

# From Nest Egg to Seed Capital: Empirical Evidence from ROBS Plans

Angela A. Hung                      David T. Robinson  
RAND Corporation              Duke University and NBER

March 24, 2019  
Preliminary and Incomplete

## **Abstract**

A ROBS transaction allows an individual to use his or her retirement savings as investment capital in a startup he or she found without facing early withdrawal penalties. This paper sheds light on this practice by examining data from the Department of Labor as well as detailed survey evidence from a financial services firm that serves the small business community. The evidence we provide informs discussions surrounding retirement security, household financial management, liquidity constraints, and the future of work.

# 1 Introduction

Entrepreneurs in the United States are widely celebrated as heroes: they are hailed as job creators, innovators, agents of economic dynamism, the midwives of technological disruption. And while in our collective imagination entrepreneurs are typically viewed as young mavericks bootstrapping businesses out of their garages, the facts about new business formation tell a different story. Indeed, the median age of first-time entrepreneurs is around 40.<sup>1</sup> Most new businesses are started by individuals with significant industry experience leaving long spells of paid employment (Robb and Robinson, 2014; Bhide, 1999). And according to the US Census Annual Survey of Entrepreneurs, 25% of businesses less than two years old were operated by individuals 55 or older. These facts suggest that understanding the economic frictions that older workers face when they leave paid employment to start a business is critical for understanding the process of entrepreneurship more generally.

Under current IRS rules, individuals who leave traditional employment to start or buy a business can in some circumstances take penalty-free early withdrawals from their 401(k) savings from their previous employer and use this as seed capital. The IRS refers to these tax-free rollovers as ROBS (Rollovers for Business Startups) transactions. In a ROBS transaction, a new business owner forms a C-corporation for the new business and establishes a retirement plan for the new business. The individual then rolls his or her retirement assets into the new retirement plan in the same manner that

---

<sup>1</sup>See Robb and Robinson (2014) for evidence taken from the Kauffman Firm Survey. See also Azouley, Jones, Kim and Miranda (2018).

a job-switcher would roll over his or her retirement savings into the new employer's plan, but then purchases equity in the startup they have just founded. This effectively injects cash into the newly formed business by liquidating retirement savings.

Converting a diversified retirement savings portfolio into seed capital invested in a highly undiversified, risky startup raises a number of serious questions about household wealth management and retirement planning. In the absence of liquidity constraints, it is hard to argue the merits of such a transaction from a retirement security or portfolio management perspective unless the expected returns from the entrepreneurial activity are substantial. A large body of empirical work in economics and finance, however, demonstrates that real and perceived liquidity constraints are important impediments to startup activity.<sup>2</sup> When accessing retirement savings relaxes liquidity constraints that would otherwise impede profitable new business formation, then the benefits of capital access may outweigh the costs of under-diversification.

The goal of this paper is to shed first light on these issues by examining the prevalence of the use of ROBS, and by exploring its implications for retirement plan leakage, for business growth and survival, and thus for overall retirement security. To explore these issues, we assemble public-use and proprietary data from a number of sources. We begin by building a large sample of ROBS startups formed from the 2009 to 2017 using Department

---

<sup>2</sup>A large body of work going back at least to Evans and Jovanovic (1989) argues that liquidity constraints prevent businesses from launching at optimal scale, or even at all. There is also evidence from the Kauffman Firm Survey and from Bennett and Chatterji (2018) that many entrepreneurs avoid searching for capital for fear that they will not be able to obtain it.

of Labor Form 5500 filings, which are mandatory disclosures required of any firm offering pension or welfare benefits, and thus of startups formed through ROBS transactions. Of course, this provides a conservative estimate of the prevalence of using retirement savings to fund startup activity: presumably, some individuals simply cash out their retirement plans and use the after-tax proceeds as investment capital. Nevertheless, these filings provide an indication of prevalence of ROBS usage over time. These data also allow us to track firm birth, growth and death, and thereby study how the transition to self-employment for these workers may affect their retirement security. Data from the US Census Annual Surveys of Entrepreneurs allow us to cast ROBS transactions against the broader backdrop of entrepreneurs in the US.

We complement the Form 5500 data and US Census data with detailed survey data obtained from a financial services firm that specializes in small business financial transactions. While the Form 5500 data offer a coarse picture of essentially the entire population of ROBS filers, our survey data give us a detailed picture of a much smaller sample. In particular, we have detailed information on the business founder, sources of capital used to start the business, as well as the motivations behind the business launch and the perceived challenges to its success.

Taken together, these complementary data sources paint a rich picture of an important and growing class of entrepreneurs. The typical ROBS founder is a white male or white married couple in their late 50s who is launching a business because they are dissatisfied with their current work, or have been laid off and are not ready to retire. They inject substantial equity into these businesses, which are often new or existing franchise businesses. The usage

of ROBS plans to start a new business is growing over time, and the amount of capital used in to start a business with a ROBS plan is increasing over time. And while the survival rates of firms started with a ROBS plans are quite similar to those of the broader population of startups, this means that around 1/3 have failed after three years.

The remainder of the paper is organized as follows. We begin in Section 2 with a detailed description of the rollover process. Then in Section 3 we present evidence from the survey conducted by the financial services firm. Section 4 presents data from the Form 5500 filings, which offer a less detailed, but more comprehensive picture of the phenomenon. Section 5 concludes.

## **2 Rollovers as Seed Capital**

A ROBS transaction effectively allows an individual to cash out his or her retirement plan without paying an early withdrawal penalty in order to invest in a business that they operate. These transactions can be facilitated through accountants, attorneys, or specialized financial services firms that typically promote ROBS transactions as well as offer other types of related financial services to startups, such as assistance in applying for SBA loans and accessing other sources of capital. This section describes the process in greater detail.

Figure 1 provides a summary of this process. It begins when an individual forms a new business and registers that business as a C-corporation. It is essential that the business be registered as a C-corp as opposed to an alternative legal form that would offer similar limited liability because the

company in question must be able to issue qualified employer securities.

After the newly formed C-corp has created a 401(k) or profit-sharing plan, the founder of the business rolls his or her retirement plan from the previous employer into the new company's plan. The founder then liquidates the previous holdings and uses the plan to purchase qualified employer securities in the new firm. This transaction places cash on the new firm's balance sheet and establishes the plan as a shareholder of the company.

The act of purchasing equity is tantamount to establishing a market value for the firm's securities. Indeed, when early-stage investors purchase equity in a startup, a central part of the negotiation is establishing a pre-money valuation of the firm, which then implies the percentage ownership stake that the newly invested capital represents. ROBS transactions do not follow these conventions. Conversations with lawyers who specialize in these type of transactions suggest that for reasons owing to the idiosyncracies of state tax codes, it is most common for the shares to be purchased at \$1/share, creating effectively the same number of shares as there are dollars in the profit sharing plan. The transaction fees paid by the founder would in turn generate extra shares at \$ 1/share.

Notwithstanding these valuation issues, the company now has cash on its balance sheet. This cash can be used for meeting the working capital needs of the business or making other investments required at the time of founding. As we show below, this cash is also commonly used as collateral to obtain outside loans for the business. The survey evidence we report below suggests that SBA loans are a common source of alternative capital for startups.

### **3 Survey Data from a Financial Services Firm**

We obtained data from a client survey conducted by a financial services company that specializes in small business services, such as SBA loans, ROBS transactions, and other means of accessing capital. This section describes these data in more detail and answers a series of descriptive questions that these data are especially well suited to address.

#### **3.1 Data Description**

Our data are from an annual client survey conducted in November 2018. Around 6,000 current and potential clients were invited to participate; a total of 756 responded. These respondents varied in terms of the age of their business, their background, and their motivations for starting a business in the first place, as we discuss below.

#### **3.2 Who Uses ROBS transactions?**

We begin by considering the demographic characteristics of ROBS filers. In Table 1 we first describe the racial background of ROBS filers and compare this to both survey respondents who did not use ROBS transactions, as well as the broader sample of entrepreneurs more broadly.

Insert Table 1 here

Table 1 shows that 76% of ROBS filers in sample are Caucasian, while around 35% of the non-ROBS sample is Caucasian. This difference is highly statistically significant. A total of 6% of ROBS filers are black, while around

20% of non-ROBS filers in sample are black. Likewise, a much larger fraction of the non-ROBS sample is Hispanic or Asian than the ROBS sample. Because ROBS filers would have to have large retirement savings balances in order to justify their transaction costs, these racial differences is a reflection of deeper racial differences in average wages in the US economy.

Comparing the sample to statistics available from the 2014 Census Annual Survey of Entrepreneurs shows, however, that the sample in question is more diverse than the broader sample of entrepreneurs more generally.

Insert Table 2 here

Table 2 considers a broader set of demographics, but lacks comparison to the Annual Survey of Entrepreneurs. This table shows that ROBS filers are much more likely to be college educated, and much less likely to have only completed high school than survey participants who funded their businesses solely through other means. Again, this is consistent with the fact that better-educated workers are more likely to have had a history of higher wages and thus larger retirement savings balances.

Table 2 also compares the age distribution of ROBS filers with other respondents. Not surprisingly, ROBS filers are much more likely to be older than other workers. The group of ROBS filers over age 60 is presumably a reflection of the fact that they launched their businesses before age 59 1/2 and we are surveying them several years after business launch.

The survey asked respondents for their reasons for starting a business. In terms of understanding the deeper motivations of why workers choose entrepreneurship as a means of delaying retirement, these responses are important. These are provided in Table 3.



Insert Table 3 here

Puri and Robinson (2013) as well as many other authors have pointed out that entrepreneurs derive significant utility from the autonomy associated with being their own bosses. In accordance with that, 51% of overall survey respondents report this as one of the reasons why they started a business. Although ROBS filers are slightly more likely to choose this response, the difference is not statistically significant.

In contrast, ROBS filers are much more likely to report dissatisfaction with their previous employment as a motivation for launching a business. A total of 43.6% of ROBS filers offer this response, while only 17% of non-ROBS filers offer this response. The difference in proportions is highly statistically significant. ROBS filers are also much more likely to report being laid-off as a reason for starting a business (26% versus 11% for non-ROBS). Likewise, they were almost twice as likely to report that they were not ready to retire than non-ROBS survey respondents (23% versus 13%).

Taken together, the alternative reasons for starting a business can be grouped into those that describe aspects of being pushed out of wage employment (dissatisfaction, job loss, too early to retire) versus ones that describe being pulled into self-employment (passion, autonomy, opportunity). To test this idea formally, Table 4 reports probit regressions in which the dependent variable measures whether or not a respondent filed a ROBS. Because respondents are allowed to choose multiple reasons for starting a business, we sum the number of push and pull factors as described above and report alternative specifications with varying degrees of demographic controls.

Insert Table 4 here

In column (1), ROBS filers load positively on push factors, and negatively on pull factors. Both loadings are significant. However, when we introduce demographic controls, the significance of the loading on the pull factors drops. It remains marginally significant until we include age controls. The point estimates are presented as marginal probabilities, so Table 4 indicates that ROBS-filers are about 20% more likely to have been pushed into entrepreneurship and about 5% less likely to have been pulled into entrepreneurship than respondents who did not use retirement savings to start their businesses. Given that a little more than half of survey respondents used a ROBS, these magnitudes are highly economically significant, and suggests that the use of retirement proceeds to start a business is driven at least partially out of necessity for many respondents.

### **3.3 What Kinds of Businesses Do They Start?**

In addition to the demographic characteristics of the founders, the survey also offers a window into the types of businesses that ROBS filers launch. Table 5 examines the type of business that is founded.

Insert Table 5 here

Table 5 breaks businesses down into new versus existing and franchise versus non-franchise. The data clearly illustrate the fact that ROBS transactions are heavily concentrated among new and existing franchises. Around 80% of franchises in the data are financed through ROBS transactions. New, independent businesses are much less likely to be financed through ROBS transactions.

This finding no doubt reflects both supply-side and demand-side forces working in tandem. On one side, because ROBS filers are more likely than others to report motivations that suggest they have been thrust into entrepreneurship through job separation or dissatisfaction, they may disproportionately turn to franchise businesses because they do not already have previously conceived ideas about what kind of business they wish to launch. On the other side, many franchises have high upfront capital costs because they require franchise fees and a variety of startup costs associated with fitting a building location with the equipment to operate the franchise.

Table 6 examines the breakdown of ROBS-financed businesses across different industries. ROBS-financed businesses are common across a wide range of industries, but are especially common among industries with strong franchise brands.

Insert 6 here

### **3.4 How are the Businesses Financed?**

The final element of this part of the analysis considers how these businesses are financed, their size and their growth intentions. Table 7 offers unprecedented detail in terms of the sources of equity and debt that founders access when they launch a business. As Table 7 shows, ROBS transactions are often used in tandem with other sources of funding.

Insert Table 7 here

Around 21% of ROBS filers also use SBA loans to fund their business; this is significantly higher than the 10% reported among other respondents. In

contrast, they are much less likely to rely on unsecured loans: 6.4% of ROBS filers report unsecured loans in contrast to 11.5% of other respondents. They are also much less likely to access lines of credit compared to other respondents. Portfolio loans, equipment leases and home equity lines of credit are relatively uncommon, and are not statistically different between ROBS and other filers.

ROBS filers are significantly less likely to use personal cash to fund their business: almost 2/3 of other respondents report using personal cash to finance their business, whereas only 28% of ROBS respondents report using personal cash. This is perhaps unsurprising; presumably the very fact that they are using their retirement savings to seed their new business is itself a reflection of their limited available cash. Similarly, ROBS filers are less likely to report that they accessed capital from friends and family.

### **3.5 Firm Size and Growth**

Hurst and Pugsley (2011) argue that most small business owners have limited growth aspirations and do little to introduce new products or services; rather, they offer existing products into existing markets. Likewise, Adelino, Ma and Robinson (2017) show that while the vast majority of new job creation in response to localized economic shocks is created by new firms, the vast majority of small businesses are not new businesses, they are old, stagnant ones.

Based on these previous findings, the final piece of our survey analysis examines both the firm size (in terms of number of employees) and the stated growth aspirations of the founders. This helps to place these founders into

the broader context of the new and small firms more generally.

Table 8 presents the distribution of employees according to whether the business was founded by a ROBS or other financing means. ROBS-financed businesses are significantly more likely to employer firms, and are significantly more likely to employ more workers than non-ROBS businesses. This is likely driven by the higher concentration of franchised businesses, and the smaller proportion of new, independent businesses among ROBS-filers.

Insert Table 8 here

Table 9 tabulates responses to the question, “What are your intentions for the business going forward?” The responses were “Grow your current location,” “Open an additional location,” “Sell,” or other. Answering “Other” would prompt a text response that we manually coded for growth aspirations.

Insert Table 9 here

The bottom line from Table 9 is that most businesses in this survey had significant growth aspirations. A total of 76 of the 108 “Other” listed non-growth related aspirations: many of these respondents offered answers like “not sure,” “Not wanting to do anything but run business,” “wait and see,” or “Keep steady”. But the vast majority of respondents intend to either grow their existing business, open new locations, or both.

## 4 Form 5500 Data

While the previous section painted a detailed portrait of a prototypical ROBS filer, it was unable to speak to the broader prevalence of ROBS transactions.

This section uses less detailed, but more exhaustive, data to develop a picture of the prevalence of ROBS transactions. The data also allow us to track birth, growth, survival and death over time.

## 4.1 Data Description

As we discuss in greater detail below, because the newly founded company operates an employee benefit plan, it must make annual filings of the plan's assets in order to be compliant with ERISA. Many financial services firms that offer ROBS plans assist with the annual compliance. Moreover, because the plan holds qualified employer securities, it must provide additional filing schedules that provide annual valuations of these securities. The filings comprise the data that we analyze in Section 4.

The IRS, Department of Labor, and the Pension Benefit Guarantee Corporation jointly developed the Form 5500-series so that employee benefit plans can satisfy annual reporting requirements associated with ERISA compliance. Any employer or Plan Administrator of a Pension or Welfare benefit plan covered by ERISA must file a form 5500. For retirement plans, employers report details on the retirement plan, including number of participants, and whether the plan offers employer securities. The main Form 5500 data as well as the schedules that provide valuations of qualified employer securities are publicly available.

Plans with one or two (in the case of married couples) participants can often file an EZ or short form, which is not made publicly available. ROBS plans, however, cannot opt into the EZ or short form because they offer employer securities. Thus, they can be identified by their size, whether they

offer employer securities, and their plan name. Employee Stock Ownership Plans, or ESOPs, are not ROBS transactions and can be identified by their plan name (for example, “Company XYZ ESOP”).

We build a conservative estimate of the number of ROBS plans over time by flagging all 5500 filings with qualified employer securities, which are not ESOPs, which have fewer than three participants in their initial filing year.

## 4.2 Firm Size at Launch

We begin in Table 10 by reporting the time series of new ROBS filings each year along with the distribution of plan asset sizes each year.

Insert Table 10 here

The first column of Table 10 provides the time-series of new Form 5500 filings over time. There is a bolus of filings in 2010 that arose from an IRS ruling in 2009, but apart from that, there is a general upward trend over time in the number of filings.

The size of firms at launch is also growing over time, across all quantiles of the equity distribution. The bottom 25<sup>th</sup> of the distribution was approximately \$61,000 in 2009 and grows to over \$77,000 by 2016. The median grows from \$117,000 to around \$140,000. The 75<sup>th</sup> percentile of the equity size distribution starts with around \$200,000 and has grown to around \$250,000 by 2016, while the top 5% has grown from \$418,000 to over \$535,000 by 2016.

There is a similar pattern at initiation in the size of the total plan asset value. This distinction is important because it reflects the amount of the rolled-over retirement balance that was not used as equity capital in the new

business. The similarity in magnitudes indicates that substantially all of the founder's retirement is rolled over as equity into the new business.

### 4.3 The Evolution of Firm Size over Time

The previous table examines only the cross-sectional distribution of firm equity values at inception. Table 11 considers the evolution of plan values over time.

Insert Table 11 here

Table 11 pools the entire sample of firm births, regardless of birth year, into the "Initial" row, and plots the distribution of qualified employer security values and overall plan values. The mean equity at initiation is around \$175,000, but the 99<sup>th</sup> percentile is almost \$900,000, and the smallest firms have only a few thousand dollars at initiation.

Table 11 depicts growing dispersion in firm values over time. The 25<sup>th</sup> percentile of firms at initiation has around \$65,000 of equity, but this drops immediately and remains relatively flat at around \$40,000 over the next five years. The median stays relatively constant, but the right tail of the distribution grows dramatically. While the seventy-fifth percentile grows from \$225,000 to around \$290,000, the ninety-fifth percentile almost doubles (from \$480,000 at initiation to over \$867,000 after five years), while the ninety-ninth percentile grows from almost \$900,000 at initiation to over \$2,000,000 after five years.

Numerous studies, going back at least to Quadrini (2005), have stressed the role that entrepreneurship plays in the distribution of wealth in the US.



More recent work has stressed the role of entrepreneurship in the dynamics of wealth inequality, with entrepreneurs comprising a large fraction of the top tail of the wealth distribution. Table 12 explores some of these issues in our data.

Insert Table 12 here

We begin by taking the top 3 and bottom 3 deciles of the distribution of qualified employer securities in 2009 and examining how each sub-sample evolves over the next five years. In 2010, a total of 4.2% of the largest firms, and about 8% of the smallest firms have ceased to operate.<sup>3</sup> By 2014 a total of 18% of the largest firms have failed, while around 35% of the smallest firms have failed.

Of the firms that did not exit the data, around 2/3 of the largest firms remained in the top three deciles of the size distribution after one year, while around 58% of firms in the bottom 3 deciles remained in the bottom 3 deciles after the first year. Thirty-five percent of the firms that began in the bottom three deciles in 2009 have transitioned to the middle four deciles of the distribution by 2010. This number expands to 47% by 2013, but then falls to 42% for 2014.

In 2010, a total of 6% of firms that originated in the bottom three deciles have transitioned into the top three deciles of the 2010 size distribution. This number grows to 15% after five years. There is a similar left-tail for firms beginning in the top three deciles: in 2010, around 11% of surviving firms that originated in the top three deciles have shrunk to the bottom three deciles, and this number grows to 15% over five years.

---

<sup>3</sup>Very few of these departures are acquisitions.

In sum, this table shows that there is significant wealth accumulation occurring among even some of the smallest startups. In addition, there is a great deal of dispersion in firm size over time, but a high degree of persistence in firm size.

#### **4.4 Firm Survival and Death**

To examine the question of firm survival in greater detail, Table 13 reports statistics survival statistics for each birth cohort. Around 80% of firms survive at least two years, and around 2/3 survive for at least three years. Around 40% of firms born in 2009 and 2010 are still alive in 2016.

Insert Table 13 here

This implies that around 50% of firms have ceased operation after five years. These numbers are nearly identical to broader statistics on the failure rates of new business starts. For example, the Small Business Administration reports that about 50% of firms fail within the first five years.

## **5 Conclusions**

This paper is the first to examine an increasingly important source of capital for launching businesses among older workers: their retirement savings.

The typical entrepreneur who uses a ROBS transaction to roll retirement savings into a new business is a college-educated, white male in his late 50s who is pushed into entrepreneurship through job dissatisfaction or job separation. They purchase a new or existing franchise and often leverage

their retirement equity with additional leverage, often through loans from the SBA.

These findings offer a number of directions for future research. First, in terms of measuring the prevalence of the use of retirement savings for seed capital, it is important to stress that our empirical evidence is limited to those transactions which we can positively identify as meeting the IRS requirements for a ROBS transaction. Thus, we necessarily underestimate the overall prevalence of the use of retirement savings for starting a business in the economy more broadly. And yet the transactions we identify are an economically important fraction of the overall types of startup activity that these transactions represent. Developing a better sense of the broader prevalence of the use of retirement savings is an important imperative going forward.

The descriptive statistics that we provide in this paper are important for understanding the tradeoffs between liquidity and diversification that entrepreneurs face when they use retirement savings to fund new businesses. Hung and Robinson (2019) provides a model of the decision to become an entrepreneur that explores these tradeoffs in greater detail. That model extends the classic Evans and Jovanovic (1989) model of occupational choice with liquidity constraints to a setting in which retirement savings can be used in addition to standard wealth.

Understanding how access to retirement savings capital affects startup activity for older workers is also important for understanding retirement transition more generally. Some workers may wish to transition to retirement through entrepreneurship in order to postpone the drawdown of retirement

savings or otherwise delay the retirement decision.

This has implications for Social Security. Given the common practice of filing for Social Security Benefits at exactly the age of entering retirement, an important open question is whether older entrepreneurs begin drawing down social security when they leave their job to start the business, or whether the business launch postpones claiming social security. On the one hand, individuals might be more likely to draw social security while starting a business in order to smooth out the potential volatility they face as new entrepreneurs. On the other hand, the common heuristic of filing for social security on the date that they begin retirement could lead such individuals to postpone. Ultimately this is an empirical question.

Indeed, as increasing numbers of workers reach retirement age, placing strain on fiscal budgets, productivity and the solvency of the retirement system, this raises important questions surrounding the future of work. In particular, important for thinking about the financing of the gig economy.

## References

- [1] Adelino, Manuel, Song Ma and David T. Robinson (2017). Firm Age, Investment Opportunities and Job Creation. *Journal of Finance*, 72(3): 999-1038.
- [2] Azouley, Jones, Kim and Miranda (2018). Age and High-Growth Entrepreneurship. Working Paper, MIT.
- [3] Bennett, Victor and Ronnie Chatterji (2017). The Entrepreneurial Process: Evidence from a Nationally Representative Survey. Working Paper, Duke University.
- [4] Bhidé, Amar. *The Origin and Evolution of New Businesses*. Oxford University Press, 1999.
- [5] Evans, and Jovanovic (1989). An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. *Journal of Political Economy*, 97(4):808-827
- [6] Hung, Angela A. and David T. Robinson, 2019. A Model of Entry into Self-Employment with Specialized Liquidity Constraints. Working Paper, Duke University and RAND Corporation.
- [7] Hurst, Erik and Benjamin Pugsley (2011). “What do Small Businesses Do?,” *Brookings Papers on Economic Activity, Economic Studies Program*, The Brookings Institution, vol. 43(2 (Fall)), pages 73-142.
- [8] Puri, Manju and David T. Robinson (2013). The Economic Psychology of Entrepreneurship and Family Business, *Journal of Economics and Management Strategy*. 22(2): 423-444.
- [9] Quadrini, Vincenzo (2005). The Importance of Entrepreneurship for Wealth Concentration and Mobility. *Review of Income and Wealth*, 45(1): 1-49.
- [10] Robb, Alicia and David T. Robinson (2014). The Capital Structure Decisions of New Firms. *Review of Financial Studies*, 27(1): 153-179.
- [11] US Census Annual Survey of Entrepreneurs (2014).

Table 1: Racial Backgrounds of ROBS Startups

This table reports the self-reported racial background of survey respondents. The first two columns report raw respondent counts by ROBS classification. The third reports the total across both groups. The next two columns report the fraction of non-ROBS and ROBS filers of that self-reported racial group. The final column reports the p-value associated with the test that the proportions of non-ROBS and ROBS filers of each racial group are the same. The column headed “ASE” reports the proportions reported in the Annual Survey of Entrepreneurs.

Race	Total Counts			Proportion			2014
	Non-ROBS	ROBS	Total	Non-ROBS	ROBS	p-val	ASE
Caucasian	114	302	416	0.35	0.76	0.00	81.68%
Black	69	25	94	0.2	0.06	0.00	2.00%
Hispanic	45	23	68	0.13	0.06	0.00	5.50%
Asian	52	20	72	0.15	0.06	0.00	9.32%
Native	9	6	15	0.03	0.01	0.27	0.09%

Table 2: Education and Age of ROBS Founders

This table reports the self-reported racial background of survey respondents. The first two columns report raw respondent counts by ROBS classification. The third reports the total across both groups. The next two columns report the fraction of non-ROBS and ROBS filers of that self-reported racial group. The final column reports the p-value associated with the test that the proportions of non-ROBS and ROBS filers of each racial group are the same.

Panel B: Educational Background						
Education	Total Counts			Proportion		p-val
	Non-ROBS	ROBS	Total	Non-ROBS	ROBS	
Associate's	53	48	101	0.15	0.12	0.16
Bachelors	98	185	283	0.28	0.45	0.00
Masters	71	97	168	0.20	0.24	0.26
Doctorate	12	12	24	0.03	0.03	0.69
High school	114	66	180	0.33	0.16	0.00

Panel C: Respondent Age						
Age	Total Counts			Proportion		p-val
	Non-ROBS	ROBS	Total	Non-ROBS	ROBS	
18 – 29	25	2	27	0.07	0.00	0.00
30 – 39	61	13	74	0.18	0.03	0.00
40 – 49	90	85	175	0.26	0.21	0.10
50 – 59	106	208	314	0.31	0.51	0.00
60 – 69	47	88	135	0.14	0.22	0.00
70+	19	12	31	0.05	0.03	0.08

Table 3: Reasons for Starting a Business

Guidant/LendingTree data. Responses to the question, “Why did you start your own business?” A total number of 756 observations are included. Respondents were allowed to give multiple responses. The first column reports the raw number of observations offering that reason. The second column expresses that raw number as a fraction of the total sample. Columns 3 and 4 report the sample proportions for non-ROBS and ROBS filers. The final column reports the p-value associated with the test that the two groups have equal sample proportions.

Rationale	N	Percentage	Non-ROBS	ROBS	p-val(diff)
Be My Own Boss	387	0.51	.494	.527	0.371
Dissatisfaction	238	0.31	.172	.436	0.000
Laid Off	146	0.19	.1149	.2598	0.000
Opportunity	269	0.36	.3477	.3627	0.667
Passion	309	0.41	.4885	.3407	0.000
Not Ready to Retire	142	0.19	.132	.235	0.000
Life Event	43	0.06	.066	.049	0.313



Table 4: Pushed or Pulled into Entrepreneurship?

This table reports probit regressions in which the dependent variable is a dummy for whether the respondent in question launched their business by rolling over retirement assets. Push factors is the sum of “Dissatisfaction,” “Laid off,” and “Not ready to retire” from the previous table. Pull factors is the sum of “Be My Own Boss,” “Opportunity,” and “Passion” from the previous table. Point estimates are reported as marginal probabilities. Race, gender and age controls are introduced as dummy variables and correspond to the categories and groups reported in Tables 1 and 2.

	(1)	(2)	(3)	(4)
Push factors	0.22*** (0.025)	0.20*** (0.027)	0.20*** (0.027)	0.18*** (0.028)
Pull factors	-0.05** (0.021)	-0.04* (0.023)	-0.04* (0.023)	-0.03 (0.024)
<u>Controls:</u>				
Race	No	Yes	Yes	Yes
Gender	No	No	Yes	Yes
Age	No	No	No	Yes
Observations	756	756	756	756

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5: The Prevalence of ROBS Across Business Types

This table reports the frequency of different business types according to whether the business in question is financed by a ROBS transaction or not. The first column presents the total number of observations of each business type. The second column reports the total for transactions not financed by ROBS. The third column reports total observations that are ROBS financed for that business type. The final column reports the t-statistic for the test that the sample proportions of each business type are identical across ROBS and non-ROBS observations.

Business type	Total	Non-ROBS	ROBS	t(diff)
Existing franchise	106	18	88	-6.65
New franchise	107	25	82	-5.16
Existing independent business	266	130	136	1.15
New independent business	277	175	102	7.44
Total	756	348	408	

Table 6: The Use of ROBS Across Industries

Industry	Non-ROBS	ROBS	Total
Automotive	17	30	47
Business services	44	44	88
Childcare	2	3	5
Cleaning and maintenance	13	11	24
Education	8	11	19
Food/restaurant	48	64	112
General retail	27	22	49
Health/beauty/fitness	39	35	74
Home services	11	19	30
Other	98	105	203
Pet care	2	6	8
Senior care	7	10	17
Sports and recreation	2	12	14
Technology	19	11	30
Travel/ Lodging	11	25	36
Total	348	408	756

Table 7: Sources of Financing

This table reports the proportions of ROBS and Non-ROBS financed firms that receive a second source of funding of the type listed. The first column reports the overall proportion of each type of financing. The second column reports the proportion for businesses not financed by ROBS. The third column reports proportions for firms that are ROBS financed. The final column reports the p-value for the test that the sample proportions of each financing type are identical across ROBS and non-ROBS sub-samples.

Financing Type	Overall	Non-ROBS	ROBS	p-value(diff.)
SBA Loan	0.164	0.109	0.210	0.0002
Unsecured Loan	0.087	0.115	0.064	0.0129
Line of Credit	0.119	0.152	0.091	0.0091
Port. Loan	0.021	0.029	0.015	0.1821
Equip. Lease	0.036	0.037	0.034	0.8225
HELOC	0.049	0.043	0.053	0.493
Cash	0.460	0.664	0.287	0.0000
Friends & Family	0.147	0.221	0.083	0.0000

Table 8: Employment and the Firm Size Distribution

This table reports the firm size distribution in terms of the number of employees for both ROBS filers and all other firms, along with the p-value associated with the t-test that the proportions of ROBS and non-ROBS are equal.

Employees	Non-ROBS	ROBS	Total	Non-ROBS	ROBS	p-value(diff)
0 - 1	129	78	207	0.37	0.19	0.00
2 - 5	146	149	295	0.42	0.37	0.13
6 - 10	31	71	102	0.09	0.17	0.00
11-15	14	35	49	0.04	0.09	0.01
16-20	11	15	26	0.03	0.04	0.69
21-30	6	26	32	0.02	0.06	0.00
31-50	6	12	18	0.02	0.03	0.27
51+	5	22	27	0.01	0.05	0.00

Table 9: Growth Intentions

This table reports frequency distributions for the question “What are your stated intentions with the business?” The 108 “Other-please specify” responses were hand-coded for growth intentions.

Stated Intention	Specifies:		
	No Growth	Growth	Total
Grow your current location	0	445	445
Open an additional location	0	141	141
Other (please specify)	76	32	108
Sell	62	0	62
Total	138	618	756

Table 10: The Use of ROBS Plans over Time

This table presents counts of new ROBS filings as well as summary statistics on the amount of employer securities and total plan size in the founding year. New Filings is the count of newly registered ROBS transactions, defined as having employer securities, not being structured as an ESOP, and having fewer than 3 plan participants in the founding year. Emp. Sec. is the amount of employer securities at year end (Schedule I, 3d), in dollars. Plan Size is the total plan assets at year end (Schedule I, 1a), in dollars.

Year	Count	Qualified Employer Security Values					Total Retirement Plan Asset Values				
		P25	P50	Mean	P75	P95	P25	P50	Mean	P75	P95
2009	1,907	61,005	117,898	154,894	200,000	418,157	65,507	123,574	164,143	209,281	442,619
2010	3,506	49,649	101,002	149,686	194,990	430,337	53,375	109,080	158,237	204,133	453,543
2011	2,772	60,000	119,000	164,533	207,449	461,096	68,330	127,710	177,124	222,172	498,009
2012	3,016	63,233	120,082	163,416	216,924	430,167	70,526	133,374	180,451	233,406	483,569
2013	3,072	67,075	131,666	176,851	234,816	485,000	74,975	145,225	194,426	254,633	510,519
2014	3,352	70,000	133,659	188,794	240,000	524,501	76,772	147,415	207,491	262,278	562,158
2015	3,303	72,089	140,000	194,960	250,000	540,000	79,745	150,661	210,172	269,614	581,153
2016	3,394	77,437	140,121	200,704	249,970	535,810	83,984	154,341	222,503	274,046	599,970
Total	24,322	65,000	125,000	175,601	225,000	490,000	71,588	136,599	190,988	245,367	521,396

Table 11: The Evolution of Plan Values as Firms Age

This tables reports the event time distribution of plan values. Initial year is the first year of filing, pooled across all filing years; likewise  $t + k$  is  $k$  years after the initial filing. Panel A reports quantiles of employer security valuations at year end (Schedule I, 3d), in dollars; Panel B reports quantiles of total plan assets (Schedule I, 1a), in dollars.

Panel A: Qualified Employer Security Values								
Year	N	p05	p25	Median	Mean	p75	p95	p99
Initial	24,322	2,009	65,000	125,000	175,601	225,000	490,000	887,542
$t + 1$	18,375	0	41,289	106,192	171,073	219,655	528,023	1,066,363
$t + 2$	13,455	0	38,571	111,492	187,593	234,300	599,222	1,284,767
$t + 3$	9,466	0	38,906	119,568	204,711	258,589	664,969	1,431,722
$t + 4$	6,421	0	40,033	125,919	227,132	275,273	762,800	1,664,655
$t + 5$	4,053	0	38,695	133,560	252,694	288,255	867,100	2,100,000

Panel B: Total Plan Valuations								
Year	N	p05	p25	Median	Mean	p75	p95	p99
Initial	24,322	5,142	71,588	136,599	190,988	245,367	521,396	970,442
$t + 1$	18,375	0	47,334	116,986	185,549	237,761	567,340	1,146,357
$t + 2$	13,455	0	43,858	122,286	202,489	250,766	642,003	1,368,219
$t + 3$	9,466	0	44,708	130,000	221,049	277,483	715,680	1,537,578
$t + 4$	6,421	0	47,875	139,788	244,704	294,157	826,848	1,725,949
$t + 5$	4,053	0	46,720	146,224	273,368	314,674	970,092	2,123,023



Table 12: The Evolution of Firm Values over Time

This table illustrates how the top three and bottom three deciles of the size distribution of firms born in 2009 evolve over time. A total of 2,742 firms are in the top three deciles, while 2,496 are in the bottom three deciles. The column labelled “Failed” reports the total cumulative number of those firms that are no longer reporting, expressed as a percentage. Then for the remainder of firms still alive, the next three columns report the percentage that are in each group of deciles.

Year	Group	Failed	Bottom 3	Middle 4	Top 3
2010	Top 3	4.2%	11.1%	19.3%	69.6%
2010	Bottom 3	8.1%	57.9%	35.8%	6.3%
2011	Top 3	5.8%	10.0%	26.7%	63.3%
2011	Bottom 3	15.2%	50.2%	39.7%	10.1%
2012	Top 3	9.8%	13.6%	24.8%	61.5%
2012	Bottom 3	21.7%	43.4%	43.0%	13.6%
2013	Top 3	13.8%	14.6%	27.8%	57.6%
2013	Bottom 3	29.0%	38.6%	47.1%	14.3%
2014	Top 3	18.4%	15.2%	30.7%	54.1%
2014	Bottom 3	35.0%	42.7%	42.2%	15.1%

Table 13: Firm Survival

This table reports statistics on firm survival by birth cohort. Duration is the average number of years between first and last appearance in the data. (Obviously this is right-censored, which is apparent in the data.) Percent surviving at least 2 or 3 years is exactly that. Alive in 2016 is the proportion of firms in that birth cohort that were active or had a final filing in 2016.

Year	Duration (Yrs)	Percent Surviving:		Alive in 2016
		At Least 2 Yrs.	At Least 3 Yrs.	
2009	4.321	0.78	0.679	0.393
2010	3.73	0.746	0.643	0.426
2011	3.459	0.779	0.677	0.509
2012	3.013	0.805	0.701	0.595
2013	2.352	0.789	0.666	0.666
2014	1.667	0.776	0	0.776
2015	0.874	0	0	0.874
2016	0	0	0	1

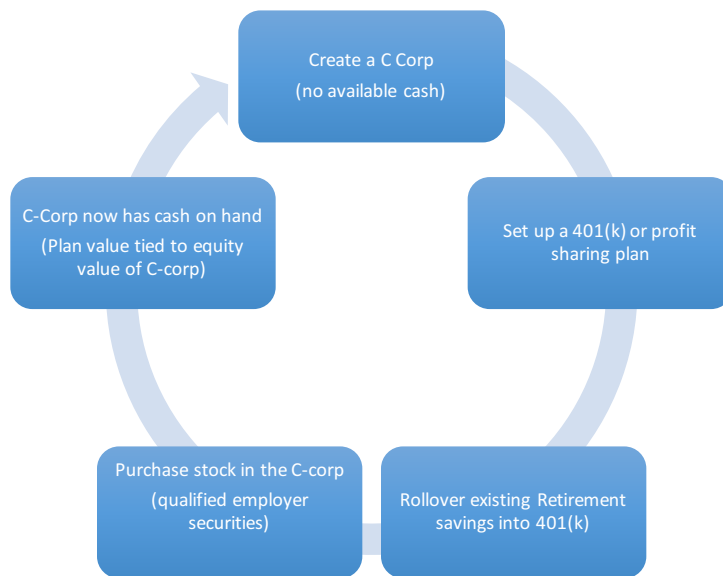


Figure 1: Overview of the ROBS Process

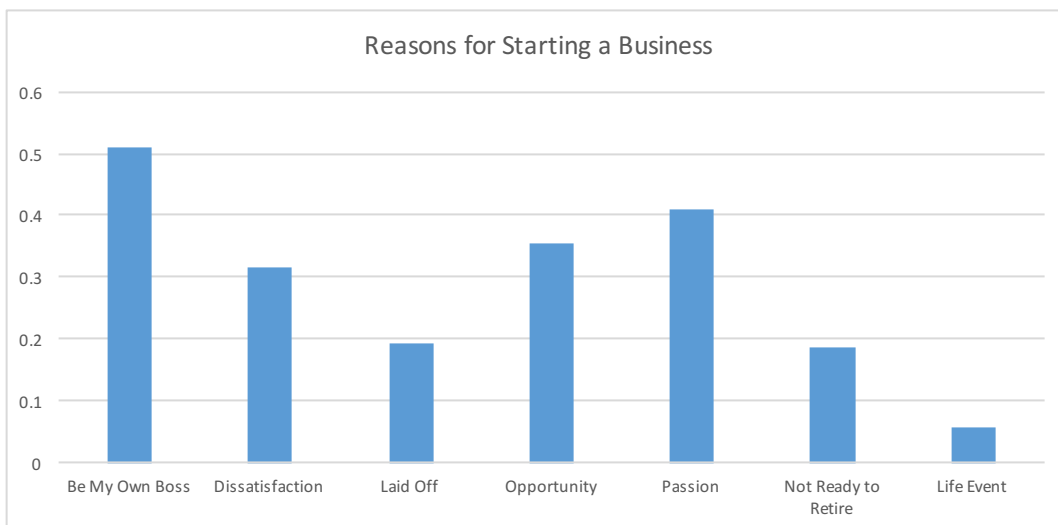


Figure 2: Reasons for Starting a Business



Figure 3: Distribution of ROBS balances