



What Data on Older Households Tell Us About Wealth Inequality and Entrepreneurship Growth

By Christian E. Weller, Jeffrey B. Wenger, Benjamin Lichtenstein, and Carolyn Arcand May 2015

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Introduction and summary

Entrepreneurial activity—a measure of a country’s dynamism and indicator of economic opportunity—can enhance economic growth through a number of channels. First, entrepreneurship fosters innovation through the development and marketability of advanced, often groundbreaking products and services. Second, small businesses tend to be more capital intensive than larger ones, which accelerates the adaptation and diffusion of new technologies and deepens an economy’s capital base. Third, starting and running one’s own business often allows entrepreneurs to better contribute their talent to economic activities over a longer, sustained period of time than in wage and salary employment.

Since the 1990s, entrepreneurship has become especially pronounced among older households, defined as those with heads of household age 50 and older. At the same time, entrepreneurship among younger households has fallen, slowing overall entrepreneurship in the United States.¹

The growth of entrepreneurship among older households provides the opportunity to study the factors that contribute and possibly impede entrepreneurship growth. In particular, the entrepreneurship growth among older households coincides with increasing wealth inequality. The households that make up the pool from which the majority of older entrepreneurs hail—white, married, and college educated—has seen faster and more sustained wealth gains than other households as we show in this report. It is thus possible that disproportionate wealth increases among a particular subset of households contributed to limited increases in entrepreneurship associated with these wealth gains.

Alternatively, older households may have moved into entrepreneurship because they have faced increasing economic pressures in wage and salary employment such as increasing long-term unemployment spells. That is, older entrepreneurship may have increased not because older households had more money but because they needed more money. The economic pressures associated with wage and salary employment have also lowered the retirement preparedness of

households nearing retirement.² As a consequence, older households may look at options to work longer as a way to increase their retirement preparedness. However, some of the phenomena that create economic pressures—especially longer unemployment spells—could potentially stand in the way of older households working longer in wage and salary employment. Thus, self-employment may offer a promising alternative path for older households who are facing lowered retirement preparedness.

This report looks at the Federal Reserve’s triennial Survey of Consumer Finances, or SCF, a key nationally representative data set on household finances to analyze whether the disproportionate wealth gains for some older households contributed to entrepreneurship growth among households age 50 and older or whether alternative explanations for older entrepreneurship growth are more likely. More wealth could give those households interested in becoming entrepreneurs more collateral to use in order to start and expand their businesses. Furthermore, greater wealth may also give households, especially older ones, the opportunity to receive capital income—realized capital gains and interest and dividend income—as an income buffer against risky business income. By implication, though, entrepreneurship growth would be limited to a select subset of the population—young or old—if wealth is a key determinant of entrepreneurship. As wealth inequality has increased, only a small subset of households experienced growing opportunities to collateralize their wealth and use their wealth to diversify their income away from risky business income.

Data analysis for this report revealed the following conclusions:

- **Entrepreneurship growth has been concentrated among older households since 1998:** Entrepreneurship has fallen among households younger than 50 years from 1989 to 2013, while it increased for older households during that period. Older entrepreneurship growth appears to be especially noticeable when comparing the years post-1998 with prior years—up to and including 1998—as older entrepreneurship became more widespread in the later years than before.³
- **Wealth inequality has increased along key demographic lines:** Wealth has particularly grown among the subset of households from which entrepreneurs are increasingly found—white, married, college educated, and 50 years old and older. Households outside of this narrowly defined group have generally experienced little to no wealth increases over time. That is, older middle-class households may have been left out of entrepreneurship opportunities because they lacked savings and owed a substantial amount of debt.⁴

- **Older entrepreneurs increasingly rely on their wealth as collateral:** The share of older entrepreneurs who use their own personal wealth as collateral increased after the mid-1990s. Furthermore, the amount of personal wealth that these entrepreneurs collateralized has simultaneously increased as well.
- **Older entrepreneurs rely on capital income for income diversification more and more:** The share of older entrepreneurs with substantial capital income— income that is greater than \$5,000 in 2013 dollars—has gone up since the mid-1990s.
- **It is all about economic opportunities, not economic pressures:** There is little evidence suggesting that economic pressures in wage and salary employment led older households to increasingly seek out entrepreneurship. For a subset of older households, entrepreneurship instead appeared to be driven by growing opportunities, such as the ability to tap into more wealth to start a business. Also, expanding access to Social Security benefits as a means to diversify income increasingly matters for older entrepreneurs, underscoring that growing opportunities relate to rising entrepreneurship.

The data analysis for this report, while focusing on older households, tells an interesting story about the potential link between entrepreneurship and wealth inequality that is relevant for economic policy more broadly. Rising wealth among a subset of higher-income households gave those households the opportunity to pursue entrepreneurial activities that otherwise would not have existed. Older households pursued these activities to generate streams of income that were unrelated to risky business income and because they could use their wealth as collateral. Policymakers interested in promoting increased entrepreneurship among older households—where economic pressures have been very noticeable—could consequently pursue two separate but not mutually exclusive paths: They could find ways to build wealth on a broader base than has been the case in the past, especially by emphasizing asset building among people of color, single women, and younger households, and they could develop ways for older households interested in pursuing entrepreneurship to diversify their incomes.

Entrepreneurship growth and older households

A number of researchers have noticed that older households increasingly move into self-employment. Kevin Cahill, Michael Giandrea, and Joseph Quinn from The Center on Work and Aging at Boston College, for instance, identify a growing trend of older workers moving out of what they call “career employment”—extended periods of wage and salary employment—into self-employment.⁵ Along those same lines, Dane Stangler from the Kauffmann Foundation concludes that entrepreneurship—defined, in this case, as the creation of more start-ups—has been more prevalent among older households than among younger ones, countering an established trend in the other direction.⁶

The data, however, still leave a few questions unaddressed. First, it is unclear from looking at employment flows whether the share, or percentage, of older households in self-employment arrangements has also gone up. Second, it is unclear whether self-employment growth for older households reflects more entrepreneurial activity—defined as households owning and managing their own business of a certain size—or whether this shows an increase in independent contracting with households increasingly working for themselves rather than managing a sizeable business. Third, it is possible that older entrepreneurship growth simply reflects a general trend toward extended economic activity among older households. That is, has entrepreneurship grown faster among older households than wage and salary employment?

Let’s first consider entrepreneurship trends among older households over time compared to the entire U.S. population.⁷ Table 1 presents the relevant trends for employment arrangements for older households: entrepreneurs, independent contractors, and wage and salary workers. The data show that older households have become more attached to the labor market over time as the share of older households out of the labor force has trended downward in fits and starts from 1989 to 2013. The data also show entrepreneurship is the fastest-growing employment arrangement for households 50 years old and older from 1989 to 2013. Wage and salary employment is the second fastest growing employment

arrangement, while independent contracting is basically stagnant as a share of the population from 1989 to 2013. Thus, increased entrepreneurship among older households is not a reflection of an increasing movement toward higher rates of self-employment but rather a unique phenomenon in its own right.

TABLE 1

Employment arrangements of households 50 years old and older, 1989 to 2013

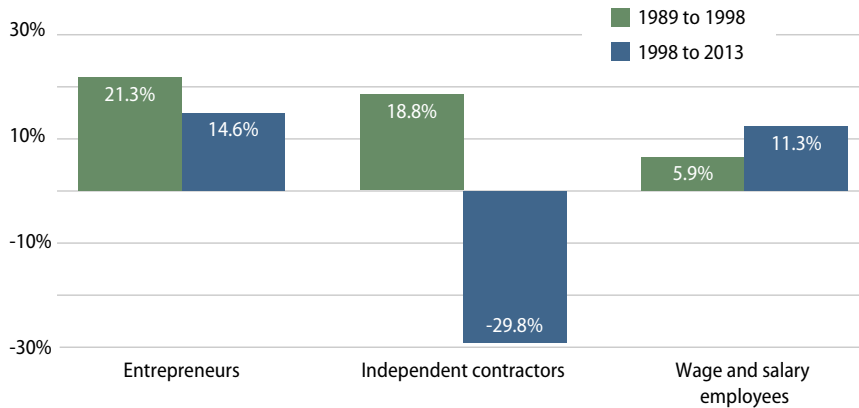
	Entrepreneur			Independent contractor			Self-identified workforce status				
	All	Full-time	Part-time	All	Full-time	Part-time	Total self-employed	Work for somebody else	Retired	Disabled	Otherwise out of labor force
1989	7.0%	5.2%	1.9%	6.2%	5.5%	0.6%	10.7%	32.2%	40.1%	13.9%	3.1%
1992	8.9%	5.0%	3.9%	5.3%	4.2%	1.0%	9.2%	30.7%	42.3%	14.3%	3.5%
1995	8.4%	5.1%	3.3%	5.9%	4.9%	1.0%	10.0%	31.3%	42.5%	13.0%	3.2%
1998	8.6%	5.8%	2.7%	7.3%	6.0%	1.3%	11.8%	34.1%	43.2%	8.1%	2.7%
2001	10.1%	6.9%	3.2%	6.9%	5.9%	1.1%	12.8%	36.7%	40.8%	7.2%	2.4%
2004	10.0%	6.9%	3.1%	7.5%	6.0%	1.5%	12.9%	37.5%	38.3%	9.2%	2.1%
2007	10.0%	6.9%	3.1%	4.6%	3.4%	1.3%	10.2%	39.7%	39.1%	8.2%	2.7%
2010	13.2%	9.1%	4.1%	6.2%	4.8%	1.4%	13.9%	37.3%	36.2%	8.6%	4.0%
2013	9.8%	7.3%	2.5%	5.1%	3.7%	1.4%	11.0%	38.0%	38.9%	8.9%	3.3%

Notes: All figures are expressed as share of the total population. The totals across employment categories add to more than 100 percent since part-time entrepreneurs and part-time independent contractors also self-identify as something other than self-employed. The shares add to 100 percent if these two categories are excluded. Entrepreneurs are defined as those who own and manage a business that is worth at least \$5,000 in 2013 dollars. Full-time entrepreneurs are defined as those entrepreneurs who also self-identify as self-employed, while part-time entrepreneurs are those who self-identify with another work status: working for somebody else, retired, disabled, or out of the work force. Independent contractors are those households who own and manage a business worth less than \$5,000 in 2013 dollars. Full-time independent contractors also self-identify as self-employed and part-time independent contractors self-identify a different work status. All categorization based on survey answers for the head of household, when head of household is 50 years old or older.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013; Inflation-adjustments are based Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

The rise in older entrepreneurship, however, does not appear to be a smooth process. Rather, there appears to be an upward shift in older entrepreneurship after 1998. The average population share of older entrepreneurs was 10.7 percent between 2001 and 2013 compared to only 8.3 percent between 1989 and 1998.⁸ The growth of older entrepreneurs not only accelerated after 1998—it is also faster than the growth of other employment arrangements in either the early years of 1989 to 1998 or the later years of 2001 to 2013.⁹ (see Figure 1)

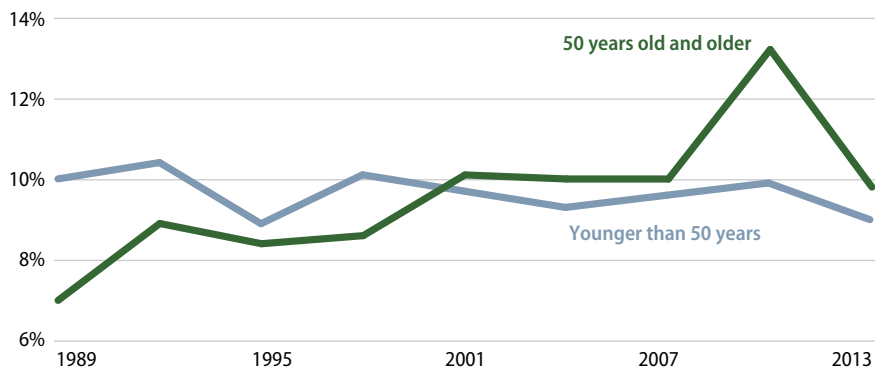
FIGURE 1
Relative change in employment arrangement as share of economically active population 50 years old and older, by time period



Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013.

Finally, the accelerated growth of entrepreneurs is a unique phenomenon among older households and is not shared with younger households. Figure 2 shows the entrepreneurship trends among households 50 years old and older and those younger than age 50. The rise in entrepreneurship from 1989 to 2013 appears to be a unique phenomenon for older households. It is not matched by similar trends among younger households. In fact, the share of entrepreneurs among younger households appears to have dropped off slightly during this time period.

FIGURE 2
Population shares of entrepreneurs, by age and year



Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013; Inflation-adjustments are based on Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

Wealth among older households that typically make up the bulk of older entrepreneurs has risen faster than wealth of other households

Older entrepreneurs fit a particular and largely unchanged profile. They tend to be overwhelmingly married, white, high income, and risk tolerant as Table 2 shows. For instance, more than 80 percent of older entrepreneurs are married and almost 90 percent are white. Moreover, about half or more of all older entrepreneurs had incomes in the top fifth of the income distribution. Furthermore, entrepreneurs are more likely to take substantial or above-average financial risks than is the case for nonentrepreneurs. (see Appendix A.2) Nonentrepreneurs, in comparison, are much less likely to be married, less likely to be white, less likely to tolerate risk, and more evenly distributed across the income distribution.

The demographic makeup of older entrepreneurs changed very little over this time period, while the demographics of the older nonentrepreneurial population changed somewhat. (see Table 2) Most notably, the share of white households among entrepreneurs remained virtually constant between the early and late years, while the share of nonwhites among nonentrepreneurs increased.

The unchanged composition of older entrepreneurs can be used to show how wealth inequality factors into the equation. The authors of this report specifically calculated the median wealth ratio¹⁰ of the group of households that best represent older entrepreneurs—married, white, and high income—to the median wealth of all other older households. This ratio of median wealth shows whether those households who make up the bulk of older entrepreneurs have seen disproportionate wealth gains.

Figure 3 illustrates the median wealth ratio for the pool of so-called typical entrepreneurs compared to all other older households. The figure shows that the median wealth of married, white, and high-income older households started to pull away from the median wealth of all other older households starting in 1998. This marked a reversal from the preceding years of 1989 to 1998 when the ratio of median wealth actually declined.

TABLE 2

Demographic characteristics of older entrepreneurs, by time period

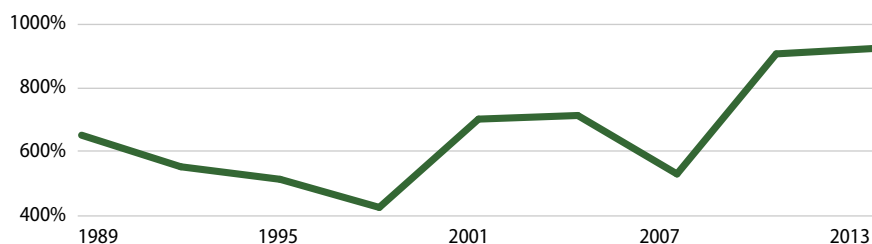
	Entrepreneurs		Nonentrepreneurs		Relative difference between entrepreneurs and nonentrepreneurs	
	Early years, 1989 to 1998	Late years, 2001 to 2013	Early years, 1989 to 1998	Late years, 2001 to 2013	Early years, 1989 to 1998	Late years, 2001 to 2013
Family status						
Married	82.3%	83.0%	52.1%	53.1%	57.9%	56.4%
Single men	8.6%	9.8%	11.6%	13.8%	-25.8%	-29.3%
Single women	9.1%	7.2%	36.3%	33.1%	-74.9%	-78.2%
Race/ethnicity						
White	89.5%	89.3%	80.6%	78.4%	11.1%	14.0%
Black	3.5%	4.1%	11.8%	12.7%	-70.3%	-67.7%
Hispanic	2.5%	2.5%	4.5%	5.7%	-44.6%	-55.6%
Other	4.5%	4.1%	3.2%	3.2%	42.7%	25.7%
Income level						
Bottom quintile	5.8%	5.9%	27.6%	24.4%	-79.1%	-76.0%
Second quintile	12.9%	8.7%	23.5%	21.5%	-45.1%	-59.7%
Middle quintile	15.4%	13.4%	17.6%	19.2%	-12.7%	-30.5%
Fourth quintile	19.7%	20.6%	15.4%	17.6%	28.0%	17.3%
Top quintile	46.2%	51.5%	15.8%	17.3%	191.8%	197.3%
Financial risk tolerance						
Substantial/above average	20.8%	27.7%	9.2%	12.4%	126.2%	122.8%
Average	47.7%	50.2%	32.8%	34.7%	45.4%	44.5%
Unwilling to take risks	31.5%	22.1%	58.0%	52.8%	-45.7%	-58.2%

Notes: All figures are in percent. Sample includes households headed by somebody 50 years old and older. Entrepreneurs are those who own and manage their own business worth more than \$5,000 in 2013 dollars. A negative number for the relative difference means that older entrepreneurs are less likely than nonentrepreneurs to experience the relevant factor. A positive number for the relative difference between older entrepreneurs and nonentrepreneurs indicates that older entrepreneurs are more likely than nonentrepreneurs to experience the relevant factor. Average differences represent the average of differences, not the difference of averages.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013; All dollar amounts expressed in 2013 dollars based on Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

FIGURE 3

Ratio of typical entrepreneur household's median wealth to all other households, by year



Notes: All figures are median marketable wealth for households with heads 50 years old and older. Typical entrepreneurial-type households are married, white, and have income in the top quintile.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013; All dollar amounts in 2013 dollars based on Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

Additional data show that the group of households designated as the pool of typical entrepreneurial households—married, white, and high income—not only have more wealth but are also more likely to have money in a variety of tax-advantaged forms when compared to other older households. The U.S. tax code offers a number of tax incentives for households to save money. The main tax advantages are directed to home ownership and retirement savings.¹¹ In addition, households can save for retirement with defined benefit pensions, 401(k) plans, and individual retirement accounts, or IRAs.

Table 3 summarizes five indicators of household savings. First the data show the median wealth-to-income ratio as a measure of how wealth has or has not kept pace with household income trends. Next, the data present the average shares of households with defined-benefit pensions, 401(k) plans, IRAs, and owner-occupied housing. These last four indicators relate directly to policy since they show how widespread the use of tax-advantaged assets is among households from different demographic backgrounds.

The data show that married, white, and high-income earners had much more wealth relative to their income than other households. High-income earners had a wealth-to-income ratio of 544.7 percent in 2013—almost twice that of other households at 287.0 percent. The group of households that typically make up the single largest share of older entrepreneurs was also significantly more likely than other older households to have a 401(k) or an IRA. They were also more likely to have a defined-benefit pension. Furthermore, within the group of typical entrepreneurial households, almost all owned their own homes, while only approximately three-quarters of other households did. That is, from 1989 to 2013, the group of households that constitutes a large share of older entrepreneurs not only had more wealth than other households but also had greater access to tax-advantaged assets. Disproportionate access to tax-advantaged assets may have helped these households build their wealth in the first place since the goal of the savings incentives in the tax code is increased savings.

The changes over time are also very instructive. (see Table 3) They show that the wealth gap and gap in coverage by tax-advantaged assets narrowed somewhat between 1989 and 1998 but then widened again from 1998 to 2013. This is especially noticeable with the median wealth-to-income ratio. Married, white, and high-income households had a median wealth-to-income ratio of 544.7 percent

in 2013—up from 417.0 percent in 1989—while the median wealth-to-income ratio of all other older households fell to 287.0 percent in 2013, down from 342.5 percent in 1989. The other indicators also show a widening gap in access to tax-advantaged assets after 1998, which likely contributed to the growing wealth inequality since 1998.

TABLE 3

Summary data on older households' wealth, by demographic characteristics and year

	1989	1992	1995	1998	2001	2004	2007	2010	2013	Change from 1989 to 1998	Change from 1998 to 2013
Median wealth to income											
Married, white, high income	417.00%	438.46%	454.03%	422.95%	521.14%	554.43%	522.82%	595.08%	544.70%	5.95%	121.75%
Other older households	342.49%	398.35%	372.94%	408.36%	412.65%	405.76%	454.19%	318.87%	286.99%	65.87%	-121.37%
Share of households with defined benefit pension											
Married, white, high income	68.65%	68.93%	65.25%	58.71%	58.16%	50.62%	53.66%	50.11%	50.61%	-9.93%	-8.11%
Other	51.03%	47.90%	45.36%	43.08%	43.36%	45.23%	43.00%	42.21%	42.52%	-7.94%	-0.56%
Share of household with individual retirement account											
Married, white, high income	74.80%	72.03%	69.46%	67.53%	75.42%	71.39%	68.49%	69.18%	70.52%	-7.27%	2.99%
Other	22.15%	25.45%	24.95%	29.20%	31.22%	30.29%	31.56%	30.43%	28.18%	7.05%	-1.03%
Share of households with 401(k) plans											
Married, white, high income	35.65%	38.28%	38.79%	38.05%	46.10%	51.76%	56.99%	56.83%	49.89%	2.40%	11.84%
Other	8.41%	7.86%	9.53%	15.85%	15.04%	16.15%	19.45%	17.05%	18.55%	7.44%	2.70%
Share of households with owner-occupied housing											
Married, white, high income	95.06%	91.67%	94.67%	97.41%	96.45%	97.48%	97.38%	96.43%	96.18%	2.36%	-1.24%
Other	74.09%	75.84%	75.60%	75.37%	76.92%	78.17%	77.60%	76.27%	74.25%	1.28%	-1.12%

Note: All figures in percent. All changes in percentage points. Defined benefit pensions refer to households having earned a defined benefit pension from their current or a past job. High-income earners are households with income in the top fifth of the income distribution. All numbers for households 50 years old and older.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013.

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 Wealth is important for older entrepreneurs' collateralization and income diversification

Greater wealth could translate into more self-employment through two channels.¹² First, older households have more assets to use as collateral to finance a start-up or a business expansion. Second, older households could liquidate more of their assets through realized capital gains and realized dividends and interest payments. In both cases, these income-diversification strategies offer a financial

buffer that would reduce the risk of starting a new venture and becoming self-employed. Retirement accounts, for instance—a primary tax-advantaged asset, other than owner-occupied homes—may have generated higher retirement incomes due to the strength of the financial market after 1983.¹³

How then might we understand the link between rising wealth and increasing older entrepreneurship? First, older households may have used their growing wealth as collateral for their business. The share of older entrepreneurs who used their private assets as collateral hit a low point in 1998 with 16.5 percent and trended upward in subsequent years. (see Table 4) In 1998, the median amount of collateral also hit close to a low point with a real amount of \$57,181 in 2013 dollars and trended upward in subsequent years, hitting a record median amount of \$200,000 in 2013. Increasing access to and growing amounts of private assets as collateral seems to correlate with the pronounced rise of older entrepreneurship from 1998 onward compared to the period before 1998 when collateralization fell in reference to the wealth ratio shown in Figure 3.

Second, it is possible that older entrepreneurs may have also increasingly relied on capital income—capital gains and interest and dividend income—as a buffer against risky business income. The authors specifically calculated the share of older entrepreneurs with substantial capital gains income and those with substantial interest and dividend income, defined as more than \$5,000 in 2013 dollars.¹⁴ The authors also calculated the same shares for older wage and salary employees and reported the average difference in shares with substantial capital gains and substantial interest and dividend income for the early and late time period in Table 4.

The calculations in Table 4 show that capital income, especially in the form of substantial interest and dividend income, has gained in relative importance for older entrepreneurs compared to wage and salary employees. A large share of older entrepreneurs have substantial capital income, either from capital gains or from income and dividend income. More than one-fourth of all older entrepreneurs had substantial dividend and interest income in 2013. Moreover, older entrepreneurs are generally about two to three times more likely to have substantial capital gains income and interest and dividend income than wage and salary employees. Furthermore, the gap in having substantial capital gains income remained steady from the early to the late period, while the gap in having substantial interest and dividend income widened from the early period to the late period. On average, entrepreneurs had a chance of possessing interest and dividend income that was 139.1 percent greater than that of wage and salary employees between 1989 and

1998. (see Table 4) In other words, entrepreneurs were, on average, a little more than twice as likely as wage and salary employees to report substantial interest and dividend income. In comparison, they were more than three times as likely as wage and salary employees to have substantial interest and dividend income between 2001 and 2013. (see Table 4) The relative difference between entrepreneurs and wage and salary employees in their respective reliance on capital income increased over time, so that capital income became more important for entrepreneurs relative to wage and salary employees.

TABLE 4
Measures of collateralization and capital income for older households, by year

	Entrepreneurs with private assets as collateral	Median amount of collateral if entrepreneur used private assets as collateral	Entrepreneurs with capital gains income	Entrepreneurs with interest income	Wage and salary employees with capital gains income	Wage and salary employees with interest income	Difference in possessing capital income between entrepreneurs and wage and salary employees	Difference in possessing interest income between entrepreneurs and wage and salary employees
Average from 1989 to 2013	22.9%	\$97,016	13.0%	28.8%	4.6%	10.9%	183.1%	163.9%
Average from 1989 to 1998	25.4%	\$69,268	13.5%	31.2%	4.8%	13.5%	180.3%	131.7%
Average from 1998 to 2013	21.0%	\$119,215	12.6%	26.8%	4.4%	8.9%	185.6%	202.9%
1989	28.3%	\$90,379	14.1%	41.0%	5.0%	17.2%	183.9%	138.5%
1992	31.2%	\$53,617	8.2%	28.1%	5.7%	16.2%	43.9%	73.3%
1995	25.6%	\$75,894	14.4%	28.3%	3.0%	10.5%	377.9%	170.5%
1998	16.5%	\$57,181	17.2%	27.3%	5.5%	10.0%	209.4%	174.2%
2001	18.2%	\$65,661	10.9%	24.0%	5.9%	11.6%	85.2%	107.5%
2004	18.0%	\$123,314	10.3%	27.0%	4.9%	9.4%	109.7%	185.7%
2007	25.8%	\$99,929	17.9%	30.0%	4.7%	9.2%	280.7%	225.2%
2010	22.2%	\$107,170	9.4%	27.0%	2.9%	7.8%	228.0%	244.6%
2013	20.8%	\$200,000	14.5%	26.3%	3.7%	6.2%	293.7%	320.9%

Notes: All categorization based on survey answers for the head of household when head of household is 50 years old or older. All data calculated for entrepreneurs who are 50 years old and older. Entrepreneurs are those who own and manage their own business worth at least \$5,000 in 2013 dollars. Loan denial requires that household has applied for a loan. Households can identify the year when they expect to retire. Part of the answer includes "less than one year" and "never stop" working. "Less than one year" is set equal to 0.5 years and "never stop" is equal to an assumed average life expectancy of 85 years minus the actual age of the head of household. The expected years to retirement are equal to the indicated year minus the survey year. Households are only counted as having income from a particular source if they have at least \$5,000 in income in 2013 dollars from this source. Interest income refers to interest and dividend income. A negative number for the relative difference means that older entrepreneurs are less likely than wage and salary employees to experience the relevant factor. A positive number for the relative difference between older entrepreneurs and wage and salary employees indicates that older entrepreneurs are more likely than wage and salary employees to experience the relevant factor. Average differences represent the average of differences, not the difference of averages.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013; All dollar amounts expressed in 2013 dollars based on Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

The bottom line is that wealth correlates with older entrepreneurship not only as a means to offer collateral but also as a way to establish an income buffer against risky business income. This report next considers other sources of income diversification—most notably retirement income—and similarly finds that other means of income diversification also correlate with older entrepreneurship trends.

Other indicators of opportunity show some correlation with older entrepreneurship growth

Rising wealth may not be the only indicator of increasing entrepreneurial opportunity for older households. For older households who want to start and grow their businesses, the possibility that credit constraints may have eased over time as a result of financial deregulation must be considered. Specifically the authors look at the share of entrepreneurs and nonentrepreneurs who were denied a loan application. The issue of whether older entrepreneurs have become increasingly likely to receive substantial Social Security income—more than \$5,000 in 2013 dollars—as way to buffer against risky business income is also examined. It should be noted that legislative changes in 2000 made it easier for older households to receive income in addition to their full Social Security benefits.¹⁵

Table 5 summarizes the authors' calculations of the trends in loan denial rates and the share of older entrepreneurs and wage and salary employees with substantial Social Security income. The data also show the relative difference between loan denial rates and the chance of substantial Social Security income between older entrepreneurs and wage and salary employees in the early years of 1989 to 1998 and the later years of 2001 to 2013. The expectation is that credit constraints ease over time when compared to credit constraints for wage and salary employees since entrepreneurs benefit from fewer credit constraints and more collateral. Moreover, it is reasonable to expect that the relative difference in receiving substantial Social Security income grows between entrepreneurs and wage and salary employees over time so that older entrepreneurs become increasingly more likely to have substantial Social Security income than is the case for wage and salary employees.

The data in Table 5 confirm these expectations—credit constraints ease more quickly for older entrepreneurs than for wage and salary employees. Older entrepreneurs have lower loan denial rates than wage and salary employees during the later period of 2001 to 2013 after having experienced greater credit constraints between 1989 and 1998. Older households wanting to pursue entrepreneurial opportunities not only benefitted from disproportionate wealth gains but also from disproportionate declines in credit constraints over time.

TABLE 5

Additional measures of entrepreneurial opportunities for older households, by year

	Share of entrepreneurs who applied for and were denied a loan	Share of entrepreneurs with substantial Social Security and other retirement income	Share of wage and salary employees who applied for and were denied a loan	Share of wage and salary employees with substantial Social Security and other retirement income	Difference in loan denial rates between entrepreneurs and wage and salary employees	Difference in annuity income between entrepreneurs and wage and salary employees
Average from 1989 to 2013	8.0%	32.5%	8.3%	23.9%	-3.5%	36.1%
Average from 1989 to 1998	8.9%	29.0%	7.6%	22.2%	18.3%	30.9%
Average from 1998 to 2013	7.3%	35.4%	8.9%	25.3%	-18.2%	39.6%
1989	8.8%	27.4%	5.5%	22.9%	59.2%	19.5%
1992	10.8%	31.0%	8.5%	18.6%	26.8%	66.6%
1995	7.6%	25.5%	8.7%	24.7%	-12.7%	3.2%
1998	8.6%	32.1%	7.5%	22.3%	14.4%	43.7%
2001	7.5%	31.6%	8.4%	25.1%	-9.9%	25.9%
2004	3.8%	35.6%	8.7%	26.6%	-56.1%	33.8%
2007	4.5%	31.1%	7.0%	24.4%	-35.0%	27.5%
2010	10.6%	37.8%	10.0%	23.8%	6.1%	58.9%
2013	10.0%	40.7%	10.6%	26.7%	-5.4%	52.2%

Notes: All categorization based on survey answers for the head of household when head of household is 50 years old or older. All data calculated for entrepreneurs who are 50 years old and older. Entrepreneurs are those who own and manage their own business worth at least \$5,000 in 2013 dollars. Loan denial requires that household has applied for a loan. A negative number for the relative difference means that older entrepreneurs are less likely than wage and salary employees to experience the relevant factor. A positive number for the relative difference between older entrepreneurs and wage and salary employees indicates that older entrepreneurs are more likely than wage and salary employees to experience the relevant factor. Annuity income refers to Social Security, defined-benefit pension benefits, and other annuity income. Households are only counted as having income from a particular source if they have at least \$5,000 in income in 2013 dollars from this source. Average differences represent the average of differences, not the difference of averages.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013.

The authors' calculations also confirm that income diversification disproportionately matters for older entrepreneurs than is the case for older wage and salary employees. Older entrepreneurs are more likely than wage and salary employees to have substantial Social Security income in both periods—1989 to 1998 and 2001 to 2013—but that gap widens over time. For older entrepreneurs and wage and salary employees, there is a relative difference of 39.6 percent in receiving substantial Social Security income on average between 2001 and 2013 in favor of older entrepreneurs. This is compared to a relative difference of 30.9 percent between 1989 and 1998. The authors' calculations show again that income diversi-

fication is more prevalent among older entrepreneurs than among wage and salary employees, suggesting that older households wanting to pursue entrepreneurial opportunities increasingly found ways to build income buffers against risky business income. (see Table 5)

The bottom line is that a particular subset of older households—white, married, and high income—increasingly had access to wealth that they could use as collateral and to diversify their income over time. The implication, however, is that these opportunities were increasingly limited to a subset of households because of increasing wealth and income inequality.

Demographic changes do not explain a rise in older entrepreneurship

The conclusion that older entrepreneurship growth followed increasing wealth among a particular subset of older households would be stronger if demographic changes and economic pressures could be ruled out as contributing to entrepreneurship growth.

This report already presented summary demographic comparisons for older entrepreneurs in Table 2 above.¹⁶ That table also offers some comparisons to nonentrepreneurs for the early years of 1989 to 1998 and the later years of 2001 to 2013. The basic conclusion is that the demographics of older entrepreneurs changed little when taken separately. Furthermore, older entrepreneurs have become a little more likely to be white and high income over time, compared to nonentrepreneurs. (see Table 2)

The risk tolerance of older entrepreneurs deserves particular consideration here. But the gap in risk tolerance between entrepreneurs and nonentrepreneurs narrowed a little over time. The share of older entrepreneurs willing to take substantial or above average risks grew from 20.8 percent in the early years of 1989 to 1998 to 27.7 percent in the later years of 2001 to 2013. The share of older nonentrepreneurs willing to take above average or substantial risks, however, increased even faster from 9.2 percent to 12.4 percent over the same period. That is to say that older entrepreneurs have lost a little bit of their advantage in risk tolerance over nonentrepreneurs over time, possibly because they have gained disproportionate access to income-diversification measures, which could help stabilize their incomes and reduce their economic risk exposure.

The bottom line is that demographic changes do not correlate with changes in older entrepreneurship and thus are likely not an explanatory factor for the changes in older entrepreneurship observed by the authors.

Older households unlikely to pursue entrepreneurship in response to rising economic pressures

Older households may have responded to increasing economic pressures and moved more and more into entrepreneurship over time. Therefore, concomitant changes in proximate measures for past economic pressures must be considered. These concomitant changes include a rising age, a later business-starting age, and a delayed planned retirement age for older entrepreneurs. In addition, increasing part-time entrepreneurship; a growing reliance on government transfers such as unemployment insurance, or UI; a rising share of former full-time wage and salary employees moving into entrepreneurship; and limited earnings gains over time for former wage and salary employees moving into entrepreneurship¹⁷ must all be explored.

Table 6 summarizes these trends.¹⁸ None of these trends correlate in any discernible way with older entrepreneurship growth. It has already been charted that part-time entrepreneurship shows no clear upward trajectory. (see Table 1) Furthermore, none of the age-related measures show an upward trend and neither do the measures for substantial government transfers income receipt. (see Table 6) Moreover, the gap in the receipt of UI and workers' compensation actually widens between entrepreneurs and wage and salary employees.

Another confirmation that economic distress is not related to older entrepreneurship can be discerned by looking at the pattern of past full-time earnings in wage and salary employment. (see Table 7) Generally speaking, the previous full-time earnings of entrepreneurs in later survey years tend to be higher than those of entrepreneurs in earlier survey years. Most notably, the past wage and salary earnings of older entrepreneurs in the later years of 2001 to 2013 are discernably higher than the past earnings of older entrepreneurs in the early years of 1989 to 1998. Such a clear jump in the past earnings of consecutive cohorts of entrepreneurs should not be seen if economic pressures—reflected in part in stagnant wages—had indeed contributed to rising older entrepreneurship.

TABLE 6

Trends for economic pressure proxies for older households, by year

	Average age of older entrepreneurs	Share of older entrepreneurs who started business after age 50	Average expected years to retirement for entrepreneurs	Entrepreneurs receiving government transfers	Average age of older wage and salary employees	Average expected years to retirement for wage and salary employees	Wage and salary employees receiving government transfers	Difference in average age of entrepreneurs and wage and salary employees	Difference in expected years to retirement between entrepreneurs and wage and salary employees	Difference between entrepreneurs and wage and salary employees in government transfers
Average from 1989 to 2013	60.14	31.3%	12.99	1.7%	57.89	10.24	2.9%	3.9%	27.3%	-40.6%
Average from 1989 to 1998	60.10	31.7%	13.44	1.7%	57.65	9.93	2.3%	4.2%	35.4%	-27.6%
Average from 1998 to 2013	60.18	31.0%	12.63	1.8%	58.08	10.49	3.4%	3.6%	20.8%	-47.6%
1989	60.7	29.0%	12.9	0.6%	57.5	9.9	2.7%	5.5%	31.1%	-79.9%
1992	60.4	36.1%	15.0	5.0%	57.5	10.1	3.3%	5.1%	48.5%	51.2%
1995	59.4	29.0%	12.9	0.7%	58.2	9.4	1.4%	2.1%	38.0%	-46.5%
1998	59.9	32.7%	12.9	0.4%	57.4	10.4	1.8%	4.4%	23.9%	-76.7%
2001	59.7	31.3%	13.1	0.8%	58.0	10.1	1.9%	2.9%	28.8%	-59.3%
2004	60.0	35.9%	13.7	0.1%	58.4	9.9	3.4%	2.7%	37.8%	-96.0%
2007	59.6	30.8%	11.6	2.6%	57.8	10.2	1.3%	3.2%	13.2%	95.8%
2010	60.9	29.1%	12.4	2.9%	58.0	11.1	5.8%	5.0%	12.1%	-49.7%
2013	60.8	27.9%	12.4	2.5%	58.3	11.0	4.6%	4.3%	11.8%	-45.7%

Notes: All categorization based on survey answers for the head of household when head of household is 50 years old or older. All data calculated for entrepreneurs who are 50 years old and older. Entrepreneurs are those who own and manage their own business and the business is worth at least \$5,000 in 2013 dollars. Households can identify the year when they expect to retire. Part of the answer includes "less than one year" and "never stop" working. "Less than one year" is set equal to 0.5 years and "never stop" is equal to an assumed average life expectancy of 85 years minus the actual age of the head of household. The expected years to retirement are equal to the indicated year minus the survey year. Positive relative differences indicate that the respective indicator is greater for entrepreneurs than for wage and salary employees, while a negative relative difference indicates that the respective measure is smaller for entrepreneurs than for wage and salary employees. Government transfers include unemployment insurance and workers' compensation. Households are only counted as having income from a particular source if they have at least \$5,000 in income in 2013 dollars from this source. Average differences represent the average of differences, not the difference of averages.

Source: Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013.

TABLE 7

Median real full-time earnings during last year of working full-time for older entrepreneurs

Real annual earnings, in 2013 dollars

	1992	1995	1998	2001	2004	2007	2010	2013
15 years out	\$4,068.99	\$8,997.37	\$19,374.45	\$20,391.70	\$33,078.05	\$41,819.64	\$30,042.09	\$44,355.45
10 years out	\$17,814.79	\$17,842.74	\$21,515.64	\$23,161.65	\$41,461.56	\$39,180.65	\$47,880.73	\$66,756.80
5 years out	\$41,347.56	\$16,727.86	\$34,099.09	\$38,536.98	\$46,493.71	\$82,225.96	\$97,974.86	\$78,854.13

Notes: All amounts reflect annual full-time real earnings during the last year, in which household held full-time job working for somebody else. Calculations for all entrepreneurs 50 years old and older in a survey year. Source: Real earnings calculated in 2013 dollars using Bureau of Labor Statistics, Consumer Price Index Research Series Using Current Methods (CPI-U-RS), All Items (U.S. Department of Labor, 2015), available at <http://www.bls.gov/cpi/cpirsai1978-2014.pdf>.

Conclusion

The increase in entrepreneurship among those who are 50 years old or older is a surprising trend that accelerated after 1998 and held steady through the Great Recession and into 2013. The research presented here tentatively suggests that this growth resulted from the confluence of a few beneficial but unique trends. Most notably, older household entrepreneurship increased after 1998 when a particular subset of these households—married, white, and high income—who make up a large share of older entrepreneurs also experienced disproportionate wealth gains. Rising wealth likely gave these households the opportunity to use their wealth as collateral and as a source for capital income in order to build a buffer against risky business income.

However, older entrepreneurship growth is ultimately limited if it primarily depends on the disproportionate wealth gains among a particular subset of households. Older entrepreneurship growth could easily slow again as households who saw disproportionate wealth gains have already taken advantage of these opportunities and moved into entrepreneurship.

The bottom line for policymakers wanting to create more meaningful self-employment opportunities for older households is twofold. First, policymakers should consider creating simpler and more efficient savings incentives so that a wider array of households can build substantial wealth. Secondly, policymakers may want to consider ways for older households interested in becoming entrepreneurs to diversify their income as a buffer against risky business income.

As has been the case over the past 15 years, increasing wealth inequality excludes many would-be entrepreneurs since they do not have sufficient access to private savings that would allow them to diversify their income. The result is slower entrepreneurship growth among older households than otherwise would be the case. Slower entrepreneurship growth leaves many older households with less economic security as they are in a bind between unstable wage and salary employment; declining employer benefits; growing long-term unemployment; and the need to save more for their future. On the other hand, expanding the benefits of entrepreneurship to older households will mean that the U.S. economy will experience greater innovation and dynamism going forward.

Appendix

A.1 Literature review

Entrepreneurship may be an especially relevant employment arrangement for older households as they may face obstacles to wage and salary employment. Self-employment, especially in the form of entrepreneurship, offers potentially greater rewards and risks than independent contracting.

Economic pressures on older households create a need to work longer in self-employment

Several long-standing trends have raised the need for households to generate more wealth, possibly by working longer. Households will need more wealth today than in the past in order to access the same economic security enjoyed by households in earlier periods. People can expect to live longer and spend more time in retirement than previous generations, requiring more household wealth than in the past to maintain the same standard of living in retirement. Furthermore, households face more labor market weaknesses and have fewer employer-sponsored benefits. In sum, households will have to save more than in the past to compensate for additional risks if they want to maintain their standard of living over time.

An aging society requires an increasing amount of private savings. Moreover, workers retiring now can expect to live longer than previous generations. The U.S. Social Security Administration reports that the life expectancy for men at age 65 was 14.0 years in 1980 compared to 17.5 years in 2010, whereas the life expectancy for women at age 65 was 18.4 years in 1980 and 19.9 years in 2010.¹⁹ The life expectancy for men reaching age 65 in 2030 is projected to go up to 19.2 years; for women reaching age 65 in 2030, life expectancy is projected to increase to 21.1 years.²⁰ The additional years can also translate into longer expected retirements since working longer is often not a viable option for many older workers.²¹ Households thus need more private wealth than in the past in order to keep their incomes steady over longer life spans.

At the same time, traditional sources of retirement benefits such as Social Security and defined-benefit pensions have been declining relative to preretirement earnings. Scheduled increases in the normal retirement age, which constitute a reduction in Social Security benefits relative to preretirement earnings, started to affect people turning 62 in 2000. Specifically, benefits as a percentage of the Social Security primary insurance amount, or PIA, for 62-year-olds fell from 80 percent in 1999 to 79 percent in 2000 and will decline until reaching 70 percent for those born after 1960. Likewise, the share of private-sector workers with a defined-benefit pension has fallen over time.

Moreover, the share of jobs with health insurance and employer-sponsored retirement plans has eroded over time, which again may increase employees' incentives to find income opportunities other than wage and salary employment.²² By 2010, the share of people with employer-sponsored health insurance had fallen to its lowest level on record. In particular, the share of people with employer-sponsored health insurance stood above 60 percent in the late 1980s and grew to a peak of 65.1 in 2000. However, since then, the number of people enjoying that benefit has continuously fallen, reaching its lowest point on record—55 percent—in 2010.²³

The pattern looks similar for both defined-benefit pensions and defined contribution plans. The share of workers who participated in a retirement plan through their employers fell from 46 percent in 1979 to 42 percent in 1988. In 2009, it stood at 45 percent.^{24,25}

In addition, over the past three decades, employees have been facing increased insecurity in the labor market. Likewise, high long-term unemployment is another reflection of the growing labor-market insecurity. Long-term unemployment has been on the rise since the 1970s,²⁶ and it has been especially pronounced among older households.²⁷

Households are increasingly ill prepared for retirement because of these varying economic pressures. The share of households who are expected to be unable to maintain their standard of living in retirement with income from Social Security, defined-benefit pensions, and private savings has gradually increased over time, regardless of the methodology used to define retirement-income adequacy.

For all these reasons, there are incentives for older households to generate more income. Working longer may be one way to compensate for the growing economic pressures. Unfortunately, opportunities to work longer in wage and salary employment may be limited for many of the reasons previously stated. Thus, as a

result, it is likely that older workers will increasingly look to self-employment. For instance, in their 2013 working paper, Kevin Cahill, Michael Giandrea, and Joseph Quinn show a growing movement of older workers out of career employment into self-employment.²⁸ Likewise, Dane Stangler finds that entrepreneurship has been more prevalent among older households than among younger ones.²⁹ Angela Curl and Deanna Sharpe of the University of Missouri, along with the University of Sydney's Jack Noone, find that for American men older than age 50 the likelihood of becoming an entrepreneur increases slightly with age—though the likelihood decreases slightly for women.³⁰ It is unclear, however, whether the self-employment growth among older households is a sustained trend and whether such a growth holds for both entrepreneurs and independent contractors. These are one set of issues examined in this study.

Additional factors potentially related to self-employment growth among older households

To determine the functional cause of increased self-employment among older households, the possibility that these changes are simply a matter of shifting demographics must be ruled out. In addition, whether self-employment is caused by rising economic pressure—pull—or from greater entrepreneurial opportunities and available resources—push—must be examined.

First, older household self-employment could simply be the result of a change in the composition of the older population. That is, the share of households that typically have higher propensities to be entrepreneurs than their counterparts may be increasing. For example, several studies find that nonwhites and Hispanics have a higher rate of entrepreneurship than non-Hispanic whites.³¹ If so, the increased growth of older entrepreneurship over time may be due to increasing ethnic diversity in the United States. The changing population composition could thus explain the relative increase of entrepreneurs in the older population.

A similar possibility is that single women, whose share among older households has grown rapidly, might be more likely to be entrepreneurs than men. If so, these trends would explain growing entrepreneurship among older Americans. It turns out that women make up slightly more than half of all older self-employed workers; furthermore, women-owned businesses are typically smaller than businesses owned by men.³² Separately, there is no reason to believe that the rise of single female-headed households among older households contributed to faster entrepreneurship growth.

Another possible reason for an increase in older entrepreneurship is the rising educational attainment of older households.³³ The University of Southern California's Julie Zissimopoulos and The RAND Corporation's Lynn Karoly and Qian Gu find that individuals with higher levels of education are more likely to pursue self-employment.³⁴ It may follow that more highly educated older households are more likely to become entrepreneurs compared to other employment arrangements. That is, as educational attainment increases, entrepreneurship should rise faster than other employment arrangements. If so, a growing share of entrepreneurs with college degrees should be observed.

In contrast to these demographic explanations, it is possible that growing economic resources are the reason for increasing older self-employment. For instance, over time it may have become easier to finance the start-up of a business. This would encourage entrepreneurs to start and grow their respective business, and it would allow independent contractors to more easily overcome liquidity constraints in response to short-term income fluctuations. The U.S. credit markets experienced a wave of financial deregulation in the 1990s, culminating in the Gramm-Leach-Bliley Act of 1999. The subsequent financial market deregulation increased the availability of credit to all borrowers, while often lowering the costs to borrow³⁵—at least before the onset of the financial crisis in 2007. Older households may especially benefit from lower credit constraints since they have longer credit histories and are more likely to own assets they can offer as collateral.

Furthermore, a growing number of older households may have gotten access to other sources of income over time. This may have enabled them to start and expand their own business. Increased retirement income from Social Security, for example, may provide those looking for self-employment a growing baseline income and thus reduce the risk of self-employment. Older adults possess the advantage of having inflation-indexed Social Security as the anchor of their annual income streams.³⁶

Older self-employed households could have increasingly relied on Social Security as buffer income to ease the way into entrepreneurship. Legislative changes that took place in early 2000 reduced earnings tests, allowing older Social Security recipients to earn more money without tax penalties.³⁷ This could have incentivized older entrepreneurs to collect Social Security benefits earlier than they otherwise would have while starting and growing their self-employment business.

Likewise, older households saw disproportionate wealth increases over the past three decades.³⁸ That also means that retirement accounts may have generated higher retirement incomes due to the strength of the financial market after 1983.³⁹

Greater wealth therefore can translate into more entrepreneurship through two channels. First, older households have more assets to use as collateral in order to finance a start-up or a business expansion. Second, older households can liquidate more of their assets through realized capital gains and realized dividends and interest payments. In both cases, these income-diversification strategies offer a financial buffer, which would reduce the risk of starting a new venture.

Finally, risk tolerance has traditionally been seen as an important quality of entrepreneurship⁴⁰ though recent evidence is somewhat mixed.⁴¹ Even though risk tolerance should decrease with age, it may be that the rise in entrepreneurship among older adults reflects a growing willingness among older households to take certain financial risks.

A.2 Data and variables

This report uses the Federal Reserve's triennial Survey of Consumer Finances as its primary data source. The SCF is the main nationally representative household survey on household wealth, detailing substantial information on all types and amounts of household assets and debt.⁴² The SCF's detailed information also includes relevant financial variables such as whether a household has been delinquent on any types of bills or if a household's loan application has been denied in the past. The SCF includes detailed data on households' economic situations, specifically on their sources and total amount of income; their employment status; and their health insurance and retirement benefit coverage in their current job, among others among other variables. The SCF also includes a range of household demographic characteristics such as age, marital status, household size, education, ethnicity, and race. Most SCF variables are available on a consistent basis dating back to 1989. This report includes survey data through 2013, providing the authors with nine survey years since the federal government conducts the SCF every three years.⁴³

Moreover, the SCF allows for the classification of older households as wage and salary employees, independent contractors, or entrepreneurs. The SCF also includes sufficient information to identify heads of households with mul-

multiple employment arrangements, which allows researchers to identify part-time independent contractors and part-time entrepreneurs. In addition, information on employment arrangements can be combined with information on household income and wealth.

This report includes all economically active households 50 years and older in its analyses. The study uses a cutoff of 50 years of age rather than older ages in order to preserve sufficiently large samples and explore a range of potential explanations for older entrepreneurship growth. Also, the report includes retirees and nonretirees because the authors were especially interested in understanding how older households diversify their income sources, if at all. Many households self-identify as retired but still continue to receive income from wage and salary employment and from self-employment. Including retiree households allows for a better understanding of the diversification strategies of older households. The conclusions of this report are generally not influenced by these sampling decisions.

Older households' employment arrangements and trends

This report defines three employment arrangements to delineate entrepreneurs from wage and salary employees and independent contractors. The SCF offers two ways to identify employment arrangements. The first, ES1, asks the head of household one question regarding their employment status: work for somebody else, self-employed, disabled, retired, or otherwise out of the labor force. The SCF then asks a series of questions, known as ES2, related to owning a privately held business with fewer than 500 employees.

The report uses both approaches—ES1 and ES2—to identify a household's primary employment arrangement. This provides for some nuance in the authors' analysis since it creates the possibility of overlapping employment arrangements. The authors start by identifying wage and salary employees as those who indicate that they work for somebody else using the ES1 approach. Then they identify all entrepreneurship households using the ES2 approach. This report defines entrepreneurs as individuals who say they own and manage a business worth over \$5,000 in 2013 dollars but with fewer than 500 employees.

The entrepreneurship definition used for this report is consistent with other literature on the subject, and it allows for the separation of entrepreneurs from independent contractors.⁴⁴ Operationally, this report sets a minimum value of \$5,000 in 2013 dollars for a business to differentiate entrepreneurs from independent

contractors. Finally, this report identifies individuals as full-time entrepreneurs if they are entrepreneurs by the ES2 definition and if they answered that they were self-employed in the ES1 approach. All other entrepreneurs indicated an employment arrangement other than self-employment in the ES1 approach and thus were considered part-time entrepreneurs.

The definition of independent contractors for this report follows its definition of entrepreneurs in the ES2 approach. Independent contractors are those households who indicate that they own and manage their own privately held business with fewer than 500 employees but who also indicate that the business is worth less than \$5,000 in 2013 dollars.⁴⁵ Full-time independent contractors are again those who also indicated in the ES1 approach that they are self-employed, while part-time independent contractors are those who chose an employment status other than self-employment in the ES1 approach.

Variables and data for explanations of older entrepreneurship growth

The discussion of factors related to self-employment changes below first focuses on whether self-employment growth may be the result of rising economic pressures. Self-employment at any given point in time may be the confluence of a number of past economic and demographic trends. Contemporaneous indicators of economic pressure likely do not appropriately capture the relationship between economic pressures and self-employment. This report instead relied on other more approximate measures that can capture longer-term trends in economic pressures relative to changes in self-employment trends.

Some such approximate indicators may be an entrepreneurs' age and other related measures. That being the case, an increasing age of older entrepreneurs; a greater number of older households starting their business at later ages than in the past; as well as delayed expected retirement ages should be observed. These indicators all try to capture different aspects of the possibility that older entrepreneurs need to work longer as a result of growing economic pressures. An increasing age of entrepreneurs could reflect growing economic pressures if other factors that could be correlated with age are accounted for, which is discussed next.

An increasing age of older entrepreneurs could reflect something other than growing economic pressures. An increasing age could reflect improving longevity, which is highly correlated with income,⁴⁶ race, and education. It could also reflect

disproportionate wealth gains among older households and growing risk tolerance. The authors of this report account for all of these factors in their discussion of demographic trends and economic opportunities.

It is theoretically also possible that economic pressures could lead younger workers to move into self-employment at an earlier age than they otherwise would have. For the most part, however, this report focuses only on older households, so the possible decline in the average age of older entrepreneurs are fairly limited. But trends in entrepreneurship among younger households were considered in some measure in order to make sure that entrepreneurship growth is unique to older households.

A number of other indicators may also reflect growing economic pressures. For instance, increasing part-time entrepreneurship as older households seek some measure of income security by diversifying their income away from wage and salary employment is one possible indicator of increasing economic pressure. An increasing reliance on government transfer income—typically in the form of UI—could be another indicator. Thus, this report defines a dummy variable for receipt of substantial government transfer income: This is coded as “1” if the household received more than \$5,000 in 2013 dollars in a given year. Furthermore, a rising number of former full-time wage and salary employees becoming entrepreneurs should be observed as people leave their career employment in search of more economic security in self-employment. This is possible to track because the SCF asks a series of questions about the household’s last full-time job, including whether it was in self-employment or working for somebody else. In the same vein, a pattern of flat or declining earnings from previous wage and salary employment for successive cohorts should be seen. Instead, earnings should increase over time as wage and salary earnings tend to increase faster than inflation over longer periods of time. An increasing pattern of past earnings of successive cohorts of entrepreneurs would suggest no change in the pattern of moving from wage and salary employment to earnings and thus lend no support to the economic pressure hypothesis. However, a flat or even a declining pattern of past earnings of successive entrepreneur cohorts would suggest that earnings pressures may have increased in wage and salary employment, keeping earnings lower than one would expect before households moved into entrepreneurship.

Most definitions of this report’s other explanatory variables are straightforward but a few require additional explanation. First, the authors use a threshold of substantial income equal to \$5,000 in 2013 dollars for a range of different income sources, specifically Social Security, other government transfers, and other annuity

or capital income. This illuminates strategies for income diversification among older households. Second, the report uses the SCF's question for risk tolerance, which allows respondents to indicate on a four-point scale their willingness to accept financial risk: no risk, average risk, above average risk, and substantial risk tolerance. Answers are combined when households indicate that they are willing to accept substantial risk with answers indicating that they are willing to accept above average risk to preserve sufficient observations to allow for robust analyses.

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Endnotes

- 1 Ruth Simon and Caelainn Barr, "Endangered Species: Young U.S. Entrepreneurs," *The Wall Street Journal*, January 2, 2015, available at <http://www.wsj.com/articles/endangered-species-young-u-s-entrepreneurs-1420246116>.
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- 3 We use the Federal Reserve's triennial Survey of Consumer Finances with 2013 as the most recent survey year and 1989 as the oldest survey year. We separate the data into early years, 1989 to 1998, and later years, 2001 to 2013. This split allows for convenient comparisons over time and it also captures the break in the economy that occurred with the recession in 2001 as employment growth followed a much slower path after the recession than before.
- 4 Camilo Mondragón-Vélez, "How Does Middle-Class Financial Health Affect Entrepreneurship in America?" (Washington: Center for American Progress, 2015), available at <https://www.americanprogress.org/issues/economy/report/2015/04/23/109169/>.
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- 6 Dane Stangler, "The Coming Entrepreneurship Boom" (Kansas City, Missouri: Ewing Marion Kauffman Foundation, 2009), available at http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2009/07/thecomingentrepreneurialboom.pdf.
- 7 See appendix A.1 for a discussion of our data, our sample, and our definitions of employment arrangements.
- 8 Authors' calculations based on the Federal Reserve's triennial Survey of Consumer Finances, 1989–2013.
- 9 This conclusion is unaffected by the spike in entrepreneurship in 2010 and its subsequent reversal. That is, if entrepreneurship had not jumped in 2010, older entrepreneurship would still have been higher after 1998 than before 2001.
- 10 Half of all households have more wealth, while the other half has less.
- 11 Additional tax incentives exist for education and health care, but those incentives are very small in comparison to savings incentives for housing and retirement.
- 12 The authors provide a literature review of the existing research related to potential explanations for entrepreneurship growth in appendix A.1.
- 13 See, for instance, Edmund Phelps and others, "Structural booms," *Economic Policy* 16 (32) (2001): 83–106.
- 14 We calculate these indicators of having substantial capital income for ease of presentation. Using other potential measures, such as average inflation-adjusted capital income and the average or median share of capital income out of total household income, do not change our conclusions. Our conclusions also do not change when we alter the threshold for substantial capital income.
- 15 For details, see, for example, Thomas P. Burke, "Social Security Earnings Limit Removed," *Compensation and Working Conditions* Summer (2000): 44–46.
- 16 Table 2 compares the demographics of older entrepreneurs to the demographics of all nonentrepreneurs, not just wage and salary employees. Table 2 shows how the demographics of older entrepreneurs to the rest of the older population compare and whether relative differences changed over time. Tables 4 and 5, in comparison, summarize the data for older entrepreneurs and older wage and salary employees to illustrate factors that may have influenced older households' employment arrangement choices. Altering the comparison groups in any of these three tables does not change our conclusions.
- 17 See the appendix for a review of the relevant literature and a more detailed discussion of the selection of these variables as proxies for past economic pressures.
- 18 We showed part-time entrepreneurship in Table 1.
- 19 Social Security Administration, "Table V.A3 – Period Life Expectancy," available at <http://www.socialsecurity.gov/OACT/TR/2011/lr5a3.html> (last accessed April 2015).
- 20 Ibid.
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- 23 Social Security Administration, "Table V.A3 – Period Life Expectancy"; These data ignore changes in the quality of health insurance coverage. The insured face growing co-pays for health care services as well as rising shares of health insurance premiums. See, for instance, Kaiser Family Foundation (2014), for details on changes in participation insurance coverage, co-pays, and co-insurance payments. See, The Kaiser Family Foundation and Health Research and Educational Trust, "2014 Employer Health Benefits Survey" (2014), available at <http://files.kff.org/attachment/2014-employer-health-benefits-survey-full-report>.
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- 25 Other data sources such as the Bureau of Labor Statistics' Current Population Survey show similar patterns with increases in retirement plan participation in the late 1990s and declines in the 2000s, although the majority of workers typically do not participate in an employer-sponsored retirement plan at work during any given year.
- 26 Jesse Rothstein, "Unemployment Insurance and Job Search in the Great Recession" (Washington: Brookings Institution, 2011), available at http://www.brookings.edu/~media/projects/bpea/fall-2011/2011b_bpea_rothstein.pdf.

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- 29 Stangler, "The Coming Entrepreneurship Boom."
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- 44 See, for instance, Bitler, Moskowitz & Vissing-Jorgensen (2005) who define entrepreneurs as households that owned and managed private equity, had business net worth of more than zero dollars, and worked positive hours in businesses with positive sales. Other definitions are similar. Cagetti & DeNardi (2006) define entrepreneurship as either owning or managing a privately held business. Gentry & Hubbard, 2000 define entrepreneurs as households that report owning and managing a business with a total net worth of at least \$5,000. DeNardi, Doctor & Krane (2007) define entrepreneurs as households who own and manage a business and who self-identify as self-employed. Quadriani (2000) defines entrepreneurs as households who own and manage a business with positive net worth. See Marlene Bitler, Tobias Moskowitz, and Annette Vissing-Jorgensen, "Testing Agency Theory with Entrepreneur Effort and Wealth," *The Journal of Finance* 60 (2) (2005): 539–576; Marco Cagetti and Mariacristina De Nardi, "Entrepreneurship, Frictions, and Wealth," *Journal of Political Economy* 114 (5) (2006): 835–870; William Gentry and Glenn Hubbard, "Entrepreneurship and Household Saving." Working Paper 7894 (National Bureau of Economic Research, 2000); Mariacristina De Nardi, Phil Doctor, and Spencer D. Krane, "Evidence on entrepreneurs in the United States: Data from the 1989–2004 Survey of Consumer Finances," *Economic Perspectives: Federal Reserve Bank of Chicago* 31 (4) (2007): 18–36; and Vincenz Quadriani, "Entrepreneurship, Saving, and Social Mobility," *Review of Economic Dynamics* 3 (1) (2000): 1–40.
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