated using equation (2) without the interaction of Younger with After $\times$ Amount $\times$ Treated. Panel A and column (3) in panel B show the effect of \$1 in additional wealth, while columns (1) and (2) of panel B show the effect of \$100,000 in extra wealth. The sample is constructed based on Section 2.6. Total sales are defined as the sum of reported sales of goods and services. Expenses are defined as the sum of all non-farm expense amounts reported. Revenues are defined as the sum of farm and non-farm revenue. Having gross self-employment income is measured using a dummy variable for having gross self-employment income in the tax records. Having net self-employment income is measured using a dummy variable for having net self-employment income in the tax records. Net self-employment income is measured in dollars as the gross self-employment income minus eligible deductions (similar to profits). Gross self-employment income is all self-employment income without deducting expenses (similar to revenue). All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A7: The Effect of Wealth on Wage Labor Supply (Full Sample)

(1) Wage earnings	(2) 𝕀(Has wage earnings)	(3) Nb of jobs	(4) Wage earnings | has job
-0.045***	-0.061***	-0.100***	-0.040***
(0.006)	(0.006)	(0.012)	(0.008)

Note: This table presents the effect of additional wealth on business performance estimated using equation (2) without the interaction of Younger with After $\times$ Amount $\times$ Treated. Columns (2) and (3) show the effects of $100,000 in lottery wins, while columns (1) and (4) show the effects of $1 of extra wealth. The sample is constructed based on Section 2.6. Wage earnings are defined as employment income received from a business enterprise, including wages, salaries, and commissions, before deductions, and excluding self-employment income. Having wage earnings is measured with a dummy variable for having some wage earnings in the tax records. Number of jobs is defined as the number of jobs held by the individual in a tax year using employer-employee pairing derived from the administrative data. Wage earnings conditional on having a job are measured conditional on having at least one employer. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

Table A8: The Effect of Wealth on Long-Term Exit from Wage Labor Supply and Entrepreneurship (Full Sample)

5-year exit from		
(1)	(2)	(3)
Wage earnings	Inc. bus.	Uninc. bus.
0.053***	-0.001	0.001
(0.006)	(0.004)	(0.008)

Note: This table shows the effect of additional wealth ($100,000) on the probability of exit from wage labor and entrepreneurship estimated using equation (2) without the interaction of Younger with After $\times$ Amount $\times$ Treated. The sample is constructed based on Section 2.6. We measure 5-year exits from wage earnings as having no employment income for the individual in the following 5 years from the year observed. We define 5-year exits from incorporated and unincorporated businesses as no ownership in these types of businesses for the following 5 years. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the level of the individual in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

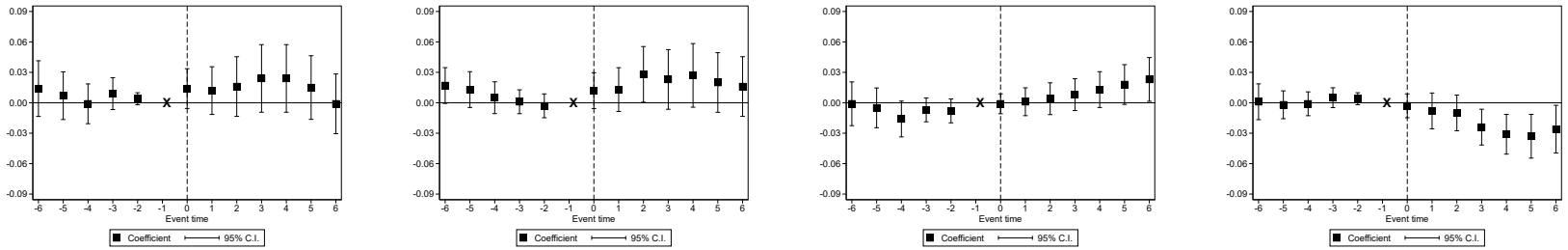
Table A9: Starting a Business After Reducing Work (10% reduction or more)

	(1) 𝕀(Has inc. bus.)	(2) 𝕀(Has uninc. bus.)	(3) 𝕀(Has inc. Or uninc. bus.)
Young	0.020**	0.029*	0.038***
	(0.013)	(0.020)	(0.016)
Old	-0.006	-0.028	-0.011
	(0.009)	(0.025)	(0.021)
Difference	0.026**	0.057**	0.049**
	(0.015)	(0.032)	(0.027)

Note: This table shows the effect of additional wealth ($100,000) on opening a business after reducing work estimated using the model in equation (2). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors clustered at the individual level in each cohort-year are presented in parentheses. ***, **, and * represent significance at the 1, 5 and 10 percent levels, respectively.

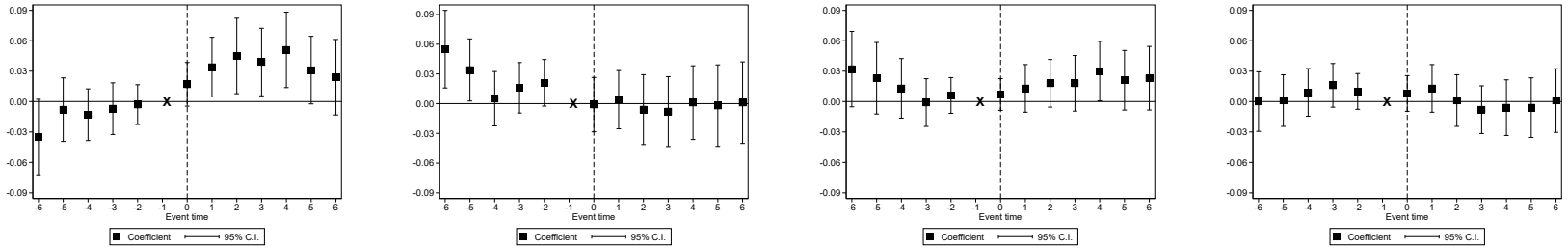
Figure A1: Business Ownership (by age bins)

I. Incorporated Business



(a) Age 21 to 31 (b) Age 32 to 42 (c) Age 43 to 53 (d) Age 54 to 64

II. Unincorporated Business

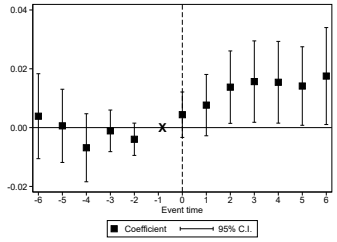


(e) Age 21 to 31 (f) Age 32 to 42 (g) Age 43 to 53 (h) Age 54 to 64

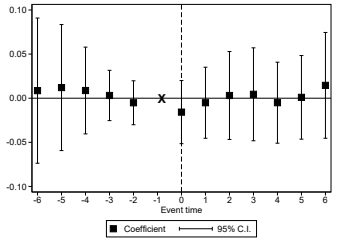
Note: This figure shows the effect of additional wealth on wage labor supply estimated using equation (1). Panels (b), (c), (f) and (g) show the effects of $100,000 in lottery wins, while panels (a), (d), (e) and (h) show the effect of $1 of extra wealth. The sample is constructed based on Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Wage earnings are defined as employment income received from a business enterprise, including wages, salaries, and commissions, before deductions, and excluding self-employment income. Having wage earnings is measured with a dummy variable for having some wage earnings in the tax records. Number of jobs is defined as the number of jobs held by the individual in a tax year using employer-employee pairing derived from the administrative data. Wage earnings conditional on having a job are measured conditional on having at least one employer. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure A2: Equity Shares

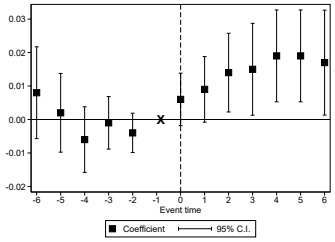
I. Younger



(a) Overall equity shares

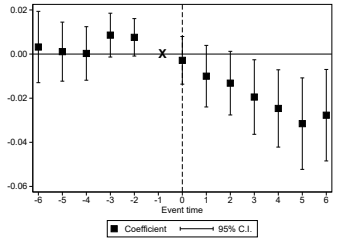


(b) Equity share | owns inc. bus.

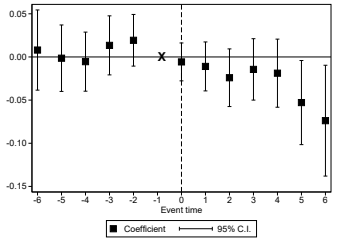


(c) $\mathbb{I}$(Owns equity share)

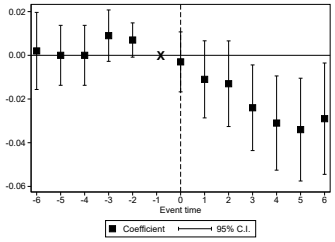
II. Older



(d) Overall equity shares



(e) Equity share | owns inc. bus.

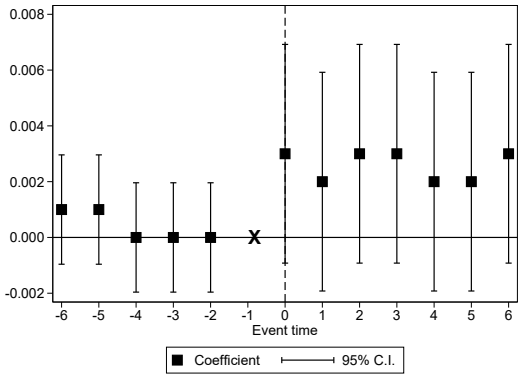


(f) $\mathbb{I}$(Owns equity share)

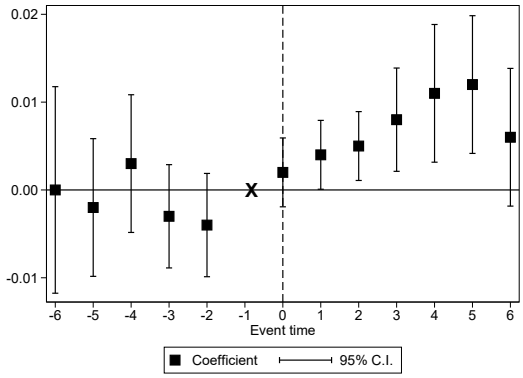
Note: This figure shows the effect of additional wealth ($100,000) on business ownership (equity) shares estimated using the model in equation (1). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Overall equity shares measure both extensive (buying or selling a whole business) and intensive margins (buying or selling parts of business, but retaining some ownership). Equity shares conditional on retaining ownership measure an intensive margin of adjustment. $\mathbb{I}$(Owns equity share) is an indicator of owning any shares in a corporation. All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.

Figure A3: Business Ownership in Selected Industries

I. Younger

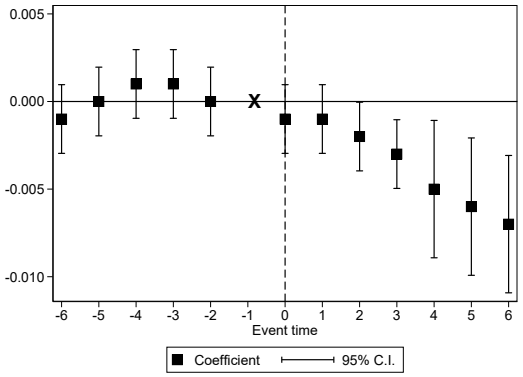


(a) Incorporated in finance and insurance

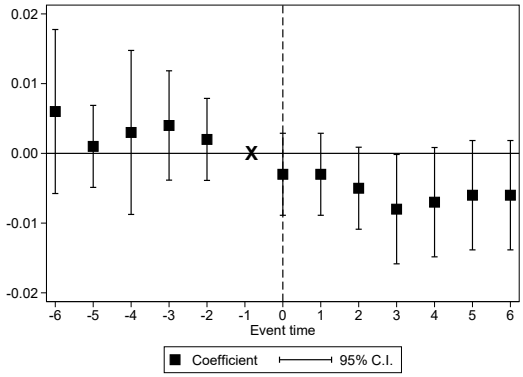


(b) Unincorporated in real estate, rental and lease

II. Older



(c) Incorporated in finance and insurance



(d) Unincorporated in real estate, rental and lease

Note: This figure shows the effect of additional wealth ($100,000) on business ownership in selected industries estimated using equation (1). The sample is constructed as described in Section 2.6. Younger and older represent winners aged 21 to 54 and 55 to 64, respectively, in the year of the win. Having an incorporated business is measured with an indicator variable for owning at least one incorporated business, and we follow the same definition for unincorporated businesses. We use two-digit NAICS codes of incorporated and unincorporated businesses owned by lottery winners to define nine broad industries (see Table A5 for all industries). This figure shows our results for two industries: finance and insurance (NAICS code 52) and real estate, rental and lease (NAICS code 53). All specifications include individual and calendar-year fixed effects, both of which we fully saturate with cohort-year fixed effects. Standard errors are clustered at the level of the individual in each cohort-year. Point estimates are given along with the 95% confidence interval.