

Small Business Economics Online Appendix:

A second chance for failed entrepreneurs: a good idea?

A1 Robustness Checks

A1.1 Robustness check 1: Subgroups of entrepreneurs

In our first robustness check, we divide the group of entrepreneurs into different subgroups and compare the failed entrepreneurs with the novices within each subgroup. The rationale for building subgroups is that talent in general and entrepreneurial talent in particular are unequally distributed in the population and therefore the consequences of failure experience might be different for different subgroups of entrepreneurs. For example, university graduates may be smart people who are more able to learn from failure or even deliberately cause a failure event (without running into bankruptcy) to study the limits of a business idea, indicating a high entrepreneurial spirit. The effect of failure experience may thus be different for university graduates than for all entrepreneurs as a whole. To gain more insights into whether the negative relationship between failure experience and survival of a new business is a general phenomenon or whether there are exceptions from the rule, we divided the group of entrepreneurs into several subgroups. We based the classification of the entrepreneurs on human capital characteristics because human capital has been shown to be important for young firm survival (Bates, 1990; Brüderl et al, 1992; Cooper et al, 1994; Cressy, 1996; Gimeno et al, 1997; Taylor, 1999; Prantl, 2003). It is reasonable to assume, therefore, that people with different levels of human capital benefit differently from failure experience. Furthermore, we look at businesses run by female entrepreneurs because women might suffer from discrimination (Gottschalk and Niefert, 2013). We grouped the entrepreneurs in our sample by education level (university degree, master craft education, vocational training/no education), experience (industry experience, managerial experience), and gender.

To analyze the effects for the subgroups, we define dummy variables and modify I in our hazard rate $h = \frac{\exp(I)}{1+\exp(I)}$ such that:

$$I = \beta_0 + \beta'_1 \text{Failure_}W_i + \beta'_2 \text{Failure_non}W_i + \beta'_3 W_i + \beta'_4 X_i + \beta'_5 Z_{ij} + u_i,$$

where W_i is the grouping variable in question, β_4 and β_5 are the coefficient vectors to be estimated for the time-invariant and the time-variant explanatory variables, respectively. The difference between failed entrepreneurs and novices with a specific characteristic is then given by β_1 .¹ (The hazard rates for the competing risk model are adjusted accordingly.)

While we run the regressions with the full set of control variables as in Table 2 of the paper, in the following we present only the results for the marginal effect of β_1 and the corresponding test results to save space. The full tables are available from the authors on request.

Table A1 shows the estimated effects of the comparison of failed entrepreneurs with novices with the same observed characteristics. It turns out that for the subgroups considered the results are almost unchanged when compared with Table 2 in the paper. Failed entrepreneurs of all subgroups are more likely to close again than their novice counterparts. At any rate, the size of the estimated effects is not significantly different from those for all entrepreneurs in Table 2.

Regarding the exit path, the effects coincide with the overall effects. In all subgroups, failed entrepreneurs are more likely to dissolve their venture and go bankrupt than novices. Again, the effects are comparably weak for university graduates and particularly pronounced for females. In sum, we do not find that there is a sub-group of failed entrepreneurs that is more able to recognize danger than novices.

¹ $\text{Failure_}W_i = 1$ if an entrepreneur has failed in the past and has a certain observable characteristic. For example, $\text{Failure_Uni}_i = 1$ if an entrepreneur has failed and has a university degree. $\text{Failure_non}W_i = 1$ if an entrepreneur has failed in the past but does not exhibit the relevant characteristic. (E.g. $\text{Failure_nonUni}_i = 1$ if a failed entrepreneur has no university degree.)

Table A1: Relationship between failure experience and new business closure for different subgroups, marginal effects

Dep. var.: survival of the following year (y/n)	Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year		
	(1)	Failure event 1: dissolution (2)	Failure event 2: bankruptcy (3)
University graduates			
Failure experience	-0.038*** (0.010)	0.025*** (0.008)	0.014* (0.008)
Master craftsmen			
Failure experience	-0.047*** (0.013)	0.023** (0.011)	0.023*** (0.007)
Low education (voc. train./no educ.)			
Failure experience	-0.035*** (0.009)	0.016** (0.007)	0.018*** (0.005)
Above-average industry experience			
Failure experience	-0.044*** (0.009)	0.022*** (0.007)	0.022*** (0.006)
Managerial experience			
Failure experience	-0.045*** (0.010)	0.018** (0.009)	0.026*** (0.006)
Females			
Failure experience	-0.059*** (0.016)	0.031** (0.013)	0.027*** (0.010)

Figures denote marginal effects of β_1 of the estimation equation. Same set of control variables as well as sector, cohort and year dummies included as in Table 2 of the paper. Standard errors in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero.

Source: IAB/ZEW Start-up Panel; authors' calculations.

A1.2 Robustness check 2: Incorporated businesses

In the previous robustness check we split up the entrepreneurs according to their human capital and socio-economic characteristics to study whether failure experience has different effects in different subgroups. Another way to go more into detail is to compare the entrepreneurs according to the legal form they chose for their company. This comparison is based on an idea by Levine and Rubinstein (2017), who claim that self-employed who set up an incorporated company are more entrepreneurial than those who found an unincorporated business.² The authors show that the incorporated perform more activities that require non-routine cognitive skills, such as creativity and problem-solving, than the unincorporated. In addition, the incorporated tend to be more educated and are more likely to have non-cognitive traits that are beneficial for entrepreneurship such as a higher learning aptitude.

² We thank an anonymous reviewer for drawing our attention to this.

The analyses for Table 1 of the paper, in which we compare novices with the failed entrepreneurs, show that for many failures the current business was a limited company and that they are much more likely than novices to have a limited company (46% compared to 29%). Thus, if incorporation is a proxy for entrepreneurial ambition and talent it is possible that the relationship between failure experience and survival looks different for the incorporated than for entrepreneurs as a whole. In this robustness check we investigate whether this is the case.

We start by comparing incorporated and unincorporated failures to see whether incorporation works as a proxy for entrepreneurship in our dataset as well (column (1) and (2) in Table A2). And indeed, we find that the incorporated failures are more entrepreneurial in the sense of Levine and Rubinstein (2017) than the unincorporated: They are more likely to have a university degree, to be opportunity entrepreneurs, to do R&D, to be active in new technology-based manufacturing, software and knowledge-intensive services, and have founded larger companies. However, if we compare the incorporated failures with the incorporated novices we find that the failures are still less entrepreneurial than the novices, at least in some dimensions. They are less likely to be university graduates, to have managerial experience, and to be active in new technology-based manufacturing.

Table A2: Comparison of incorporated failures, unincorporated failures and incorporated novices in the start-up year of the current venture

	Incorporated failures Mean (1)	Unincorporated failures Mean (2)	Sig. (1) vs. (2)	Incorporated novices Mean (3)	Sig. (1) vs. (3)
<i>Entrepreneur's human capital characteristics</i>					
Degree qualification (y/n)	45.62	22.65	***	55.31	***
Mastercraft qualification (y/n)	19.18	27.43	***	18.47	
Vocational training (y/n)	29.21	44.22	***	22.41	***
No educational degree	5.73	5.70		3.41	***
Age (years)	42.96	41.87	*	41.02	***
Experience in industry (years)	15.65	15.13		13.36	***
Managerial experience (y/n)	31.60	31.53		54.23	***
Female (y/n)	6.26	14.33	***	13.45	***
Motive: opportunity (y/n)	38.46	21.73	***	36.53	
Motive: necessity (y/n)	11.99	20.34	***	13.83	
Motive: independence (y/n)	37.39	44.38	***	39.26	
<i>New business characteristics</i>					
Number of employees	3.12	2.29	***	3.58	
Financing problem (y/n)	21.49	22.33		17.42	*
Government funding (y/n)	14.49	30.82	***	26.10	***
Retained earnings (% of cash-flow)	39.45	34.90	*	36.47	
External financial capital (% from ext. sources)	8.60	12.11	**	10.50	
Investments (thousand €)	58.14	43.40		67.00	
R&D (y/n)	27.18	11.85	***	26.93	
<i>Sectors¹⁾</i>					
New technology-based manufacturing	13.60	5.86	***	16.75	*
New technology-based services	22.36	19.41		21.66	
Software	15.21	3.08	***	9.11	***
Non-high-tech manufacturing	8.77	9.55		11.66	**
Knowledge intensive services	9.30	5.86	**	9.49	
Other business services	7.87	10.63	*	7.03	
Consumer services	7.16	14.64	***	8.78	
Construction	8.94	15.41	***	7.13	
Retail	6.80	15.56	***	8.40	
<i>Regional characteristics</i>					
Unemployment rate	7.23	7.40		7.26	
GDP per capita (thousand €)	35.63	31.90	***	35.64	

Note: ¹⁾ The respective NACE codes of the sector aggregates can be found in Table B in the appendix.

Source: IAB/ZEW Start-up Panel; authors' calculations.

This observation is reflected in the regression results. When we estimate the effect of failure experience on the survival of the current business, we find that the businesses of incorporated failures are less likely to survive than that of incorporated novice (Table A3). The effect is much less negative than for all failures as a whole, but this is because there is no difference between the two groups with

respect to voluntary dissolution. The effect for going bankrupt is of similar size to that for all entrepreneurs. Thus, although the incorporated failures are better with respect to their observable characteristics, we still must reject the hypothesis that they are more likely to survive with their current business than novices.

Table A3: Relationship between failure experience and new business closure for incorporated businesses, marginal effects

Dep. var.: survival of the following year (y/n)		Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year	
	(1)	Failure event 1: dissolution (2)	Failure event 2: bankruptcy (3)
Failure experience	-0.024** (0.011)	-0.000 (0.010)	0.020*** (0.006)
Control variables	YES	YES	YES
Sector dummies	YES	YES	YES
Cohort dummies	YES	YES	YES
Year dummies	YES	YES	YES
Number of observations	16,860	16,860	
Wald Chi ² (48)	727.88***		
Wald Chi ² (96)		1,141.83***	
Pseudo-R ²	0.069	0.088	

The same estimation approach was applied as for the subgroup analysis. Figures denote β_1 of the estimation equation. The same set of control variables and sector, cohort, and year dummies were included as in Table 2 of the paper. Standard errors in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero.

Source: IAB/ZEW Start-up Panel; authors' calculations.

A1.3 Robustness check 3: Number of past failure events

An issue with our estimation so far could be that we use dummy variables that can only indicate whether or not an entrepreneur has failed in the past but not how often this has been the case. There is the story – in particular with regard to successful Silicon Valley entrepreneurs – that an entrepreneur has to fail several times before s/he sets up “the next big thing”. Furthermore, Toft-Kehler et al (2014) find that the financial performance of the current business first decreases but then increases with the number of ventures founded. Thus, several failure events may be needed to create a learning effect. The probability of success may increase with every failure event or is U-shaped with the number of ventures founded in the past. If it is the case that we have an above-average number of first-time failures in our dataset, then the results from our dummy variable approach in Table 2 of our paper

would be driven by not taking into account failed entrepreneurs with enough opportunities to learn from their failures. The dummy variable would obscure learning effects so that we mistakenly associate failure with low entrepreneurial talent.

To check whether this is a real issue we make use of the Mannheim Enterprise Panel (MUP), which includes information about the failure history of entrepreneurs. After merging the Start-up Panel to the MUP, we can identify in 48% of the cases in our sample how many businesses entrepreneurs had previously and how many that failed.³ 23% of these entrepreneurs dissolved more than one previous business and 16% went bankrupt at least two times.

Table A4 shows the results of the estimations when we replace the dummy variables in Table 2 with the number of failure events in the past. We also ran a version of each regression including a quadratic term of the number of failure events. However, the coefficient of the quadratic term was not significant in most of the cases.⁴ It turns out that the number of previous failure events is negatively related to survival in the next year. In our specification, each failure event reduces the survival probability by 2.8 percentage points (column (1)). The negative relationship holds both for the number of past dissolutions as well as for the number of past bankruptcies (column (4)). And, as in the main model, the likelihood of both types of market exit of the current venture is increased (column (2) and (3)).

An interesting pattern appears when we differentiate between the type of failure events in the past and the type of market exit of the current venture (column (5) and (6)). The number of past dissolutions increases the likelihood of dissolving the current business but decreases the likelihood of going bankrupt. The reverse is true for the number of past bankruptcies. It seems that failed

³ For the other 50% we cannot unambiguously identify the previously founded firms. This is also the reason why for our main regressions we use the dummy for previous failure yes/no, not the number of previously failed firms.

⁴ The only exception is the coefficient for the quadratic term of the number of past bankruptcies in the competing risk model when the failure event in column (6) is bankruptcy. However, this result is based on a low number of observations because the group of entrepreneurs with a series of past bankruptcies is not particularly large. Thus, we have some doubts concerning the validity of the outcome, in particular because it is the only significant quadratic term.

entrepreneurs repeat their behavior from the past. This is a nuance of the path dependency that can be inferred from the previous literature (e.g. Gompers et al, 2010). Apparently, success does not only breed success but dissolution breeds dissolution and bankruptcy breeds bankruptcy.

Table A4: Relationship between the number of failure experiences and new business closure, marginal effects

Dep. var.: survival of the following year (y/n)		Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year		Dep. var.: survival of the following year (y/n)	Dep. var.: survival/ voluntary dissolution/ bankruptcy of/in the following year	
		Failure event 1: dissolution	Failure event 2: bankruptcy		Failure event 1: dissolution	Failure event 2: bankruptcy
	(1)	(2)	(3)	(4)	(5)	(6)
Number of past failure events	-0.028*** (0.005)	0.016*** (0.003)	0.012*** (0.003)			
Number of past dissolutions				-0.015** (0.006)	0.027*** (0.003)	-0.018** (0.008)
Number of past bankruptcies				-0.046*** (0.007)	-0.015* (0.008)	0.037*** (0.004)
Control variables	YES	YES		YES	YES	
Sector dummies	YES	YES		YES	YES	
Cohort dummies	YES	YES		YES	YES	
Year dummies	YES	YES		YES	YES	
Number of observations	15,645	15,645		15,645	15,645	
Wald Chi ² (47)	685.68***					
Wald Chi ² (94)		1,053.54***				
Wald Chi ² (48)				694.35***		
Wald Chi ² (96)					1,135.32***	
Pseudo-R ²	0.074	0.091		0.075	0.102	

The same control variables were included as in Table 2 of the paper. Standard errors are in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero. Source: IAB/ZEW Start-up Panel; authors' calculations.

Overall, the analyses in this robustness check confirm the negative effect of failure experience on new firm survival and do not support the hypothesis that “one has to fail several times before one gets the chance to set up a successful project”.

A1.4 Robustness check 4: Riskier projects

The line of reasoning we followed until now is that the driving force of the selection process is the talent of entrepreneurs. However, there is an alternative explanation. It could also be that the reason why entrepreneurs fail is that they follow high-risk projects that might also be highly innovative. Arora and Nandkumar (2011) argue that there are (at least some) entrepreneurs who have high opportunity

costs and therefore strongly push their venture on the route of success (e.g. for achieving a cash-out as soon as possible), which at the same time may also increase the risk of the project and the hazard of failure. If it were the case that failed entrepreneurs are those who specialize in pursuing an innovation or quick cash-out strategy, it could be expected that they have higher failure rates than novices. However, these higher failure rates would not be due to lower entrepreneurial talent but to the nature of the project. The implications of the observed outcomes would be quite different from the one based on selection by talent. While it seems doubtful to support failed entrepreneurs based on the analysis so far, failure after having pursued a risky project may call for (substantial) assistance. In this subsection, we aim at getting an idea about whether this second explanation has a valid basis.

The questionnaire of the start-up panel includes a variable asking to what extent a firm (according to their entrepreneurs) has a strong inclination towards high-risk projects with high returns. This question was only posed in waves 7 to 9, i.e. to a subsample of the firms, which is why we did not include this variable in our other regressions. Respondents were asked to rank their inclination for high-risk projects on a Likert scale, from which we define a dummy with value one if the answer has been “inclined” or “strongly inclined” and zero otherwise.

If we compare novices and failed entrepreneurs with respect to their inclination towards high-risk projects, we can see that 14 percent of novices tend to follow risky projects versus 19 percent of failed entrepreneurs. Thus, failed entrepreneurs indeed tend to follow a more risky strategy and this difference is significant at the 1 percent level.

When we include the variable measuring risk in our regressions, it turns out that our main results are little affected (Table A5). Failed entrepreneurs are still significantly less likely to survive with their current venture than novices and they are more likely to leave the market via bankruptcy. Thus, the evidence is in favor of the ability explanation rather than the higher risk explanation.

Table A5: Relationship between failure experience and new business closure controlling for project risk

Dep. var.: survival of the following year (y/n)		Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year	
	(1)	Failure event 1: dissolution (2)	Failure event 2: bankruptcy (3)
Failure experience	-0.022*** (0.008)	-0.006 (0.007)	0.023*** (0.005)
High project risk	-0.010 (0.008)	0.007 (0.006)	0.005 (0.006)
Control variables	YES	YES	
Sector dummies	YES	YES	
Cohort dummies	YES	YES	
Year dummies	YES	YES	
Number of observations	3,748	3,748	
Wald Chi ² (40)	113.00***		
Wald Chi ² (80)		1,202.69***	
Pseudo-R ²	0.073	0.115	

Same set of control variables and sector, cohort and year dummies are included as in Table 2 of the paper. Standard errors are in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero.

Source: IAB/ZEW Start-up Panel; authors' calculations.

A1.5 Robustness check 5: Teams

We included only sole entrepreneurs in our study. The reason for this is that from our dataset we do not know who in a team had previous experience as an entrepreneur. Our information is only about whether or not there is someone in the founding team who has experience as a business owner. Consequently, we cannot distinguish between teams where only a minority has failure experience and those where a majority or even all team members are previously failed entrepreneurs. Yet, it is very likely that the fraction of persons with failure experience in a team is important for the effect of failure experience on the success of the next business. We thus decided to focus exclusively on sole entrepreneurs, for only in that case we know whether they were previously failed entrepreneurs or not.

By restricting the sample in this way, we inevitably exclude some of the previously failed entrepreneurs who started another venture. It is even conceivable that we exclude just those entrepreneurs who learned from the failure of their previous business because these persons may have realized that it can be beneficial for them to team up with others. If this is the case, our results

on sole entrepreneurs are biased and only tell part of the story. Hence, we checked whether there is an indication for such a bias and re-ran our main regression from Table 2 including teams, though our measure of previous entrepreneurial experience is imperfect. For these regressions, our variable of interest (“failure experience”) is 1 if at least one of the members of the founding team has experienced failure in the past and 0 otherwise.⁵ This applies equivalently for the other dummy variables in our model. We include a further variable to control for whether a company is founded by a team.⁶

The results of this robustness check are presented in Table A6. We cannot detect any major differences from our main results. Thus, the exclusive focus on sole entrepreneurs does not seem to be a major restriction to our analyses and the conclusions from it.

⁵ As before, we included only teams and sole entrepreneurs who either experienced a failure in the past or who are novices. Teams with previously successful members and previously successful sole entrepreneurs were excluded. In some rare instances, we mixed teams with both successful and failure experience. We exclude them as well, to ensure that the measure of failure experience in a team is as clear as possible.

⁶ We also ran a version of the regressions where we include the team size, i.e. the number of founders in a team. The results are qualitatively no different from the case where we include a team dummy. The regression tables on this variant are available on request.

Table A6: Relationship between failure experience and new business closure including teams, marginal effects

Dep. var.: survival of the following year (y/n)		Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year		Dep. var.: survival of the following year (y/n)	Dep. var.: survival/voluntary dissolution/bankruptcy of/in the following year	
		Failure event 1: dissolution	Failure event 2: bankruptcy		Failure event 1: dissolution	Failure event 2: bankruptcy
	(1)	(2)	(3)	(4)	(5)	(6)
Failure experience	-0.034*** (0.005)	0.018*** (0.004)	0.016*** (0.003)			
Dissolution				-0.029*** (0.005)	0.016*** (0.004)	0.014*** (0.003)
Bankruptcy				-0.054*** (0.010)	0.028*** (0.008)	0.025*** (0.006)
Team	0.010* (0.005)	0.010** (0.004)	-0.017*** (0.003)	0.010* (0.005)	0.011** (0.004)	-0.017*** (0.003)
Control variables	YES	YES	YES			
Sector dummies	YES	YES	YES	YES	YES	YES
Cohort dummies	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES
Number of observations	22,507	22,507		22,507	22,507	
Wald Chi² (48)	966.59***	1,562.99***		973.64***	1,574.02***	
Wald Chi² (96)						
Wald Chi² (49)						
Wald Chi² (98)						
Pseudo-R²	0.069	0.090		0.069	0.090	

The same set of control variables and sector, cohort and year dummies were included as in Table 2 of the paper. Standard errors are in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero.

Source: IAB/ZEW Start-up Panel; authors' calculations.

A1.6 Robustness check 6: Unobserved heterogeneity

Another issue with our estimations is that we run pooled regressions and do not exploit the panel structure of our data. The reason for this is a technical one: We ran into the problem that the algorithm for the competing risk models did not find a solution for the competing risk models. To be consistent across all models, we decided to use pooled data for our estimations. However, our results can be biased if unobserved heterogeneity plays a major role. We checked whether we can find an indication for this and re-ran the single risk model from Table 2 – for which we can find a solution – using a random effects model.

The results of this robustness check are presented in Table A7. From the parameters describing the panel-level variance component we see that unobserved heterogeneity indeed plays a role.

However, in qualitative terms our results remain unchanged. The effects even become more pronounced. Thus, neglecting unobserved heterogeneity in the regressions in the rest of the papers produces a relatively conservative estimate of the effect of failure experience on survival.

Table A7: Relationship between failure experience and new business closure controlling for unobserved heterogeneity, marginal effects

Dep. var.: survival of the following year (y/n)		
Failure experience	-0.042*** (0.007)	
Dissolution		-0.036*** (0.008)
Bankruptcy		-0.074*** (0.015)
Control variables	YES	YES
Sector dummies	YES	YES
Cohort dummies	YES	YES
Year dummies	YES	YES
Number of firms	7,381	7,381
Number of observations	16,860	16,860
Wald Chi ² (47)	495.97***	
Wald Chi ² (48)		492.52***
ln(σ_v^2)	-0.627	-0.528
ρ	0.140	0.152

The same set of control variables and sector, cohort and year dummies were included as in Table 2 of the paper. Standard errors are in parentheses. ***, **, * depict significance at the 1%, 5%, and 10% level, respectively, and correspond to the test of the underlying coefficient being zero.

Source: IAB/ZEW Start-up Panel; authors' calculations.

A2 Results from previous studies

Table A8: Results from previous studies considering the effect of entrepreneurial experience on the performance of the current firm

Author(s)	Result
Non-failure self-employment experience	
Brüderl et al (1992)	Firms of entrepreneurs with self-employment experience are no more likely to survive than firms of novice entrepreneurs.
Gimeno et al (1997)	Firms of entrepreneurs with self-employment experience are no more likely to survive than those of novice entrepreneurs. However, they have higher economic performance (measured by the money taken out by the entrepreneur).
Headd (2003)	Firms in which at least one founder has self-employment experience are more likely to survive than firms of novice entrepreneurs.
Jørgensen (2005)	Firms of entrepreneurs with self-employment experience are more likely to be closed than firms of novice entrepreneurs.
Metzger (2006b)	Firms in which at least one founder has (non-failure) self-employment experience have higher employment growth than firms of novice entrepreneurs.
Metzger (2007)	Experienced entrepreneurs who sold their previous business or previously closed a financially sound firm are no more likely to survive with their current business than novice entrepreneurs. Experienced entrepreneurs who previously closed a financially sound firm are less likely to go bankrupt than novice entrepreneurs.
Gompers et al (2010)	Entrepreneurs who previously had another (venture capital-backed) business are more likely to go public with their current (venture capital-backed) venture than novice entrepreneurs. However, this result is limited to those entrepreneurs who have been successful before.
Eesley and Roberts (2012)	Entrepreneurs with higher number of previous firms have higher revenues when talent is controlled for. However, talent has a twice as large effect on revenues than experience.
Frankish et al (2012)	Firms of entrepreneurs with self-employment experience are no more likely to survive with their current business than novice entrepreneurs.
Chen (2013)	Previous average annual business income and previous time in self-employment of entrepreneurs are positively related with first-year earnings in the current business. However, these effects vanish when controlling for unobservable heterogeneity.
Parker (2013)	Financial performance (average hourly business profits) in one venturing spell is initially positively associated with financial performance in subsequent venturing spells but reverts to the entrepreneur's idiosyncratic mean over time.
Eggers and Song (2015)	Firms of second-time entrepreneurs whose founders experienced a closure of another business in the past do not grow stronger than those of second-time entrepreneurs without closure experience.

Rocha et al (2015)	Longer tenure in the first business is positively related to the survival time of the second business. However, this effect vanishes when controlling for unobservable heterogeneity.
Lafontaine and Shaw (2016)	The number of businesses opened before and the years of prior business experience of the entrepreneur increase the time in operation of the current business. This effect persists when controlling for owner fixed effects.
Nielsen and Sarasvathy (2016)	Firms of second-time entrepreneurs whose founders experienced closure within three years after start-up with their first business are more likely to be closed within 3 years than those of second-time entrepreneurs without such a closure experience with their first business.
Gottschalk et al (2017)	Firms of portfolio entrepreneurs (i.e. those who concurrently run several businesses) and of serial entrepreneurs (i.e. those who sold a previous business or transferred it to a successor) are no more likely to survive than novice entrepreneurs.
Failure experience	
Metzger (2006b)	Firms of failed entrepreneurs (i.e. those who went bankrupt with their previous business) have lower employment growth than those of novice entrepreneurs.
Metzger (2007)	Firms of failed entrepreneurs (i.e. those who voluntarily dissolved a previous firm or went bankrupt with a previous firm) have shorter survival times than firms of novices. The firms of failed entrepreneurs are even more likely to go bankrupt than those of novice entrepreneurs.
Gompers et al (2010)	Failed entrepreneurs (i.e. those who did not succeed going public with a previous (venture capital-backed) firm) are no more likely to succeed (i.e. to go public) with their current venture.
Nielsen and Sarasvathy (2016)	Firms of second-time entrepreneurs who experienced closure associated with a loss in their personal wealth within three years after their first start-up are more likely to be closed with a loss in founders' personal wealth within 3 years than those of second-time entrepreneurs without such a closure-plus-loss experience.

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