Estimating the Benefits and Costs of Forming Business Partnerships: Online Appendix

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November 6, 2019

A Sample Construction

In this section, I describe the sample construction in more detail. The SIPP was redesigned in 1996. As a result, the variable names, as well as the data-editing and -imputing procedures, are not consistent between panels before and after 1996. For this reason, I use panels after 1996 including 1996, 2001, 2004, and 2008. The samples between panels are not overlapping.

In SIPP, the respondents were interviewed every four months with questions about, for example, income level and working hours for each month (these questions are labeled as "core modules"). In addition, broader questions ranging from household net worth to child support were asked annually (these questions are labeled as "topical modules"). In particular, for every third wave of interviewing, SIPP provides the household-level net worth and the share of business equity for business owners. Because the household net worth is one of the most important variables for this study and is recorded annually, I construct a panel in which the time unit is a year.

Type of Business Owners A respondent is defined as a business owner if he answered yes

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to the question "Did you own a business?" *and* his working hours for the business are greater than his wage working hours during at least one of three previous waves (representing one year) when the household net worth is recorded. This definition is intended to differentiate an active business owner from a casual business owner.[1] I define a partner as a business owner whose share of business equity is greater than 1% and less than 99%.[2] Business owners whose equity share is greater than or equal to 99% are called single owners, and I drop business owners who reported equity share less than or equal to 1%.

Income SIPP explicitly asks how much each respondent earned for each month in every wave. In principle, one wave covers four months. I use the monthly income only for the survey month because little variation exists in monthly incomes within the same wave. For example, suppose a respondent reported earned income for only two waves and the total amount of earned income for the two waves was \$5,000. Then his annual earned income is calculated as $\$5,000 \times \frac{12}{2}$.

One issue regarding business income is that negative income is reported only for the panel after 2004 and not for the panel before 2004. This difference is due to a change in interview questions for business earnings starting in 2004. For example, some portion of earned income from a business is recorded in TPRFTB after 2004 but not before 2004.[3] To make variables consistent across survey years, I first replace negative income with zero. Then, for start-up owners with zero income, I impute business income to the one reported one year later if it is available.

Other Characteristics SIPP asks other questions regarding characteristics such as age, sex, race, marital status, and education in the wave after the household net worth is recorded. I use this information as the annual characteristics of each respondent.[4] The core modules present

[1] Some respondents in the third wave of the 2004 panel were wrongly recorded as business owners (APDJBTHN=5). I drop these respondents. For more information, see the SIPP user note for Business Feed-Back Problem.

[2] According to this definition, an incorporated firm with multiple owners is considered a business partnership.

[3] For more detailed information, see the SIPP user note for Business Income and Profit/Loss.

[4] I impute the years of education for those who did not respond with 13, the average years of education for the whole population conditional on reporting.

industry information both for workers and for business owners. The years of experience is calculated as max{age - years of education - $6, 1$}.

The Final Sample The final sample is constructed in a similar way to the literature (e.g., Evans and Jovanovic [1989]; Hamilton [2000]; Hurst and Lusardi [2004]). I first construct a two-year panel for males ages 18 to 65. I choose this sample to limit the influence of labor market participation. I call the first year the base year and the second year the subsequent year. I drop business owners in the base year. Some respondents started their business from the last wave in the base year, and I re-categorize these respondents as new business owners in the subsequent year.[5] I also drop unemployed respondents in the base and the subsequent year.[6] I also drop those owners who did not report household wealth. In addition, I drop 15 outliers whose net worth is greater than $10 billion. Among start-up owners in the subsequent year, I drop respondents who answered yes to the question "Was this business owned entirely by members of this household?" I drop these individuals for two reasons. First, the motivation to form a family business may be different from the motivation to start a business with non-household members. Second, forming a partnership among household members does not increase the total value of household net worth, an important mechanism this article investigates. Of 50,014 individuals, 1,145 became business owners in the subsequent year, and they are the start-up owners used for the main analyses. I use the information of workers to compare the current sample with the Consumer Expenditure Survey (CEX) in Appendix B. The number of observations at each stage of sample construction is summarized in Table 1.[7]

[5]A handful of respondents reported business owners only in the last wave in the base year and not in the subsequent year. I drop these respondents.

[6]The unemployed are defined as non-business owners who reported "no job" (RMESR $\in \{6, 7, 8\}$) at least in two waves during a given year. I also drop respondents who were employed but did not report wage earnings in the subsequent year.

[7]Two other sources provide information on ownership choice by start-up owners. The Kauffman Firm Survey (KFS), a panel study of 4,928 businesses founded in 2004, provides detailed information on firm financing, but does not provide start-up owners' wealth information. Another data source is the Panel Study of Entrepreneurial Dynamics (PSED). The PSED provides information on two cohorts of start-up owners, the one starting a business in 1998 and the other in 2005. The PSED provides the household net-worth information by respondents, but it is collected *after* they start a business. Thus, the net-worth information in the PSED may reflect activities during the start-up process, and the first-year performance of the start-up. On the other hand, the SIPP provides the household net-worth information

Table 1: Number of Observations at Each Stage of Sample Construction

Drop if	Workers	Single Owners	Partners
	250,609	11,417	3,486
Business owners in the base year	247,860	2,487	560
Female	114,985	1,358	330
Age < 18 or > 65	66,200	1,229	313
Unemployed in either one of periods	49,911	997	277
No info. on net worth	49,186	983	274
Net worth > \$10 billion	49,171	983	274
Family business	48,869	941	204

B SIPP Oversampling

For the SIPP sample design, the Census Bureau assigned the universe of addresses into two strata, one with a higher proportion of poverty than the other. The Census Bureau selects more samples in the high-poverty stratum. Most of the high-poverty regions coincide with areas populated by more African-American, Hispanic, and female-headed families. As a result, most over-sampled low-income individuals or families are African American, Hispanic, or female-headed families (Huggins and King [1997]). To assess whether the final sample contains relatively more of these low-income individuals, I compare the racial composition of the final sample, including workers, with the racial composition of the Consumer Expenditure Survey (CEX) in 2011.

Table 2 compares the proportion of African Americans with respect to income both for the final sample and for CEX. The proportion of low-income African Americans in the final sample is smaller than the proportion in CEX. This finding suggests most of the over-sampled low-income individuals are more likely to be dropped in the process of sample construction.

before a respondent starts a business, which is more informative in capturing financing capacity when the respondent decides whether to start a business. In addition, the number of observations on start-up owners in the SIPP is *more* than the one in the PSED. For example, the total number of start-up owners in all cohorts of the PSED is 2,044, whereas the total number of start-up owners in all cohorts of the SIPP is 3,047 as shown in Table 1. For these reasons, I choose the SIPP as the main data set for this study.

Table 2: Proportion of African-Americans with Respect to Income Quintiles

	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
CEX 2011 (%)	20	14	11	11	6
Final sample (%)	12	12	9	7	4

NOTE: This table compares the proportion of African Americans in terms of income levels both for the final sample and for CEX 2011. For the final sample, I use incomes in the base year.

C Transfer and Failure: Single Owners vs. Partners

A potential limitation of my analysis is that I use the initial profit as the outcome of businesses. The initial profit may not entirely capture the returns to entrepreneurship. The returns could be accrued through unrealized capital gains, and thus the realization of these returns is delayed until the business is sold. Similarly, the first-year outcome may not fully capture the dynamics of businesses, especially their failure rate. Depending on the magnitude of the outcomes in the later periods, the current estimates, which are based on the initial outcome, may be biased. For example, if the profit of single owners is greater than the profit of partners in the later periods, the estimated value of partnerships in this article may be upward biased. To gauge the extent to which the outcomes in the later periods are different between single owners and partners, I compare the rate of business transfer and business failure between single owners and partners by using the KFS.

The KFS is a longitudinal study of US firms that began operations in 2004. The KFS followed this cohort for seven years. Although the KFS lacks information about founders' previous wealth (one of the key variables in my model), it provides information about when and why a business stops operations.

To construct a sample, I exclude businesses owned by women, consistent with the main sample. An active business owner is defined similarly to the one in the main sample − a business owner

who typically works 20 or more hours per week.[8] A business partnership is defined as a business operated by more than one active business owner in the beginning. Consistent with the main sample, I categorize a business as single ownership if an owner of the business has more than or equal to a 99% equity share. Finally, I exclude businesses that did not report the initial revenue.

The KFS is different from the main sample in two important ways. First, it is not a representative sample of US start-ups. It oversampled high-tech and medium-tech firms.[9] Second, the KFS does not provide an indicator for whether a business is a family business or not. Therefore, business partnerships in the KFS include family businesses, whereas I exclude family businesses in the main sample. The sample includes 3,200 firms among which 832 are partnerships. The proportion of partnerships (26%) is higher than in the main sample, possibly due to a different sampling method or the inclusion of family businesses.

If a firm discontinued its operation, the KFS asked the main reason why the business is out of business. The possible answers include (1) sold to another business, (2) merged with another business, (3) temporarily stopped operations, (4) permanently stopped operations, and (5) other. I define an exit as a "transfer" if the answer is either (1) or (2), and as a "failure" otherwise. Among 3,200 new businesses, 1,250 businesses stopped operations within seven years of starting a business. Among 1,250 exits, the number of transfers and failures is 204 (16%) and 1,046 (84%), respectively.

To see whether the transfer rate is different across sole-owned firms and partnerships, I estimate the following linear probability model:

$$\text{Transfer}_i = \beta_0 + \beta_1 D_{\text{partner}} + \beta_2 \text{Initial revenue}_i + \epsilon_i, \tag{1}$$

where i indicates a business. Transfer is 1 if a business experienced a transfer within seven years, and

[8] The KFS provides discretized working hours, and the smallest value indicates between 1 and 19 working hours per week.

[9] For the definition of high- and medium-tech firms, see Ballou et al. [2007].

zero otherwise. D_{partner} is the indicator function for partnership. The KFS provides the initial profit information, but the number of missing values for the profit is much higher than for the revenue. For this reason, I use the initial revenue instead of the initial profits.[10]

Panel A of Table 3 shows the estimation result. I also report the result without conditioning on the initial revenue. Partnerships are 1.6 percentage points more likely to be sold or merged. Conditional on the initial revenue, however, the coefficient becomes insignificant.

I also estimate a similar linear probability model as in equation (1) with failure as the outcome variable. Failure is 1 if a business experienced a failure within seven years, and zero otherwise. The results are shown in Panel B of Table 3. Partnerships are 4.7 percentage points less likely to fail on average. Conditional on the initial revenue, however, the coefficient becomes insignificant.

To summarize, the transfer (failure) rate among partners is greater (smaller) than that of single owners, and this difference becomes insignificant once I control for the initial outcome.

[10]The analysis with the initial profit generates the same qualitative results.

Table 3: Transfer and Failure

	Panel A		Panel B	
	(1)	(2)	(3)	(4)
VARIABLES	Transfer	Transfer	Failure	Failure
Partner	0.0162	0.0118	-0.0470**	-0.0299
	(0.00984)	(0.00997)	(0.0189)	(0.0190)
0.Revenue		-0.0547*		0.112**
		(0.0281)		(0.0536)
1.Revenue		-0.0530		0.205***
		(0.0413)		(0.0788)
2.Revenue		-0.0530		0.189*
		(0.0516)		(0.0986)
3.Revenue		-0.0657*		0.239***
		(0.0369)		(0.0704)
4.Revenue		-0.0927**		0.240***
		(0.0389)		(0.0742)
5.Revenue		-0.0676**		0.173***
		(0.0328)		(0.0626)
6.Revenue		-0.0704**		0.123**
		(0.0304)		(0.0581)
7.Revenue		-0.0643**		0.0879
		(0.0286)		(0.0546)
8.Revenue		-0.0389		0.0275
		(0.0287)		(0.0547)
Constant	0.0595***	0.116***	0.339***	0.234***
	(0.00502)	(0.0274)	(0.00963)	(0.0523)
Observations	3,200	3,200	3,200	3,200
R-squared	0.001	0.004	0.002	0.016

NOTE: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Transfer is 1 if a firm is sold or merged with other firms within seven years, and zero otherwise. Failure is 1 if a firm failed within seven years, and zero otherwise. Partner is the dummy variable for partnership at the time of starting a business. The KFS provides discretized revenue information. #.Revenue is a categorical variable for initial revenues. 0.Revenue: zero, 1.Revenue: $500 or less, 2.Revenue: $501 to 1,000, 3.Revenue: $1,001 to 3,000, 4.Revenue: $3,001 to 5,000, 5.Revenue: $5,001 to 10,000, 6.Revenue: $10,001 to 25,000, 7.Revenue: $25,001 to 100,000, 8.Revenue: $100,001 to 1,000,000, 9.Revenue: $1,000,001 or more. I take 9.Revenue as the base group.

D Value Functions

In this section, I explain how value functions for single owners and partners are derived.

Single owners

Without the borrowing constraint, the first-order conditions of a single owner's problem imply

$$(1-\alpha)\theta_i k_i^{\alpha} z_i^{-\alpha} = \kappa z_i, \tag{2}$$

$$\alpha\theta_i k_i^{\alpha-1} z_i^{1-\alpha} = r. \tag{3}$$

Note the left- (right-) hand side of equation (3) is the marginal returns (cost) to capital investment. Rearranging equation (2) and plugging it into the left-hand side of equation (3) implies

$$\alpha\Big(\frac{1-\alpha}{\kappa}\Big)^{\frac{1-\alpha}{1+\alpha}} \theta_i^{\frac{2}{1+\alpha}} k_i^{\frac{\alpha-1}{1+\alpha}} = r. \tag{4}$$

The marginal returns to capital investment go to infinity as the amount of capital investment approaches zero, and they decrease as the amount of capital investment increases. If the borrowing constraint is not binding, the marginal returns to capital investment are equalized with the interest rate r. Therefore, the optimal capital investment and effort levels are $k_i^* = \frac{(1-\alpha)}{\kappa}\big(\frac{\alpha}{r}\big)^{\frac{1+\alpha}{1-\alpha}} \theta_i^{\frac{2}{1-\alpha}}$ and $z_i^* = \frac{(1-\alpha)}{\kappa}\big(\frac{\alpha}{r}\big)^{\frac{\alpha}{1-\alpha}} \theta_i^{\frac{1}{1-\alpha}}$, respectively.

When the borrowing constraint is binding (i.e., k_i^* is greater than λA_i), the marginal returns to capital investment (equation (4)) are strictly greater than the interest rate r. Therefore, a single owner invests up to the borrowing limit λA_i, and the first-order condition with respect to effort (equation (2)) yields $\bar{z}_i = \big(\frac{1-\alpha}{\kappa}\big)^{\frac{1}{1+\alpha}} (\lambda A_i)^{\frac{\alpha}{1+\alpha}} \theta_i^{\frac{1}{1+\alpha}}$.

Let I_i be an indicator function whose value is 1 if $k_i^* > \lambda A_i$ and zero otherwise. The value as a single owner is $V(\theta_i, A_i) = \big(\theta_i k_i^{*\alpha} z_i^{*1-\alpha} - r k_i^* - \kappa \frac{z_i^{*2}}{2}\big)\cdot(1-I_i) + \big(\theta(\lambda A_i)^{\alpha} \bar{z}_i^{1-\alpha} - r\lambda A_i - \kappa \frac{\bar{z}_i^2}{2}\big)\cdot I_i$. Likewise,

the income as a single owner is $y(\theta_i, A_i) = \big\{\big(\theta_i k_i^{*\alpha} z_i^{*1-\alpha} - r k_i^*\big)\cdot(1-I_i) + \big(\theta_i(\lambda A_i)^\alpha \bar{z}_i^{1-\alpha} - r\lambda_i A\big)\cdot I_i\big\}\epsilon_i$.

Partners

I consider a partnership formed by agents i and j with pre-determined equity shares. I first consider the case in which the borrowing constraint is not binding. Given $\{z_j, k_{ij}\}$, the best-response function of agent i is:

$$\tau_i(1-\alpha)\theta_{ij}k_{ij}^\alpha(z_i+z_j)^{-\alpha} = \kappa z_i. \tag{5}$$

Likewise, given $\{z_i, k_{ij}\}$, the best-response function of agent j is:

$$(1-\tau_i)(1-\alpha)\theta_{ij}k_{ij}^\alpha(z_i+z_j)^{-\alpha} = \kappa z_j. \tag{6}$$

Finally, given $\{z_i, z_j\}$, the best-response function of the financial representative is:

$$\alpha\theta_{ij}k_{ij}^{\alpha-1}(z_i+z_j)^{1-\alpha} = r. \tag{7}$$

Combining equations (5) and (6) implies

$$z_i + z_j = \Big(\frac{(1-\alpha)\theta_{ij}}{\kappa}\Big)^{\frac{1}{1+\alpha}} k_{ij}^{\frac{\alpha}{1+\alpha}}. \tag{8}$$

By plugging (8) into the left-hand side of equation (7), the marginal returns to capital investment are derived as

$$\alpha\Big(\frac{1-\alpha}{\kappa}\Big)^{\frac{1-\alpha}{1+\alpha}} \theta_{ij}^{\frac{2}{1+\alpha}} k_{ij}^{\frac{\alpha-1}{1+\alpha}}. \tag{9}$$

As in the single owner's problem, the marginal returns to capital investment of a partnership go to infinity as the amount of capital investment approaches zero, and they decrease as the amount of capital investment increases. If the borrowing constraint is not binding, the marginal returns to capital investment are equalized with the interest rate r. Therefore, the partnership's capital investment and the effort for each partner are derived as $k_{ij}^* = \frac{(1-\alpha)}{\kappa}\left(\frac{\alpha}{r}\right)^{\frac{1+\alpha}{1-\alpha}}\theta_{ij}^{\frac{2}{1-\alpha}}$, $z_i^* = \tau_i\frac{(1-\alpha)}{\kappa}\left(\frac{\alpha}{r}\right)^{\frac{\alpha}{1-\alpha}}\theta_{ij}^{\frac{1}{1-\alpha}}$, and $z_j^* = (1-\tau_i)\frac{(1-\alpha)}{\kappa}\left(\frac{\alpha}{r}\right)^{\frac{\alpha}{1-\alpha}}\theta_{ij}^{\frac{1}{1-\alpha}}$.

Now, I consider the case in which the borrowing constraint is binding (i.e., when k_{ij}^* is greater than $\lambda(A_i + A_j)$). To simplify the notation, I denote $A_i + A_j$ as A_{ij}. I first show that if k_{ij}^* is greater than λA_{ij}, the partnership's capital investment is λA_{ij} at a Nash equilibrium. Suppose $\tilde{k}_{ij} < \lambda A_{ij}$ is supported at a Nash equilibrium when the borrowing constraint is binding. Given $\tilde{k}_{ij}$, the optimal responses by two partners generate $\tilde{z}_i + \tilde{z}_j = \left(\frac{(1-\alpha)\theta_{ij}}{\kappa}\right)^{\frac{1}{1+\alpha}}\tilde{k}_{ij}^{\frac{\alpha}{1+\alpha}}$ by equation (8). Given $\tilde{z}_i + \tilde{z}_j$, suppose the financial representative indeed chooses $\tilde{k}_{ij}$. Then, the marginal returns to capital investment are $\alpha\left(\frac{1-\alpha}{\kappa}\right)^{\frac{1-\alpha}{1+\alpha}}\theta_{ij}^{\frac{2}{1+\alpha}}\tilde{k}_{ij}^{\frac{\alpha-1}{1+\alpha}}$ according to equation (9). Because $\tilde{k}_{ij}$ is less than k_{ij}^* ($\tilde{k}_{ij} < \lambda A_{ij} < k_{ij}^*$), the marginal returns to capital investment are strictly greater than the marginal cost to capital investment (r) if the financial representative chooses $\tilde{k}_{ij}$. This finding implies that by increasing the capital investment more than $\tilde{k}_{ij}$ (which is possible because $\tilde{k}_{ij} < \lambda A_{ij}$), the financial representative can increase the partnership's expected profit, which contradicts the fact that $\tilde{k}_{ij} < \lambda A_{ij}$ is supported at a Nash equilibrium.

Given $\{z_j, k_{ij} = \lambda A_{ij}\}$, the best-response function of agent i is:

$$\tau_i(1-\alpha)\theta_{ij}(\lambda A_{ij})^{\alpha}(z_i + z_j)^{-\alpha} = \kappa z_i. \tag{10}$$

Similarly, given $\{z_i, k = \lambda A_{ij}\}$, the best-response function of agent j is:

$$(1-\tau_i)(1-\alpha)\theta_{ij}(\lambda A_{ij})^{\alpha}(z_i + z_j)^{-\alpha} = \kappa z_j. \tag{11}$$

Combining equations (10) and (11), the effort for each partner is derived as $\bar{z}_i = \tau_i\big(\frac{1-\alpha}{\kappa}\big)^{\frac{1}{1+\alpha}}(\lambda A_{ij})^{\frac{\alpha}{1+\alpha}}\theta_{ij}^{\frac{1}{1+\alpha}}$ and $\bar{z}_j = (1-\tau_i)\big(\frac{1-\alpha}{\kappa}\big)^{\frac{1}{1+\alpha}}(\lambda A_{ij})^{\frac{\alpha}{1+\alpha}}\theta_{ij}^{\frac{1}{1+\alpha}}$.

Let I_{ij} be an indicator function whose value is 1 if $k_{ij}^* > \lambda A_{ij}$, and zero otherwise. The value from partnership for agent i who is matched with agent j is $V_{ij}(\theta_{ij}, A_{ij}, \tau_i) = \Big(\tau_i\big\{\theta_{ij}k_{ij}^{*\alpha}(z_i^* + z_j^*)^{1-\alpha} - rk_{ij}^*\big\} - \frac{\kappa}{2}z_i^{*2}\Big)\cdot(1-I_{ij}) + \Big(\tau_i\big\{\theta_{ij}(\lambda A_{ij})^{\alpha}(\bar{z}_i+\bar{z}_j)^{1-\alpha} - r\lambda A_{ij}\big\} - \frac{\kappa}{2}\bar{z}_i^2\Big)\cdot I_{ij}$. The value from partnership for agent j who is matched with agent i is $V_{ji}(\theta_{ij}, A_{ij}, 1-\tau_i) = \Big((1-\tau_i)\big\{\theta_{ij}k_{ij}^{*\alpha}(z_i^* + z_j^*)^{1-\alpha} - rk_{ij}^*\big\} - \frac{\kappa}{2}z_j^{*2}\Big)\cdot(1-I_{ij}) + \Big((1-\tau_i)\big\{\theta_{ij}(\lambda A_{ij})^{\alpha}(\bar{z}_i+\bar{z}_j)^{1-\alpha} - r\lambda A_{ij}\big\} - \frac{\kappa}{2}\bar{z}_j^2\Big)\cdot I_{ij}$. Likewise, the income from partnership for agent i who is matched with agent j is $y_{ij}(\theta_{ij}, A_{ij}, \tau_i) = \tau_i\big\{\big(\theta_{ij}k_{ij}^{*\alpha}(z_i^* + z_j^*)^{1-\alpha} - rk_{ij}^*\big)\cdot(1-I_{ij}) + \big(\theta_{ij}(\lambda A_{ij})^{\alpha}(\bar{z}_i+\bar{z}_j)^{1-\alpha} - r\lambda A_{ij}\big)\cdot I_{ij}\big\}\epsilon_{ij}$, and the income from partnership for agent j who is matched with agent i is $y_{ji}(\theta_{ij}, A_{ij}, 1-\tau_i) = (1-\tau_i)\big\{\big(\theta_{ij}k_{ij}^{*\alpha}(z_i^* + z_j^*)^{1-\alpha} - rk_{ij}^*\big)\cdot(1-I_{ij}) + \big(\theta_{ij}(\lambda A_{ij})^{\alpha}(\bar{z}_i+\bar{z}_j)^{1-\alpha} - r\lambda A_{ij}\big)\cdot I_{ij}\big\}\epsilon_{ij}$.

References

Ballou, J., T. Barton, D. DesRoches, F. Potter, Z. Zhao, B. Santos, and J. Sebastian (2007). Kauffman firm survey (kfs) baseline methodology report. *Available at SSRN 1024045*.

Evans, D. S. and B. Jovanovic (1989). An estimated model of entrepreneurial choice under liquidity constraints. *Journal of political economy 97*(4), 808–827.

Hamilton, B. H. (2000). Does entrepreneurship pay? an empirical analysis of the returns to self-employment. *Journal of Political economy 108*(3), 604–631.

Huggins, V. J. and K. E. King (1997). Evaluation of oversampling the low income population in the 1996 survey of income and program participation (sipp). *Proceedings from the Survey Research Methods Section of the American Statistical Association*, 501–506.

Hurst, E. and A. Lusardi (2004). Liquidity constraints, household wealth, and entrepreneurship. *Journal of political Economy 112*(2), 319–347.