# Internet Appendices for

# Firm Mortality and Natal Financial Care

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## Internet Appendix A: Robustness Tests

This part of the internet appendix contains a detailed description of various robustness tests of the paper.

### I. Alternative Definitions of Involuntary Deaths

In our main analysis, we consider a firm as incurring involuntary death if its CRSP delisting code falls between 400 and 490 (liquidations). In this case, the cause of delisting can be due to various reasons for liquidation: the issue stopped trading as a result of company liquidation (400); liquidated for issue trading on NYSE (401); liquidated for issue trading on NASDAQ (403); issue liquidated, final distribution verified, issue closed to further research (450); issue liquidated, no final distribution verified, issue closed to further research (460); issue liquidated, no final distribution verified, issue pending further research (470); issue liquidated, no distribution information available, issue pending further research (480); and issue liquidated, no distributions to be paid, issue closed to further research (490). Because of the reasons it occurs, the termination of such a firm can clearly be classified as an involuntary death.

We also consider as an involuntary death if a firm ceases being a public firm once it is dropped by the exchange (CRSP delisting codes 500-591).[1] Unlike liquidation, however, it is possible that the reason for a firm being dropped may not always be involuntary or terminal.

In this section, we further examine individual delisting codes for the causes of a firm being dropped and narrow the definition of involuntary death regarding dropped firms to codes

[1] The 500-591 range of CRSP delisting codes consists of: Issue stopped trading on exchange—reason unavailable (500); issue stopped trading on current exchange—to NYSE (501), to Amex (502), to NASDAQ (503), to NYSE Arca (504), to Mutual Funds (505), to Boston Exchange (510), to Midwest Exchange (513), to Montreal Exchange (514), to Pacific Stock Exchange (516), to Philadelphia Stock Exchange (517), to Toronto Stock Exchange (519), to trading Over-the-Counter (520), respectively; delisted by current exchange due to: unlisted trading privileges (535); insufficient number of market makers (550); insufficient number of shareholders (551); price fell below acceptable level (552); insufficient capital, surplus, and/or equity (560); insufficient (or non-compliance with rules of) float or assets (561); company request (no reason given) (570); company request, liquidation (572); company request, deregistration (gone private) (573); bankruptcy, declared insolvent (574); company request, offer rescinded, issue withdrawn by underwriter (575); delinquent in filing, non-payment of fees (580); failure to register under 12G of Securities Exchange Act (581); failure to meet exception or equity requirements (582); denied temporary exception requirement (583); does not meet exchange's financial guidelines for continued listing (584); protection of investors and the public interest (585); composition of unit is not acceptable (586); corporate governance violation (587); conversion of a closed-end investment company to an open-end investment company (588); unlisted trading privileges (589); and, delist required by Securities Exchange Commission (SEC) (591).

where the reasons seem more likely to be involuntary and terminal. Specifically, we follow two alternative classifications.

In the first alternative classification we restrict the sample of dropped firms to occurrences with a delisting code falling into 535-591. That is, delisting due to unlisted trading privileges, insufficient number of market makers, insufficient number of shareholders, price fell below acceptable level, insufficient capital, surplus, and/or equity, insufficient (or non-compliance with rules of) float or assets, and company's request for liquidation and deregistration. We then re-estimate the models in Table 1 and re-construct Figures 1 and 2.

Table A1 presents the regression results replicating Table 1 using the redefined involuntary deaths (CRSP delisting codes 400-490 and 535-591). We observe that, similar to Table 1, the proxies for the presence of financial intermediaries are significantly related to the probability of involuntary death. The exception is the last multivariate regression specification, which includes all proxies for financial intermediaries and control variables, where the coefficient of VC backing dummy becomes insignificant.

[Insert Table A1 about Here]

Figures A1 and A2 present the graphs replicating Figures 1 and 2. We observe that, similar to Figures 1 and 2, the mortality rate peaks at year 3 and then decreases as firms grow older, and that firms that are backed by VCs or taken public by more reputable underwriters experience lower mortality rates.

[Insert Figure A1 about Here]

[Insert Figure A2 about Here]

In the second, and even narrower, definition, we restrict involuntary death of dropped firms to those with delisting codes of 551 (delisted due to insufficient number of shareholders), 552 (price fell below acceptable level), 560 (insufficient capital, surplus, and/or equity), 561 (insufficient, or non-compliance with rules of, float or assets), 574 (bankruptcy, declared insolvent), 581 (failure to register under 12G of Securities Exchange Act), 582 (failure to meet exception or equity requirements), 583 (denied temporary exception requirement), 584 (failure to meet exchange's financial guidelines for continued listing), 585 (protection of investors and the public interest), 587 (corporate governance violation), and 591 (delist required by Securities Exchange Commission).

[Insert Table A2 about Here]

We use this alternative definition of involuntary death (CRSP delisting codes 400-490, 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 and 591) to replicate Table 1 and Figures 1 and 2. The results are presented in Table A2 and Figures A3 and A4, respectively. We observe that the results again are similar to those in Table 1, except for the last regression specification. Figures A3 and A4 show similar patterns as those in Figures 1 and 2.

[Insert Figure A3 about Here]

[Insert Figure A4 about Here]

Tables A1 and A2, and Figures A1 through A4 indicate that our results are robust to alternative definitions of firm's involuntary death.

**II. Raw Mortality Table**

A raw mortality table (also known as a life table or actuarial table) is a table that shows, for each age, the number of deaths in a cohort of objects of the same age. It essentially tabulates the incidence of death by taking into account the fact that a subject has survived thus far.

Table A3 provides a snapshot of the raw mortality table for U.S. firms that went public between 1985 and 2006. There are three entries in each cell of the matrix given in Table A3. For cells along the main diagonal, the upper entry is the number of new firms that go public, and thus enter the CRSP tape, in that year. For cells above the main diagonal, the upper entry is the number of firms of a given cohort that survive until the beginning of that calendar year. For example, 528 firms appeared on the CRSP tape (went public) in calendar year 1985. Of these 528 firms, 523 survived till the beginning of calendar year 1986.

The next two entries, located below the number of surviving firms, are the numbers of voluntary and involuntary deaths experienced by the cohort members during a given year, respectively. For instance, among the 1985 cohort firms, five deaths (one voluntary and four involuntary) took place in 1985, which reduced the cohort size from 528 firms in 1985 to 523 firms in 1986.

[Insert Table A3 about Here]

The age-specific mortality rates (ASMRs) for U.S. public firms described in the main text are constructed based on the raw data shown in Table A3.

**III. The Inverted U-Shaped ASMRs in Various Sub-Periods**

Our finding that the ASMRs of U.S. public firms exhibit an inverted U shape suggests a high mortality rate in a firm's early years, and that these early years are crucial to firm's post-IPO survival. To ensure that this inverted U shape is not driven by firms that went public in certain years, we check the ASMRs for firms going public in various sub-periods.

Table A4 reports the average ASMRs for firms in the CRSP universe "born" during the periods of 1926–2006, 1975–2006, 1985–2006, 1995–2006, and 2000–2006, respectively. For the first three subsample periods, we report the average ASMRs between 1985 and 2006. For the last two subsample periods, we report the average ASMRs between 1995 and 2006, and between 2000 and 2006, respectively. Table A4 reveals that the observed inverted U shape of ASMRs documented in Figure 1 is not driven by a particular time period. Regardless of the period under consideration, ASMRs increase initially, peak at the early years of firms' public life, and then decrease as firms grow older.

[Insert Table A4 about Here]

**IV. Nonlinear Effect of Firm Age**

Since mortality is associated with how long a firm has survived, we control for firm age after its public birth ("Age") and the length of its existence prior to the IPO ("Incubation Time")

in all of our tests through linear and log-linear specifications. Nevertheless, Figures 1 and 2 suggest that mortality may not be linear in age. To check the robustness of our main results, we include a polynomial for age (up to $(Age)^4$) and re-estimate our models in Table 1. Table A5 shows that the presence of financial intermediaries continues to be significantly related to firm mortality.

[Insert Table A5 about Here]

It is also possible that mortality is linked differently to firms of different ages and that controlling for age in our pooled logit regression does not fully take this into account. In another robustness test, we re-estimate Table 1 by including age fixed effects in addition to year, industry, and exchange fixed effects. Although this reduces the degrees of freedom for our statistical analyses, the results remain similar. For example, under this alternative approach, the coefficient of "VC-Backed" is -0.147 in model (7) of Table 1 and statistically significant at 5%, whereas the coefficient of "UW Reputation" is -0.099 in model (7) and significant at 1%.

Lastly, to take into account the possibility that the relationship between mortality and how long the firm has existed as a private entity may not be log-linear, we also construct a dummy variable for "Incubation Time" (equal to one if the difference between the founding year of a firm and the year of its IPO is above the sample median and zero otherwise) instead of log transformation. Our results (untabulated) are robust to this specification.

**V. Effect of Financial Intermediaries during Booms and Busts**

Wang, Winton, and Yu (2010) show that monitoring by financial intermediaries is less effective during booms than during busts. The authors focus on the effectiveness of an individual channel—monitoring—through which financial intermediaries affect an IPO firm's governance. By contrast, we evaluate the aggregate effect of financial intermediaries in the context of firm mortality. Nevertheless, to see whether our results differ between firms going public during different stages of the business cycle, we interact the proxies for financial intermediaries with the Chicago Fed National Activity Index (CFNAI), which is an *ex ante* measure of the probability of economic peaks and troughs. We then include the interaction terms as well as "CFNAI" in our pooled logit regression and rerun all the specifications in Table 1. Table A6 reports the results.

[Insert Table A6 about Here]

We find that "CFNAI", the variable measuring business cycle conditions at the time of the firm's IPO, is not significantly linked to firm mortality. In addition, almost all of its interactions with various proxies for VC or underwriter reputation are insignificant. On the other hand, the proxies for financial intermediaries continue to be significantly related to firm mortality. We obtain similar results using the National Bureau of Economic Research (NBER)'s *ex post* business cycle dating (not tabulated). These findings suggest that, while an individual function performed by financial intermediaries may depend on business conditions, the overall effect of financial intermediaries on reducing mortality rate does not depend on the stage of the business cycle during which the firm goes public.

As another robustness check, we look at IPO market cycles (Lowry and Schwert (2002)) instead of business cycles, and examine whether our results differ between firms going public during hot and cold IPO markets. Instead of "CFNAI", we re-estimate Table A6 by including the number of IPOs in the month when a firm goes public and its interaction with financial intermediary variables. The results (not tabulated) are similar: Firms backed by VCs and/or taken public by high-reputation underwriters have lower mortality rates regardless of whether they go public during hot or cold IPO markets.

**VI. Effect of Underwriters in Different Sub-periods**

We track the mortality rate of U.S. publicly traded companies between 1985 and 2006, overlapping with the dot-com bubble burst and crash, a period that witnessed a large number of firms going public and subsequently failing. Researchers have documented that the relation between underwriter reputation and IPO underpricing reverses in the 1990s (e.g., Beatty and Welch 1996). While our study concentrates on post-IPO mortality rather than underpricing, we check the robustness of our results regarding underwriters for the period of bubble and crash.

We divide the sample into a "normal period" (1985-1995) and a "bubble and crash period" (1996-2006), and re-estimate our models in Table 1 for each period. Table A7 presents the results. The effect of underwriters on the mortality rate is similar during both sub-periods. These results indicate that while the relation between underwriter reputation and IPO underpricing may have reversed, the effect of underwriter quality on IPO firm mortality remains stable over time.

[Insert Table A7 about Here]

## VII. Alternative Sample Restrictions and Variable Definitions

In our definition of mortality, we treat a firm emerging from bankruptcy or a firm that is publicly traded again after being acquired through a leveraged buyout as the public birth of a new company. This is because under Chapter 11 or a leveraged buyout, firms usually go through various restructuring processes for their business. It is difficult to argue that they are the same firms that existed prior to the bankruptcy or buyout. A total of 2,195 firm–year observations were previous buyouts. Removing these firms does not alter our findings.

In another robustness check, we exclude IPOs with offer prices below $5 from our sample, and re-estimate Table 1. Our results remain unchanged. This suggests that our findings are not confined to economically less important low-value IPOs.

In our main analysis we measure size using sales instead of market capitalization. This helps to mitigate the correlation between our size proxy and the market-to-book ratio. Our findings are similar when using firm's total assets as an alternative proxy for size. We compute "Leverage" as the long-term debt of the firm divided by total assets. To account for the possible inability by some firms to borrow long-term debt, we also use total debt over assets as an alternative proxy. Our findings do not change.

## VIII. Cox Proportional Hazard Model

Our main econometric analysis in Table 1 adopts the framework of a discrete time hazard model because it is computationally more efficient than the Cox proportional hazard model (Glennon and Nigro (2005)). To this end, we effectively estimate pooled logit regressions to establish the association between the probability of involuntary death and the quality of intermediaries interacting with a firm around its IPO.

Alternatively, we repeat our main analysis employing the Cox proportional hazard model, which can be estimated independently of the underlying baseline hazard function. We follow the same specifications as those in Table 1 but exclude the age variable, because it is perfectly collinear in time. Our results are robust to this alternative estimation technique: Firms that are backed by VCs and/or taken public by more reputable underwriters survive longer.

**IX. Alternative Clustering of Standard Errors**

To take into account that observations from the same firm are not independent over time, we cluster the standard errors at the firm level in our main analysis. In two separate robustness checks, we re-estimate our results using a repeated-measures logistic regression framework, as well as using two-dimension clustering to control for autocorrelation and cross-correlation of the residuals (e.g., Petersen (2009), Thompson (2011)).[2] In the latter estimation we exclude the year dummies from our pooled logit model.

[2] We thank Mitchell Petersen for providing the estimation code on his website.

Lastly, we re-estimate our models but instead of clustering the standard errors at the firm level, we follow Shumway (2001) and divide the test statistics by the average number of firm-years per firm (around 6.5 firm-years). Neither of these variations changes our conclusion that firms backed by VCs and/or taken public by more reputable underwriters survive longer.

**Figure A1: Replicating Figure 1 Using CRSP Delisting Codes 400-490 and 535-591**

The figure below shows the age-specific mortality rates (ASMRs) during the period 1985–2006 for U.S. public firms appearing in the CRSP tape between 1926 and 2006. The ASMRs are based on involuntary death. A firm incurs an involuntary death if its CRSP delisting code falls between 400 and 490, or between 535 and 591.

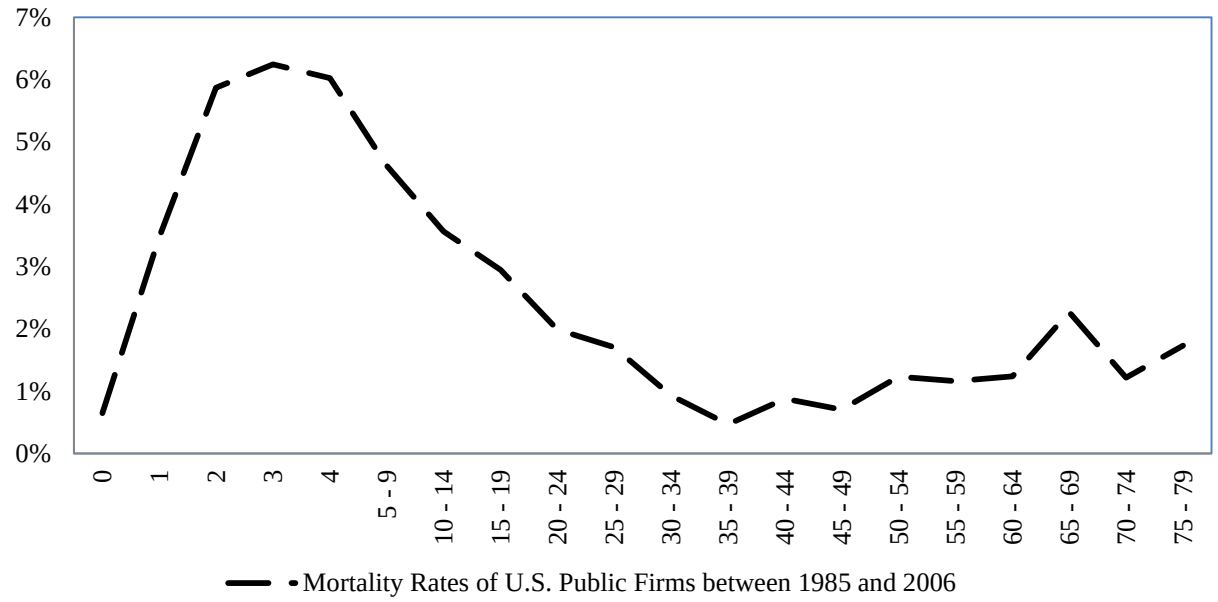
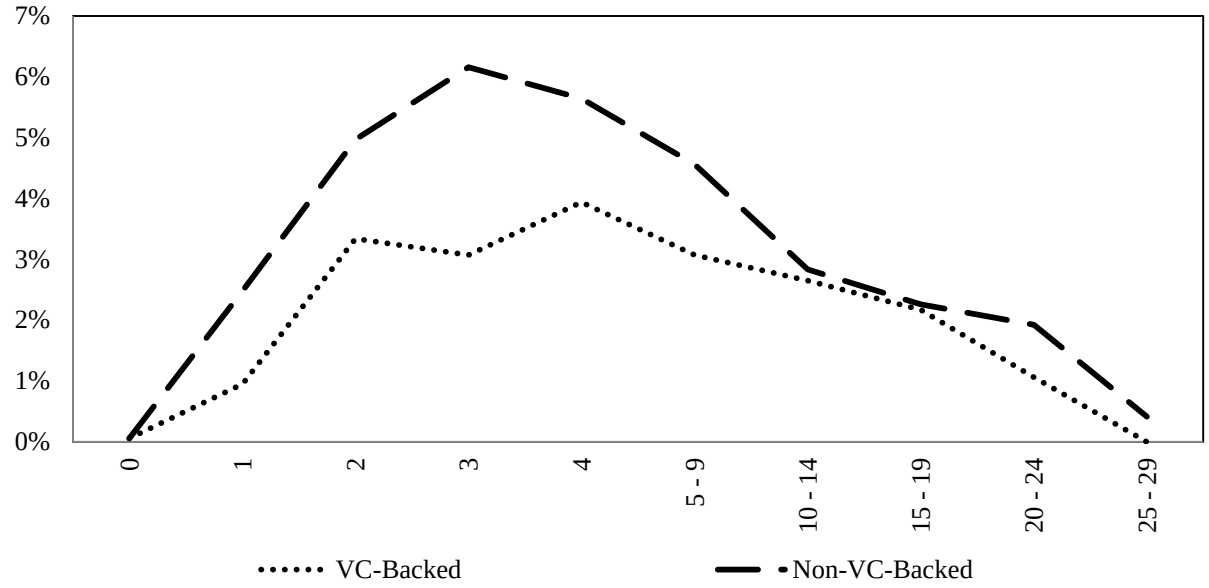


**Figure A2: Replicating Figure 2 Using CRSP Delisting Codes 400-490 and 535-591**

The figures below show the ASMRs during the period 1985–2006 for U.S. public firms appearing in the CRSP tape between 1975 and 2006. The ASMRs are based on involuntary death. A firm incurs involuntary death if its CRSP delisting code falls between 400 and 490, or between 535 and 591. Graph A compares the ASMRs between firms that are backed by VCs at the time of IPO (dotted line) and those that are not (dashed line). Graph B compares the ASMRs between firms taken public by high-reputation (dotted line) and low-reputation (dashed line) underwriters.

**Figure A2 continued.**

**Graph A**




**Graph B**

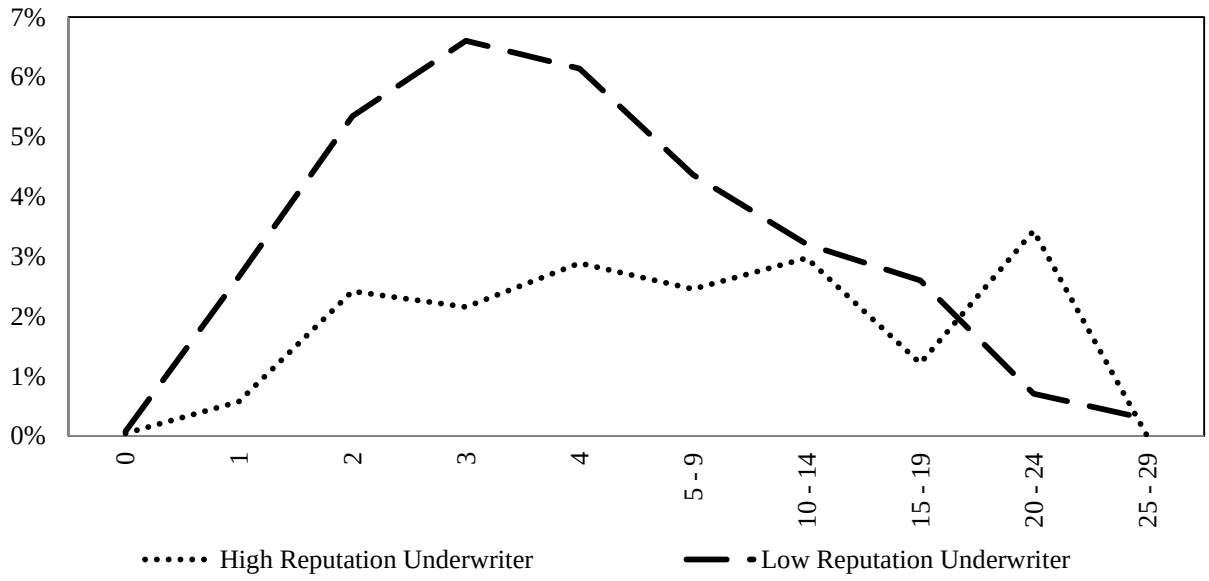


**Figure A3: Replicating Figure 1 Using CRSP Delisting Codes 400-490, 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 and 591**

The figure below shows the ASMRs during the period 1985–2006 for U.S. public firms appearing in the CRSP tape between 1926 and 2006. The ASMRs are based on involuntary death. A firm incurs involuntary death if its CRSP delisting code falls between 400 and 490, or belongs to 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 or 591.

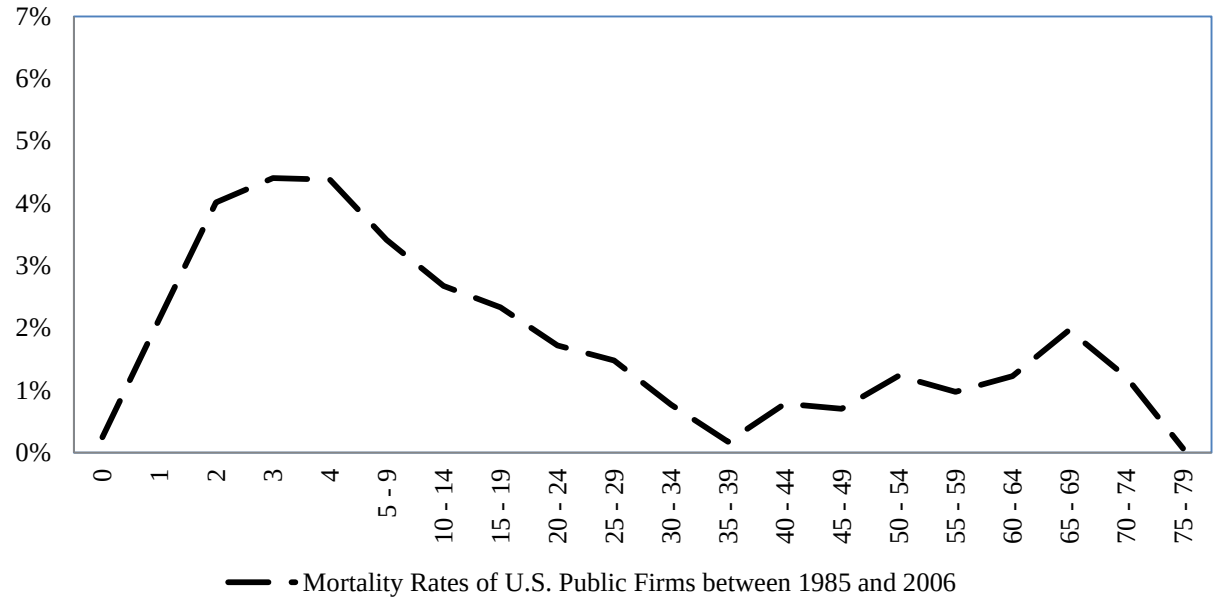
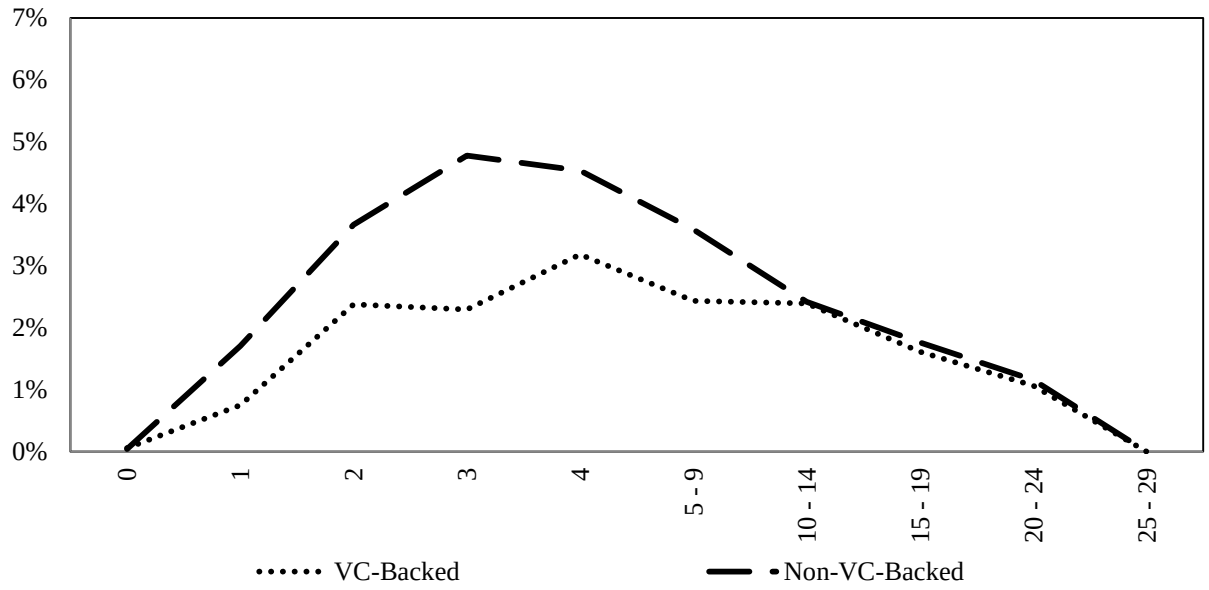


**Figure A4: Replicating Figure 2 Using CRSP Delisting Codes 400-490, 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587, and 591**

The figures below show the ASMRs during the period 1985–2006 for U.S. public firms appearing in the CRSP tape between 1975 and 2006. The ASMRs are based on involuntary death. A firm incurs involuntary death if its CRSP delisting code falls between 400 and 490, or belongs to 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 or 591. Graph A compares the ASMRs between firms that are backed by VCs at the time of IPO (dotted line) and those that are not (dashed line). Graph B compares the ASMRs between firms taken public by high-reputation (dotted line) and low-reputation (dashed line) underwriters.

**Figure A4 continued.**

**Graph A**




**Graph B**

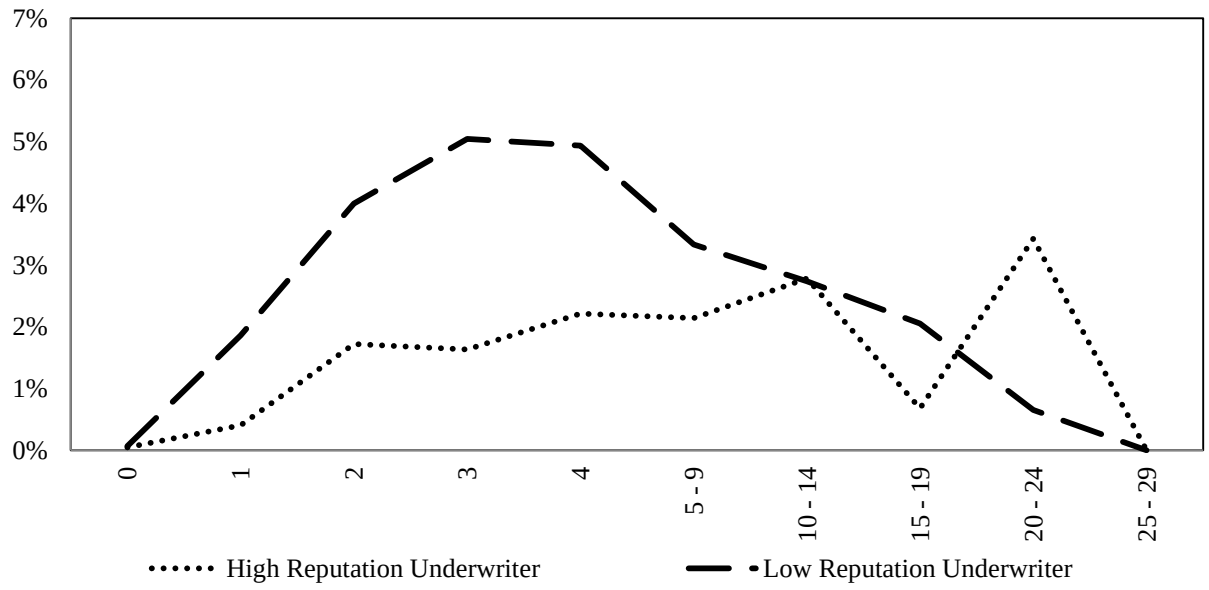


**Table A1: Replicating Table 1 Using CRSP Delisting Codes 400-490 and 535-591**

This table reports the parameter estimates for the pooled logit models predicting firms' involuntary death, where an involuntary death takes place if a firm's CRSP delisting code falls between 400 and 490, or between 535 and 591. The estimation uses all firm–year observations in the period 1985–2006 for firms that went public between 1985 and 2006. The unit of analysis is firm–year pair. The dependent variable is a dummy variable equal to one if a firm experiences involuntary death in a given year, and zero otherwise. The variable "VC-Backed" is a dummy equal to one if a firm is backed by a venture capitalist, and zero otherwise; "VC Reputation" is the fraction of total proceeds of IPOs that a VC firm has invested in since 1980; "VC Reputation" equals zero if an IPO firm is not backed by VC, and the average value of the reputations of all involved VCs otherwise; "UW Reputation" is the rank of the lead underwriter of the IPO or, for IPOs with multiple lead underwriters, the average value of the ranks of all lead underwriters; "High Reputation UW" is an indicator variable that takes the value of one if the IPO is conducted by an underwriter with a reputation above the sample median; "Incubation Time" is defined as the natural logarithm of one plus the number of years between the founding year of the firm and the IPO year; "Size" is the natural logarithm of the firm's sales; "Market to Book" is the market value of the firm's assets divided by their book value; "Z-score" is Sufi's (2009) modified version of Altman's (1968) Z-score; "Leverage" is the ratio of the firm's long-term debt divided by the book value of the firm's total assets; and "Age" is the number of years

between the current calendar year and the year of the firm's IPO. All variables constructed from accounting data are lagged by one year in the estimation. A detailed description of variable construction is provided in the Appendix of the main paper. All regression models include year fixed effects, exchange fixed effects, and industry fixed effects, where industry classification is based on the Fama–French 12 industries. Standard errors, clustered at the firm level, are in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table A1 continued.**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| VC-Backed | -0.314** | | | | -0.264** | | -0.144* | -0.128 |
| | (0.066) | | | | (0.068) | | (0.071) | (0.079) |
| VC Reputation | | -0.108** | | | | -0.036 | | -0.013 |
| | | (0.029) | | | | (0.027) | | (0.029) |
| High Reputation UW | | | -0.386** | | -0.329** | | | -0.038 |
| | | | (0.078) | | (0.079) | | | (0.091) |
| UW Reputation | | | | -0.114** | | -0.108** | -0.105** | -0.100** |
| | | | | (0.013) | | (0.013) | (0.014) | (0.016) |
| Incubation Time | -0.148** | -0.155** | -0.151** | -0.121** | -0.148** | -0.123** | -0.122** | -0.123** |
| | (0.031) | (0.031) | (0.031) | (0.032) | (0.031) | (0.032) | (0.032) | (0.032) |
| Size | -0.307** | -0.310** | -0.303** | -0.261** | -0.297** | -0.261** | -0.261** | -0.260** |
| | (0.020) | (0.020) | (0.021) | (0.022) | (0.021) | (0.022) | (0.022) | (0.022) |
| Age | 0.020* | 0.026** | 0.022* | 0.015+ | 0.018* | 0.016+ | 0.014 | 0.014 |
| | (0.008) | (0.008) | (0.008) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) |
| M/B-ratio | -0.274** | -0.274** | -0.316** | -0.319** | -0.314** | -0.318** | -0.318** | -0.317** |
| | (0.046) | (0.045) | (0.038) | (0.039) | (0.038) | (0.039) | (0.039) | (0.039) |
| Leverage | 1.037** | 1.034** | 1.106** | 1.079** | 1.088** | 1.073** | 1.072** | 1.072** |
| | (0.135) | (0.134) | (0.137) | (0.141) | (0.139) | (0.141) | (0.141) | (0.141) |
| Z-score | -0.073** | -0.072** | -0.077** | -0.078** | -0.078** | -0.078** | -0.079** | -0.079** |
| | (0.012) | (0.012) | (0.012) | (0.013) | (0.012) | (0.013) | (0.013) | (0.013) |
| Intercept | -2.585** | -2.588** | -2.380** | -2.024** | -2.377** | -2.039** | -2.048** | -2.061** |
| | (0.688) | (0.689) | (0.690) | (0.702) | (0.691) | (0.702) | (0.702) | (0.702) |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Observations | 37,863 | 37,863 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 |
| Pseudo-$R^2$ | 0.158 | 0.157 | 0.164 | 0.169 | 0.166 | 0.169 | 0.170 | 0.170 |

**Table A2: Replicating Table 1 Using CRSP Delisting Codes 400-490 and 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 and 591**

This table reports the parameter estimates for the pooled logit models predicting firms' involuntary death, where an involuntary death takes place if a firm's CRSP delisting code falls between 400 and 490, or is 551, 552, 560, 561, 574, 581, 582, 583, 584, 585, 587 or 591. The unit of analysis is firm–year pair. The estimation uses all firm–year observations in the period 1985–2006 for firms that went public between 1985 and 2006. The dependent variable is a dummy variable equal to one if a firm experiences involuntary death in a given year, and zero otherwise. The variable "VC-Backed" is a dummy equal to one if a firm is backed by a venture capitalist, and zero otherwise; "VC Reputation" is the fraction of total proceeds of IPOs that a VC firm has invested in since 1980; "VC Reputation" equals zero if an IPO firm is not backed by VC, and the average value of the reputations of all involved VCs otherwise; "UW Reputation" is the rank of the lead underwriter of the IPO or, for IPOs with multiple lead underwriters, the average value of the ranks of all lead underwriters; "High Reputation UW" is an indicator variable that takes the value of one if the IPO is conducted by an underwriter with a reputation above the sample median; "Incubation Time" is defined as the natural logarithm of one plus the number of years between the founding year of the firm and the IPO year; "Size" is the natural logarithm of the firm's sales; "Market to Book" is the market value of the firm's assets divided by their book value; "Z-score" is Sufi's (2009) modified version of Altman's (1968) Z-score;

"Leverage" is the ratio of the firm's long-term debt divided by the book value of the firm's total assets; and "Age" is the number of years between the current calendar year and the year of the firm's IPO. All variables constructed from accounting data are lagged by one year in the estimation. A detailed description of variable construction is provided in the Appendix of the main paper. All the regression models include year fixed effects, exchange fixed effects, and industry fixed effects, where industry classification is based on the Fama–French 12 industries. Standard errors, clustered at the firm level, are in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table A2 continued.**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| VC-Backed | -0.260** | | | | -0.215** | | -0.094 | -0.074 |
| | (0.071) | | | | (0.073) | | (0.076) | (0.085) |
| VC Reputation | | -0.101** | | | | -0.031 | | -0.017 |
| | | (0.031) | | | | (0.029) | | (0.032) |
| High Reputation UW | | | -0.387** | | -0.341** | | | -0.054 |
| | | | (0.085) | | (0.086) | | | (0.100) |
| UW Reputation | | | | -0.110** | | -0.106** | -0.104** | -0.099** |
| | | | | (0.014) | | (0.014) | (0.015) | (0.017) |
| Incubation Time | -0.142** | -0.148** | -0.143** | -0.115** | -0.141** | -0.116** | -0.115** | -0.116** |
| | (0.033) | (0.033) | (0.034) | (0.035) | (0.034) | (0.035) | (0.035) | (0.035) |
| Size | -0.320** | -0.321** | -0.315** | -0.276** | -0.310** | -0.276** | -0.276** | -0.276** |
| | (0.021) | (0.021) | (0.022) | (0.023) | (0.022) | (0.023) | (0.023) | (0.023) |
| Age | 0.020* | 0.024** | 0.021* | 0.015 | 0.018+ | 0.015+ | 0.014 | 0.015 |
| | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) |
| M/B-ratio | -0.307** | -0.307** | -0.312** | -0.314** | -0.310** | -0.314** | -0.314** | -0.313** |
| | (0.041) | (0.041) | (0.042) | (0.043) | (0.043) | (0.043) | (0.043) | (0.043) |
| Leverage | 1.100** | 1.094** | 1.151** | 1.127** | 1.137** | 1.122** | 1.123** | 1.123** |
| | (0.142) | (0.142) | (0.146) | (0.149) | (0.147) | (0.149) | (0.15) | (0.149) |
| Z-score | -0.072** | -0.072** | -0.073** | -0.074** | -0.073** | -0.074** | -0.074** | -0.074** |
| | (0.012) | (0.012) | (0.012) | (0.013) | (0.012) | (0.013) | (0.013) | (0.013) |
| Intercept | -3.691** | -3.698** | -3.582** | -3.245** | -3.579** | -3.259** | -3.261** | -3.279** |
| | (1.067) | (1.069) | (1.070) | (1.076) | (1.069) | (1.076) | (1.075) | (1.075) |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No of Observations | 37,863 | 37,863 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 |
| Pseudo-$R^2$ | 0.158 | 0.158 | 0.161 | 0.165 | 0.162 | 0.165 | 0.165 | 0.166 |

## Table A3: Raw Mortality Table for U.S. Public Firms, 1985–2006

This table presents the raw data used to construct the ASMRs for U.S. public firms in the period 1985–2006. Each cell (*i*, *j*) in the matrix contains three elements: (1) the top element is the *j*th year's size of the IPO cohort of year *i*, which is the number of firms "born" publicly in year *i* that still exist at the beginning of year *j*; (2) the bottom left element is the number of voluntary deaths (CRSP delisting codes not in 100–200 or 400–610) in year *j* in the IPO cohort of year *i*; and (3) the bottom right element is the number of involuntary deaths (CRSP delisting codes 400–591) in year *j* in the IPO cohort of year *i*.

| | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 00 | 01 | 02 | 03 | 04 | 05 | 06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85 | 528 | 523 | 474 | 427 | 375 | 337 | 306 | 281 | 255 | 235 | 216 | 197 | 183 | 163 | 140 | 122 | 111 | 101 | 93 | 84 | 73 | 68 |
| | 1,4 | 16,33 | 19,28 | 21,31 | 15,23 | 9,22 | 6,19 | 6,20 | 11,9 | 11,8 | 11,8 | 13,1 | 12,8 | 15,8 | 12,6 | 7,4 | 5,5 | 1,7 | 4,5 | 4,7 | 3,2 | 6,1 |
| 86 | | 921 | 914 | 867 | 767 | 697 | 623 | 567 | 512 | 477 | 433 | 386 | 350 | 307 | 272 | 246 | 219 | 193 | 174 | 162 | 150 | 142 |
| | | 1,6 | 12,35 | 41,59 | 26,44 | 31,43 | 10,46 | 21,34 | 20,15 | 28,16 | 34,13 | 27,9 | 32,11 | 26,9 | 17,9 | 19,8 | 12,14 | 10,9 | 7,5 | 10,2 | 4,4 | 9,2 |
| 87 | | | 773 | 764 | 691 | 610 | 538 | 492 | 432 | 395 | 360 | 330 | 300 | 266 | 231 | 199 | 182 | 167 | 157 | 146 | 131 | 118 |
| | | | 0,9 | 27,46 | 35,46 | 18,54 | 5,41 | 21,39 | 19,18 | 24,11 | 19,11 | 22,8 | 24,10 | 24,11 | 16,16 | 7,10 | 10,5 | 4,6 | 3,8 | 7,8 | 4,9 | 7,4 |
| 88 | | | | 399 | 389 | 358 | 320 | 281 | 246 | 228 | 203 | 186 | 171 | 155 | 134 | 112 | 102 | 91 | 81 | 77 | 71 | 65 |
| | | | | 1,9 | 1,30 | 7,31 | 11,28 | 10,25 | 10,8 | 12,13 | 8,9 | 12,3 | 12,4 | 13,8 | 12,10 | 3,7 | 6,5 | 7,3 | 1,3 | 3,3 | 3,3 | 5,1 |
| 89 | | | | | 362 | 354 | 332 | 294 | 244 | 224 | 203 | 183 | 168 | 148 | 121 | 105 | 89 | 78 | 71 | 66 | 62 | 61 |
| | | | | | 1,7 | 5,17 | 9,29 | 9,41 | 10,10 | 11,10 | 8,12 | 10,5 | 14,6 | 10,17 | 11,5 | 9,7 | 4,7 | 4,3 | 0,5 | 3,1 | 0,1 | 4,0 |
| 90 | | | | | | 364 | 360 | 335 | 295 | 272 | 240 | 214 | 198 | 182 | 166 | 140 | 122 | 104 | 96 | 93 | 86 | 74 |
| | | | | | | 0,4 | 4,21 | 9,31 | 13,10 | 14,18 | 11,15 | 12,4 | 9,7 | 10,6 | 16,10 | 12,6 | 8,10 | 4,4 | 1,2 | 7,0 | 7,5 | 5,1 |
| 91 | | | | | | | 491 | 487 | 471 | 447 | 405 | 363 | 321 | 288 | 249 | 220 | 200 | 184 | 169 | 147 | 136 | 129 |
| | | | | | | | 1,3 | 4,12 | 8,16 | 25,17 | 23,19 | 26,16 | 22,11 | 21,18 | 16,13 | 14,6 | 4,12 | 7,8 | 8,14 | 7,4 | 6,1 | 7,4 |
| 92 | | | | | | | | 638 | 636 | 622 | 577 | 514 | 464 | 403 | 350 | 303 | 260 | 227 | 207 | 195 | 183 | 170 |
| | | | | | | | | 1,1 | 7,7 | 34,11 | 37,26 | 28,22 | 40,21 | 37,16 | 27,20 | 23,20 | 17,16 | 10,10 | 6,6 | 6,6 | 7,6 | 7,2 |
| 93 | | | | | | | | | 868 | 865 | 841 | 751 | 671 | 602 | 514 | 441 | 377 | 332 | 293 | 263 | 239 | 214 |
| | | | | | | | | | 1,2 | 14,10 | 49,41 | 56,24 | 46,23 | 47,41 | 46,27 | 38,26 | 27,18 | 18,21 | 11,19 | 17,7 | 14,11 | 8,7 |
| 94 | | | | | | | | | | 732 | 729 | 691 | 628 | 560 | 452 | 380 | 318 | 274 | 248 | 219 | 197 | 180 |
| | | | | | | | | | | 1,2 | 18,20 | 44,19 | 39,29 | 61,47 | 49,23 | 35,27 | 21,23 | 10,16 | 15,14 | 16,6 | 9,8 | 12,2 |
| 95 | | | | | | | | | | | 766 | 762 | 727 | 629 | 534 | 451 | 383 | 321 | 291 | 260 | 233 | 209 |
| | | | | | | | | | | | 1,3 | 29,6 | 57,41 | 47,48 | 54,29 | 52,16 | 21,41 | 14,16 | 14,17 | 14,13 | 12,12 | 12,8 |
| 96 | | | | | | | | | | | | 1000 | 995 | 940 | 794 | 648 | 538 | 441 | 385 | 341 | 315 | 284 |
| | | | | | | | | | | | | 2,3 | 37,18 | 77,69 | 82,64 | 63,47 | 51,46 | 24,32 | 15,29 | 17,9 | 21,10 | 20,14 |
| 97 | | | | | | | | | | | | | 700 | 692 | 641 | 543 | 452 | 363 | 316 | 278 | 252 | 233 |
| | | | | | | | | | | | | | 4,4 | 30,21 | 49,49 | 57,34 | 43,46 | 23,24 | 19,19 | 17,9 | 13,6 | 18,7 |
| 98 | | | | | | | | | | | | | | 506 | 502 | 459 | 397 | 330 | 289 | 246 | 221 | 201 |
| | | | | | | | | | | | | | | 3,1 | 26,17 | 41,21 | 28,39 | 13,28 | 22,21 | 19,6 | 11,9 | 17,4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 99 | | 621 | 616 | 553 | 433 | 373 | 324 | 292 | 259 |
| | | 2,3 | 47,16 | 67,53 | 24,36 | 29,20 | 22,10 | 22,11 | 17,8 |
| 00 | | | 539 | 525 | 461 | 392 | 325 | 298 | 263 |
| | | | 8,6 | 25,39 | 29,40 | 36,31 | 21,6 | 20,15 | 15,5 |
| 01 | | | | 167 | 167 | 155 | 144 | 132 | 118 |
| | | | | 0,0 | 5,7 | 7,4 | 9,3 | 11,3 | 3,2 |
| 02 | | | | | 154 | 152 | 144 | 134 | 119 |
| | | | | | 1,1 | 7,1 | 8,2 | 10,5 | 10,3 |
| 03 | | | | | | 166 | 165 | 155 | 144 |
| | | | | | | 1,0 | 7,3 | 7,4 | 8,3 |
| 04 | | | | | | | 275 | 273 | 271 |
| | | | | | | | 2,0 | 2,0 | 15,8 |
| 05 | | | | | | | | 280 | 277 |
| | | | | | | | | 1,2 | 7,4 |
| 06 | | | | | | | | | 277 |
| | | | | | | | | | 0,3 |

**Table A4: ASMRs for Firms Going Public in Different Sample Periods**

This table reports the average ASMRs for U.S. firms going public during various sample periods.

| Age Cohort | Firms going public in | | | | |
|---|---|---|---|---|---|
| | 1926–2006 | 1975–2006 | 1985–2006 | 1995–2006 | 2000–2006 |
| 0 | 0.67% | 0.67% | 0.67% | 0.46% | 0.51% |
| 1 | 3.57% | 3.57% | 3.29% | 2.47% | 2.59% |
| 2 | 5.92% | 5.92% | 5.59% | 5.30% | 3.64% |
| 3 | 6.46% | 6.46% | 6.31% | 6.21% | 3.95% |
| 4 | 6.11% | 6.11% | 5.76% | 5.42% | 2.21% |
| 5–9 | 4.75% | 4.75% | 4.33% | 4.03% | |
| 10–14 | 3.72% | 3.81% | 3.73% | | |
| 15–19 | 3.09% | 3.44% | 3.67% | | |
| 20–24 | 2.09% | 2.58% | | | |
| 25–29 | 1.80% | 2.41% | | | |
| 30–34 | 1.09% | | | | |
| 35–39 | 0.47% | | | | |
| 40–44 | 0.90% | | | | |
| 45–49 | 0.71% | | | | |
| 50–54 | 1.24% | | | | |
| 55–59 | 1.16% | | | | |
| 60–64 | 1.24% | | | | |
| 65–69 | 2.27% | | | | |
| 70–74 | 1.22% | | | | |
| 75–79 | 1.79% | | | | |

**Table A5: Nonlinearity of Age and Determinants of the Mortality Rate of U.S. Public Firms**

This table shows the parameter estimates for pooled logit models predicting a firm's involuntary death (CRSP delisting codes 400–591), controlling for nonlinear impact of age. The unit of analysis is firm–year pair. The estimation uses all firm–year observations in the period 1985–2006 for firms that went public in or after 1985. The dependent variable takes the value of one if a firm experiences involuntary death in a given year, and zero otherwise. "VC-Backed" is a dummy variable that takes the value of one if a firm is backed by a VC, and zero otherwise. "VC Reputation" is the fraction of total proceeds of IPOs that a VC has invested in since 1980, and is zero for non-VC-backed IPOs. For IPOs backed by multiple VCs, the variable equals the average value of the reputations of all involved VCs. "UW Reputation" is the rank of the IPO's lead underwriter. For IPOs with multiple lead underwriters, this variable is the average rank of all lead underwriters. In addition, "High Reputation UW" is a dummy variable that takes the value of one if the IPO is conducted by an underwriter with a reputation above the sample median. Firm-specific control variables include: "Incubation Time", defined as the natural logarithm of one plus the number of years between the founding year of the firm and the IPO year; "Size", defined as the natural logarithm of the firm's sales, "Market to Book", defined as the market value of the firm's assets divided by their book value; "Z-score", defined as Sufi's (2009) modified version of Altman's (1968) Z-score; "Leverage", defined as the ratio of the firm's long-term debt divided by the book value of the firm's total assets; and "Age", defined as the number

of years between the current calendar year and the year of the firm's IPO. Industry classification is based on the Fama–French 12 industries. Standard errors, clustered at the firm level, are in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table A5 continued.**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| VC-Backed | -0.308** | | | | -0.264** | | -0.146* | -0.137+ |
| | (0.065) | | | | (0.067) | | (0.070) | (0.078) |
| VC Reputation | | -0.100** | | | | -0.031 | | -0.007 |
| | | (0.027) | | | | (0.026) | | (0.028) |
| High Reputation UW | | | -0.356** | | -0.299** | | | -0.017 |
| | | | (0.077) | | (0.078) | | | (0.090) |
| UW Reputation | | | | -0.110** | | -0.105** | -0.101** | -0.099** |
| | | | | (0.013) | | (0.013) | (0.014) | (0.015) |
| Age | 0.647** | 0.655** | 0.641** | 0.633** | 0.631** | 0.632** | 0.628** | 0.627** |
| | (0.122) | (0.122) | (0.123) | (0.122) | (0.123) | (0.122) | (0.123) | (0.123) |
| $Age^2$ | -0.115** | -0.115** | -0.115** | -0.116** | -0.114** | -0.115** | -0.115** | -0.115** |
| | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) |
| $Age^3$ | 0.008** | 0.008** | 0.008** | 0.008** | 0.008** | 0.008** | 0.008** | 0.008** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| $Age^4$ | 0.000** | 0.000** | 0.000** | 0.000** | 0.000** | 0.000** | 0.000** | 0.000** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Intercept | -2.959** | -3.078** | -2.808** | -2.419** | -2.726** | -2.441** | -2.405** | -2.416** |
| | (0.452) | (0.451) | (0.451) | (0.468) | (0.456) | (0.469) | (0.469) | (0.470) |
| Firm-Specific Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Observations | 37,863 | 37,863 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 |
| Pseudo $R^2$ | 0.159 | 0.158 | 0.165 | 0.170 | 0.166 | 0.170 | 0.170 | 0.170 |

**Table A6: Business Conditions and the Effect of Financial Intermediaries on the Mortality Rate of U.S. Public Firms**

This table reports the coefficient estimates for the pooled logit models predicting a firm's involuntary death (CRSP delisting codes 400–591). The unit of analysis is firm–year pair. The dependent variable is a dummy equal to one if a firm experiences involuntary death in a given year, and zero otherwise. "CFNAI" is the Chicago Fed National Activity Index. "VC-Backed" is a dummy variable equal to one if a firm is backed by a VC; "VC Reputation" equals zero if an IPO firm is not backed by VC, and is the average value of the reputations of all involved VCs otherwise; "UW Reputation" is the rank of the lead underwriter of the IPO or, for IPOs with multiple lead underwriters, the average value of the ranks of all lead underwriters; "High Reputation UW" is an indicator variable that takes the value of one if the IPO is conducted by an underwriter with a reputation above the sample median, and zero otherwise. Firm-specific control variables include: "Incubation Time", defined as the natural logarithm of one plus the number of years between the founding year of the firm and the IPO year; "Size", defined as the natural logarithm of the firm's sales, "Market to Book", defined as the market value of the firm's assets divided by their book value; "Z-score", defined as Sufi's (2009) modified version of Altman's (1968) Z-score; "Leverage", defined as the ratio of the firm's long-term debt divided by the book value of the firm's total assets; and "Age", defined as the number of years between the current calendar year and the year of the firm's IPO. All variables constructed from

accounting data are lagged by one year in the estimation. A detailed description of variable construction is provided in the Appendix of the main paper. Control variables are included in the regressions but not tabulated. Industry classification is based on the Fama–French 12 industries. Standard errors are clustered at the firm level and reported in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table A6 continued.**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| VC-Backed | -0.344** | | | | -0.297** | | -0.193** | -0.183* |
| | (0.068) | | | | (0.070) | | (0.075) | (0.082) |
| VC Reputation | | -0.107** | | | | -0.042 | | -0.011 |
| | | (0.028) | | | | (0.027) | | (0.028) |
| High Reputation UW | | | -0.384** | | -0.321** | | | -0.083 |
| | | | (0.079) | | (0.080) | | | (0.095) |
| UW Reputation | | | | -0.109** | | -0.102** | -0.095** | -0.085** |
| | | | | (0.013) | | (0.014) | (0.015) | (0.017) |
| VC-Backed × CFNAI | 0.167 | | | | 0.167 | | 0.227 | 0.190 |
| | (0.146) | | | | (0.156) | | (0.169) | (0.187) |
| VC Reputation × CFNAI | | 0.035 | | | | 0.070 | | 0.040 |
| | | (0.067) | | | | (0.068) | | (0.074) |
| High Reputation UW × CFNAI | | | 0.008 | | -0.040 | | | 0.214 |
| | | | (0.168) | | (0.177) | | | (0.222) |
| UW Reputation × CFNAI | | | | -0.021 | | -0.033 | -0.041 | -0.069+ |
| | | | | (0.027) | | (0.029) | (0.031) | (0.040) |
| CFNAI | -0.114 | -0.044 | -0.057 | 0.055 | -0.140 | 0.087 | 0.067 | 0.165 |
| | (0.094) | (0.080) | (0.084) | (0.178) | (0.099) | (0.180) | (0.179) | (0.202) |
| Firm-Specific Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No. of Observations | 37,863 | 37,863 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 | 36,473 |
| Pseudo $R^2$ | 0.156 | 0.155 | 0.162 | 0.167 | 0.164 | 0.167 | 0.168 | 0.168 |

**Table A7: Effect of Underwriters in Different Sub-Periods**

This table reports the parameter estimates for pooled logit models in columns (3) and (4) of Table 1 over two sub-sample periods, "normal period" (1985–1995) and "bubble and crash period" (1996–2006). The unit of analysis is firm–year pair. The dependent variable equals one if a firm experiences an involuntary death in a given year, and zero otherwise. "VC-Backed" is a dummy variable equal to one if a firm is backed by a VC; "VC Reputation" equals zero if an IPO firm is not backed by VC, and is the average value of the reputations of all involved VCs otherwise; "UW Reputation" is the rank of the lead underwriter of the IPO or, for IPOs with multiple lead underwriters, the average value of the ranks of all lead underwriters; "High Reputation UW" is an indicator variable that takes the value of one if the IPO is conducted by an underwriter with a reputation above the sample median, and zero otherwise. Firm-specific control variables include: "Incubation Time", defined as the natural logarithm of one plus the number of years between the founding year of the firm and the IPO year; "Size", defined as the natural logarithm of the firm's sales, "Market to Book", defined as the market value of the firm's assets divided by their book value; "Z-score", defined as Sufi's (2009) modified version of Altman's (1968) Z-score; "Leverage", defined as the ratio of the firm's long-term debt divided by the book value of the firm's total assets; and "Age", defined as the number of years between the current calendar year and the year of the firm's IPO. All variables constructed from accounting data are lagged by one year in the estimation. A detailed description of variable

construction is provided in the Appendix of the main paper. Industry classification is based on the Fama–French 12 industries. Marginal effects for the variables of interest are in square brackets. Standard errors are clustered at the firm level and reported in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table A7 continued.**

| | 1985–1995 | | 1996–2006 | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High Reputation UW | -0.407** | | -0.369** | |
| | (0.100) | | (0.124) | |
| | [-0.008] | | [-0.008] | |
| UW Reputation | | -0.112** | | -0.132** |
| | | (0.016) | | (0.024) |
| | | [-0.002] | | [-0.003] |
| Incubation Time | -0.122** | -0.084* | -0.264** | -0.263** |
| | (0.036) | (0.038) | (0.058) | (0.058) |
| Size | -0.301** | -0.262** | -0.291** | -0.244** |
| | (0.026) | (0.028) | (0.037) | (0.039) |
| Age | 0.023+ | 0.025+ | 0.107** | 0.094** |
| | (0.013) | (0.013) | (0.034) | (0.034) |
| Market to Book | -0.367** | -0.370** | -0.281** | -0.285** |
| | (0.054) | (0.054) | (0.043) | (0.044) |
| Leverage | 1.045** | 1.043** | 1.150** | 1.094** |
| | (0.183) | (0.187) | (0.207) | (0.213) |
| Z-Score | -0.097** | -0.100** | -0.060** | -0.061** |
| | (0.018) | (0.019) | (0.015) | (0.016) |
| Intercept | -2.113** | -1.856** | -2.364** | -1.717* |
| | (0.554) | (0.565) | (0.83) | (0.861) |
| Industry Dummies | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes |
| No. of Observations | 25,964 | 25,964 | 10,509 | 10,509 |
| Pseudo-$R^2$ | 0.160 | 0.165 | 0.183 | 0.190 |

## Internet Appendix B: Selection versus Treatment

Researchers have argued that VC backing and/or going-public with a reputable underwriter represents an endogenous choice made by firms and financial intermediaries. Our finding that financial intermediaries at the IPO stage are associated with lower firm mortality rates can be driven by their ability to simply pick the "right" firms to take public (selection), or by their ability to add value through involvement and interaction with the firm (treatment). In this part of the internet appendix we establish that both selection and treatment processes contribute to the effect of financial intermediaries on firm mortality. We do so by adopting two separate estimation strategies to address the selection by financial intermediaries. Once we control for the source of selection using these estimation strategies, an association between incidence of involuntary death and financial intermediaries involved with the firm at its IPO stage is more likely due to treatment. Establishing both selection and treatment effects allows us to compare their relative importance for each financial intermediary in the main text.

### I. Two-Stage Model with Heckman Correction

We first estimate a two-stage model with Heckman (1979) correction for self-selection. In the first stage, we allow each of the financial intermediaries to select firms based on their characteristics prior to the IPO. In the second stage, we predict a firm's involuntary death using the pooled logit model as in Table 1, but include a correction parameter $\lambda$ as additional

explanatory variable. Here $\lambda$ is a proxy for selection, which would be an omitted variable if ignored.

For each type of financial intermediary, we use all IPOs and estimate a first-stage cross-sectional probit model. The estimated coefficients are used to construct the selection parameter $\lambda$:

$$\lambda = D \times \frac{\varphi(\beta X)}{\Phi(\beta X)} + (1 - D) \times \frac{-\varphi(\beta X)}{1 - \Phi(\beta X)}$$

where *D* takes the value of one if the IPO firm is VC backed (is taken public by a high-reputation underwriter), and zero otherwise; $X$ is the set of factors that affect the selection by financial intermediaries; and $\varphi$ and $\Phi$ are the density and cumulative distribution functions, respectively, of the standard normal evaluated at $\beta X$, which is the linear prediction of the probability that an IPO firm is VC backed (is taken public by a high-reputation underwriter).

**A. Controlling Selection by VCs**

VC backing is not random, but likely represents the outcome of an endogenous choice by venture capitalists. Accordingly, existing literature has documented that VC-backed and non-VC-backed IPOs differ in characteristics such as size and industry, as well as over-time (e.g., Megginson and Weiss (1999), Gompers and Lerner (2000), Lee and Wahal (2004)). The non-randomness of these data allows us to construct $\lambda$ for VCs. Specifically, to predict the probability that a firm is VC backed, we follow Lee and Wahal (2004) and use "Size before Offering" (the

natural logarithm of the total assets of the firm before the offering date), "Book Value per Share" before the offering date, industry dummies, and calendar year dummies.

Table B1 presents the results from the two-stage model with Heckman correction for VCs. Panels A and B show the first-stage and second-stage estimation results, respectively. In columns (1)-(3) of Panel A, the dependent variable is the VC-backed dummy. In columns (1)-(3) of Panel B, we include the $\lambda$ computed from the first-stage as an additional explanatory variable in the second-stage estimations.

[Insert Table B1 about Here]

Column (1) in Panel B reveals that after controlling for VC selection, the VC-backing dummy remains negatively and significantly related to firms' subsequent mortality. This suggests that VCs' effect on reducing mortality goes beyond picking good firms.

We then explicitly explore whether the extent of VC involvement with the issuing firm has any effect on its mortality by augmenting the model in column (1) of Panel B with the proxies for treatment, "VC Stage" (column (2)) and "VC Number of Rounds" (column (3)). Controlling for VC selection, both the stage of investment and number of investment rounds are negative and significantly related to a firm's mortality. This indicates that more frequent and longer involvement—thus more treatment—by VCs is associated with lower involuntary death rates of the firms they fund. In addition, the presence of VC remains negative and significant.

These results suggest that the VC's provision of natal financial care is an important factor for a firm's survival, even after controlling for selection.

We also observe from column (1) in Panel B that the coefficient of the $\lambda$ term for the VC-backed dummy is significant. However, $\lambda$ becomes less significant or insignificant when either the stage at which the firm received its first VC investment (column (2)) or the number of rounds (column (3)) is included. This implies that the role of VCs' selection decreases in the presence of VCs' treatment.

Columns (4) and (5) of Table B1 explore variations of our two-stage model by directly estimating the $\lambda$ term for the two treatment variables, "VC Stage" and "VC Number of Rounds", rather than for the VC-backed dummy. Intuitively, VC provides treatment conditional upon selecting an entrepreneurial firm. Our VC treatment variables may thus include selection effect. In Panel A column (4) we estimate the first stage as an ordered probit model, where the dependent variable is "VC Stage", and redefine the selection correction term $\lambda$ as the generalized residual for each outcome based on Vella (1993, 1998):

$$\lambda = \begin{cases} \dfrac{-\varphi(\beta X)}{1-\Phi(\beta X)} & VC\ Stage = 0 \\ \dfrac{-\varphi(\beta X)-\varphi(\mu-\beta X)}{\Phi(\mu-\beta X)-\Phi(-\beta X)} & VC\ Stage = 1 \\ \dfrac{\varphi(\mu-\beta X)}{1-\Phi(\mu-\beta X)} & VC\ Stage = 2 \end{cases}$$

where $\varphi$ and $\Phi$ are the density and cumulative distribution functions, respectively; $\beta X$ is the linear prediction of the dependent variable; $X$ is the set of factors that affect selection by VCs; and $\mu$ is the estimated separation point between the outcomes.

In Panel A column (5), the dependent variable in the first stage of our two-stage model is "VC Number of Rounds". Following Vella (1993, 1998), we derive the selection correction term $\lambda$ by calculating the generalized residual from a Tobit model, which accounts for the bounded nature of the dependent variable. In particular, $\lambda$ is computed as

$$\lambda = (1 - I)\frac{-\varphi(\beta X)}{1 - \Phi(\beta X)} + I(y - \beta X)$$

where $\varphi$ and $\Phi$ are the density and cumulative distribution functions, respectively, evaluated at the linear prediction of the dependent variable $\beta X$; $y$ is the realization of the dependent variable "VC Number of Rounds"; and $I$ is an indicator function that takes the value of one for observations where "VC Number of Rounds" is strictly positive, and zero otherwise.

We then include these $\lambda$s in the second-stage estimation. From columns (4) and (5) of Panel B, we observe that both proxies for VC treatment continue to be negatively and significantly associated with lower firm mortality. Controlling for the selection components, pre-IPO treatment by VCs still significantly reduces the subsequent mortality of firms they fund.

**B. Controlling Selection by Underwriters**

We explore the underwriters' treatment effect in a similar way by taking into account that the association between issuing firms and underwriters is likely to be endogenous. Fernando, Gatchev, and Spindt (2005) explicitly model the equilibrium matching of issuing firms and underwriters, and highlight that underwriters "look to the issuer's characteristics (relative to other possible issuers), such as the issue size, the likelihood that the offer will be completed and the probability that the issuer will remain in business…" (p. 2437). In the first-stage, we construct $\lambda$ for underwriters following Fernando, Gatchev, and Spindt (2005), and predict the likelihood that a firm is taken public by a high-reputation underwriter using proxies for size ("Proceeds"), the likelihood of offer completion ("Book-building Period"), and *ex ante* uncertainty associated with the issuing firm ("Filing Price Range" and "VC-Backed"), as well as year and industry dummies.[3]

In columns (1) and (2) of Table B2 Panel A, the dependent variable in the first-stage estimation is "High Reputation UW", equal to one if the firm is taken public by a high-reputation underwriter and zero otherwise. In the second stage estimation (columns (1) and (2) of Panel B),

[3] The proxy for size, "Proceeds", is defined as the natural logarithm of the IPO proceeds. The proxy for the likelihood of offer completion, "Book-building Period", follows the rationale highlighted in Benveniste et al. (2003) and is computed as the natural logarithm of one plus number of days in registration. The proxy for *ex ante* uncertainty, "Filing Price Range", follows Hanley (1993) and is defined as the difference between the high and low prices in the prospectus.

we include the selection parameter $\lambda$ derived from the first stage as an additional explanatory variable.

[Insert Table B2 about Here]

Column (1) of Panel B shows that the presence of high-reputation underwriters is associated with a lower incidence of involuntary deaths, even after controlling for selection by such underwriters. The coefficient of the dummy for high-reputation underwriters is significant at the 1% level. This suggests that the effect of underwriters on firm mortality is not limited to their ability to pick good firms for IPO.

In column (2) of Panel B we augment the model in column (1) by adding the underwriter treatment variable. Thus, we explore whether the likelihood of an on-going relationship with its underwriter has any effect on an issuing firm's subsequent mortality. The coefficient of "Likelihood of Relationship" is negative and significant, pointing again to the presence of the treatment effect by underwriters.

Next, we modify the first-stage estimation by using "UW Reputation" instead of "High Reputation UW" as dependent variable (columns (3) and (4) of Panel A). To account for the bounded nature of "UW Reputation", we employ a Tobit model. The construction of the selection correction parameter is similar to that in column (5) of Table B1 Panel A. In the second stage (columns (3) and (4) of Table B2 Panel B), we also replace the dummy for high-reputation underwriters with "UW Reputation".

We observe similar findings: controlling for the selection by underwriters, "UW Reputation" and "Likelihood of Relationship" continue to be negatively and significantly related to firm mortality. In addition, the coefficients of the $\lambda$ terms are significant in columns (1)–(4) of Panel B. In contrast to the selection effect of VCs, selection by a reputable underwriter does seem to matter more. Overall, our analysis of the interaction between firms and reputable underwriters in Table B2 points to the presence of a treatment effect as well as selection.[4]

**C. Switching Regression Model**

In Tables B1 and B2, we employ a regression-based approach to correct for the endogenous choice between IPO firms and financial intermediaries, taking into account the fact that selection may affect the relation between financial intermediaries and firm mortality. As an alternative, we also estimate a switching regressions model for binary outcomes following Miranda and Rabe-Hesketh's (2006) maximum likelihood procedure. The model consists of a regime-switching equation, which determines the regime in which a sample firm falls (e.g., VC-backing versus non–VC-backing and high-reputation versus low-reputation underwriters), and an

[4] We cannot estimate selection with respect to "Likelihood of Relationship" in our two-stage model as we did for proxies for VC treatment in columns (4) and (5) of Table B1. This is because the first-stage selection model is meaningful for VCs, as VC treatments occur in the pre-IPO stage, whereas "Likelihood of Relationship" mainly exists during and post IPO.

outcome equation, which estimates the probability of involuntary death. Both equations are jointly estimated via maximum likelihood.

The same set of explanatory variables in the first stage (second stage) of the two-stage approach is used in the regime-switching equation (outcome equation). To make the procedure applicable, we collapse our firm–year data structure to one observation per firm as follows: The dependent variable in the outcome equation is redefined as a dummy equal to one if a firm experiences involuntary death within the first five years after its IPO, and zero otherwise. Time-variant explanatory variables such as "Size" and "Market to Book" are averaged for each firm across the first five years of its public life. Our findings (untabulated) remain unchanged: The extent of involvement by VCs and high-quality underwriters continues to be significantly associated with a lower probability of involuntary death after controlling for selection. We obtain similar results when restricting involuntary deaths to within the first three years after the IPO.

**II. Instrumental Variable (IV) Tests**

Alternatively, we address the issue of pre-IPO selection by financial intermediaries using an IV approach. To control for selection effect arising from unobservable characteristics that may affect the relation between VCs and the mortality of a firm after it goes public, we adopt the IV approach proposed by Ackerberg and Botticini (2002). It recognizes that VC investments concentrate in certain industries and geographic locations. Consequently, the local availability of certain firm characteristics affects the matching between a portfolio company and VCs, and has

thus served as a valid instrument in the VC literature (Bottazzi, Da Rin, and Hellman (2008), Du (2010)). After VCs make their investments, such local characteristics should not directly affect the mortality of a particular IPO firm.

Following Du (2010), we construct "Local Markets" of the IPO firms in our sample by interacting the state where the issuing firm is located with the Fama–French industry it belongs to, and regress the dummy variable of VC backing on 15 interaction terms that are significant from the 636 local markets.[5] In the second step of the IV regression, we regress the mortality of a firm on the predicted probability of VC backing and the other determinants of survival.

To take into account the selection by underwriters in an IV approach, we identify instruments that affect a firm's choice of underwriters in a similar way, following the economic rationale highlighted in Benveniste, Busaba, and Wilhelm (2002) and Khanna, Noe, and Sonti (2008). In the first stage, we regress the dummy variable for high-reputation underwriter on the number of underwriters available during the month of each IPO ("Number UWs"), the number of IPOs during that month ("Number IPOs"), and the proportion of available high-reputation underwriters ("Fraction Reputable UWs"). An underwriter is "available" in a given month if the month falls between the date of the first and last IPOs conducted by the underwriter. These variables capture the availability of reputable underwriters and their ability to meet the demand

[5] The local markets are derived from the interactions between the Fama–French 12 industry groups and 53 "state" indicators: 50 states plus the District of Columbia and the Virgin Islands plus an indicator for missing firm location.

for underwriting services. Thus, they should not directly affect the subsequent mortality of a particular IPO firm. Note that these variables are not firm-specific and are known during the IPO stage. Although they may be linked to the market conditions at the time of the IPO, future mortality depends more on future market conditions—which we control for in the second stage of the IV regression—than on market conditions at the time of the IPO. In the second stage of the IV regression, we regress the mortality of a firm on the predicted probability of the firm being taken public by a high-reputation underwriter.

Panels A and B of Table B3 present the first-stage and second-stage estimation results of the IV regressions, respectively. From column (1) of Panel B, controlling for the endogenous nature of VC-backing, the coefficient of the dummy for VC backing continues to be negative and significant at the 1% level. Column (2) of Panel B reveals that the coefficient of the dummy of high-reputation underwriter is also negatively and significantly related to mortality. Thus, we confirm that after taking into account unobserved factors that may affect selection at the IPO stage, VCs and high-quality underwriters are still associated with fewer incidences of involuntary post-IPO death.

[Insert Table B3 about Here]

**Table B1: Selection or Treatment by VCs: Two-Stage Regression**

This table reports the parameter estimates for the two-stage models for VCs with Heckman correction for self-selection. Panel A shows the first-stage estimation results. The first stage of models (1)–(3) is a cross-sectional probit model with a dependent variable that takes the value of one if an IPO firm is VC backed, and zero otherwise. The first stage of model (4) is an ordered probit model with dependent variable "VC Stage", which takes the value of two if the first VC investment occurred at an early or seed stage, one if it occurred at any other stage and zero if the firm is not VC backed. The first stage in model (5) is a Tobit model with the number of VC investment rounds received by the firm ("VC Number of Rounds") as the dependent variable. The explanatory variables in each of the first-stage models used for VC selection are the natural logarithm of the total assets of the firm before the offering date ("Size before Offering"), the book value per share ("Book Value per Share"), and industry and year fixed effects. Panel B shows the second-stage estimation for VCs, which is a pooled logit model predicting a firm's involuntary death (CRSP delisting codes 400–591). The estimations use all firm–year observations in the period 1985–2006 for firms that went public in and after 1985. The unit of analysis is firm–year pair. The dependent variable is one if a firm experiences involuntary death in a given year, and zero otherwise. The selection correction parameter $\lambda$ is computed from the results of the respective first stage. A detailed description of variable construction is provided in the Appendix of the main paper. The models include exchange fixed effects and industry fixed

effects, where industry classification is based on the Fama–French 12 industries. Marginal effects for the variables of interest are in square brackets. Standard errors, clustered at the firm level, are in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table B1 continued.**

| **Panel A** | (1)-(3) | (4) | (5) |
|---|---|---|---|
| | Probit | Ordered Probit | Tobit |
| Size before Offering | 0.135** | 0.012 | 0.068 |
| | (0.012) | (0.013) | (0.052) |
| Book Value per Share | -0.003 | -0.004 | -0.008 |
| | (0.004) | (0.004) | (0.011) |
| Intercept | -0.749** | -1.087** | -4.179** |
| | (0.127) | (0.136) | (0.541) |
| Industry Dummies | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes |
| No. of observations | 4,421 | 4,421 | 4,271 |
| Pseudo-$R^2$ | 0.249 | 0.278 | 0.095 |

**Table B1 continued.**

| **Panel B** | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| VC-Backed | -1.136** | -0.867* | -0.757+ | | |
| | (0.418) | (0.428) | (0.435) | | |
| | [-0.033] | [-0.025] | [-0.021] | | |
| VC Stage | | -0.174** | | -0.746** | |
| | | (0.064) | | (0.219) | |
| | | [-0.005] | | [-0.021] | |
| VC Number of Rounds | | | -0.069* | | -0.177** |
| | | | (0.034) | | (0.057) |
| | | | [-0.002] | | [-0.005] |
| Incubation Time | -0.166** | -0.172** | -0.174** | -0.187** | -0.184** |
| | (0.036) | (0.036) | (0.037) | (0.036) | (0.036) |
| Size | -0.288** | -0.291** | -0.291** | -0.307** | -0.308** |
| | (0.026) | (0.026) | (0.026) | (0.024) | (0.024) |
| Age | -0.002 | -0.002 | 0.001 | -0.001 | 0.006 |
| | (0.011) | (0.011) | (0.012) | (0.011) | (0.010) |
| Market to Book | -0.272** | -0.273** | -0.278** | -0.274** | -0.279** |
| | (0.056) | (0.057) | (0.060) | (0.057) | (0.060) |
| Leverage | 0.957** | 0.932** | 0.913** | 0.909** | 0.898** |
| | (0.153) | (0.154) | (0.159) | (0.153) | (0.158) |
| Z-Score | -0.069** | -0.070** | -0.070** | -0.070** | -0.069** |
| | (0.016) | (0.017) | (0.017) | (0.017) | (0.016) |
| $\lambda$ (VC-Backed) | 0.528* | 0.463+ | 0.328 | | |
| | (0.257) | (0.258) | (0.263) | | |
| $\lambda$ (VC Stage) | | | | 0.524* | |
| | | | | (0.212) | |
| $\lambda$ (VC Number of Rounds) | | | | | 0.047 |
| | | | | | (0.031) |
| Intercept | -1.542** | -1.563** | -1.648** | -1.572** | -1.837** |
| | (0.546) | (0.549) | (0.559) | (0.544) | (0.535) |
| Industry Dummies | Yes | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes | Yes |
| No. of Observations | 23,538 | 23,538 | 22,859 | 23,538 | 22,859 |
| Pseudo-$R^2$ | 0.156 | 0.157 | 0.157 | 0.157 | 0.156 |

**Table B2: Selection or Treatment by Underwriters: Two-Stage Regression**

This table reports the parameter estimates for the two-stage models for underwriters with Heckman correction for self-selection. Panel A shows the first-stage estimation results. The first stage in models (1) and (2) is a cross-sectional probit model with a dependent variable that takes the value of one if a firm is taken public by a high-reputation underwriter (reputation rank above the sample median of 8), and zero otherwise. The first stage in models (3) and (4) is a Tobit model with the reputation of the underwriter of the IPO as the dependent variable. The explanatory variables are the natural logarithm of the IPO proceeds ("Proceeds"), the natural logarithm of the length of the book-building period (in days) ("Book-building Period"), the filing price range ("Filing Price Range"), an indicator variable for VC-backed IPOs ("VC-Backed"), and industry and calendar year fixed effects. The selection correction parameter $\lambda$ is computed from the results of the respective first stage. Panel B shows the second stage of the estimation, based on a pooled logit model predicting the firm's involuntary death (CRSP delisting codes 400–591). The unit of analysis is firm–year pair. The estimations use all the firm–year observations in the period 1985–2006 for firms that went public in and after 1985. The dependent variable is one if a firm experiences involuntary death in a given year, and zero otherwise. A detailed description of variable construction is provided in the Appendix of the main paper. The models include exchange fixed effects and industry fixed effects, where industry classification is based on the Fama–French 12 industries. Marginal effects for the

variables of interest are in square brackets. Standard errors, clustered at the firm level, are in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

| **Panel A** | (1) and (2) | (3) and (4) |
|---|---|---|
| | Probit | Tobit |
| Proceeds | 0.892** | 1.129** |
| | (0.027) | (0.021) |
| Book-building Period | 0.013 | -0.214** |
| | (0.030) | (0.029) |
| Filing Price Range | 0.195** | 0.689** |
| | (0.033) | (0.024) |
| VC-Backed | 0.267** | 0.691** |
| | (0.042) | (0.042) |
| Intercept | -4.360** | 2.431** |
| | (0.186) | (0.151) |
| Industry Dummies | Yes | Yes |
| Year Dummies | Yes | Yes |
| No. of observations | 6,311 | 6,311 |
| Pseudo-$R^2$ | 0.491 | 0.193 |

**Table B2 continued.**

| **Panel B** | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| High Reputation UW | -0.820** | -0.703** | | |
| | (0.145) | (0.147) | | |
| | [-0.017] | [-0.014] | | |
| UW Reputation | | | -0.168** | -0.154** |
| | | | (0.021) | (0.021) |
| | | | [-0.004] | [-0.003] |
| Likelihood of Relationship | | -1.138** | | -1.075** |
| | | (0.235) | | (0.232) |
| | | [-0.025] | | [-0.023] |
| Incubation Time | -0.154** | -0.159** | -0.128** | -0.132** |
| | (0.031) | (0.031) | (0.032) | (0.032) |
| Size | -0.286** | -0.286** | -0.251** | -0.251** |
| | (0.023) | (0.023) | (0.024) | (0.024) |
| Age | 0.020* | -0.003 | 0.011 | -0.010 |
| | (0.009) | (0.010) | (0.009) | (0.010) |
| Market to Book | -0.331** | -0.318** | -0.334** | -0.321** |
| | (0.040) | (0.040) | (0.041) | (0.041) |
| Leverage | 1.102** | 1.105** | 1.082** | 1.087** |
| | (0.138) | (0.138) | (0.142) | (0.142) |
| Z-Score | -0.080** | -0.077** | -0.082** | -0.079** |
| | (0.013) | (0.013) | (0.014) | (0.014) |
| λ (High Reputation) | 0.346** | 0.292** | | |
| | (0.097) | (0.098) | | |
| λ (UW Reputation) | | | 0.103** | 0.093** |
| | | | (0.031) | (0.031) |
| Intercept | -1.943** | -1.703** | -1.202** | -1.042* |
| | (0.437) | (0.437) | (0.447) | (0.446) |
| Industry Dummies | Yes | Yes | Yes | Yes |
| Year Dummies | Yes | Yes | Yes | Yes |
| Exchange Dummies | Yes | Yes | Yes | Yes |
| No. of Observations | 35,235 | 35,235 | 35,235 | 35,235 |
| Pseudo-$R^2$ | 0.166 | 0.169 | 0.171 | 0.174 |

**Table B3: Selection or Treatment by Financial Intermediaries: IV Regression**

This table reports the parameter estimates for the IV regressions. Panels A and B show the first-stage and second-stage results, respectively. Column (1) of Panels A and B presents the respective stages of the IV estimation for VCs. The first stage is a cross-sectional model with a dependent variable equal to one if an IPO firm is backed by a VC, and zero otherwise. The explanatory variables, "Local Market" *i*, are the 15 significant "local market" interaction terms between the states and each of the Fama–French 12 industry indicators. Column (2) of Panels A and B show the respective stages of the IV estimation for underwriters. The first stage is a cross-sectional model with a dependent variable equal to one if an IPO firm is taken public by an underwriter of high reputation, and zero otherwise. The explanatory variables are the number of underwriters available during the month of the IPO ("Number UWs"), the fraction of high-reputation underwriters ("Fraction Reputable UWs"), and the number of IPOs during the month of the IPO ("Number IPOs"). Industry classification is based on the Fama–French 12 industries. A detailed description of variable construction is provided in the Appendix of the main paper. Marginal effects for the variables of interest are in square brackets. Standard errors are clustered at the firm level and reported in parentheses. +, *, and ** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table B3 continued.**

| **Panel A** | (1) | (2) |
|---|---|---|
| Local Market 1 | 0.357** | |
| | (0.019) | |
| Local Market 2 | 0.356** | |
| | (0.028) | |
| Local Market 3 | -0.206** | |
| | (0.046) | |
| Local Market 4 | 0.252** | |
| | (0.071) | |
| Local Market 5 | 0.400** | |
| | (0.108) | |
| Local Market 6 | -0.225** | |
| | (0.059) | |
| Local Market 7 | 0.393** | |
| | (0.036) | |
| Local Market 8 | 0.352** | |
| | (0.046) | |
| Local Market 9 | -0.234** | |
| | (0.080) | |
| Local Market 10 | -0.263** | |
| | (0.041) | |
| Local Market 11 | 0.387** | |
| | (0.078) | |
| Local Market 12 | 0.347** | |
| | (0.090) | |
| Local Market 13 | 0.194** | |
| | (0.049) | |
| Local Market 14 | 0.306** | |
| | (0.065) | |
| Local Market 15 | 0.374** | |
| | (0.086) | |
| Number UWs | | -0.024** |
| | | (0.002) |
| Fraction Reputable UWs | | 1.699** |
| | | (0.230) |
| Number IPOs | | 0.010** |
| | | (0.004) |
| Intercept | 0.592** | 0.488** |
| | (0.024) | (0.048) |
| No. of observations | 7,094 | 6,799 |
| $R^2$ | 0.171 | 0.069 |

**Table B3 continued.**

| **Panel B** | (1) | (2) |
|---|---|---|
| VC-Backed | -0.655** | |
| | (0.227) | |
| | [-0.016] | |
| High Reputation UW | | -0.449+ |
| | | (0.263) |
| | | [-0.010] |
| Incubation Time | -0.158** | -0.162** |
| | (0.030) | (0.031) |
| Size | -0.317** | -0.325** |
| | (0.019) | (0.02) |
| Age | 0.014 | 0.027** |
| | (0.009) | (0.008) |
| Market to Book | -0.266** | -0.318** |
| | (0.044) | (0.038) |
| Leverage | 1.024** | 1.095** |
| | (0.130) | (0.136) |
| Z-Score | -0.068** | -0.074** |
| | (0.012) | (0.012) |
| Intercept | -1.881** | -1.814** |
| | (0.434) | (0.424) |
| Industry Dummies | Yes | Yes |
| Year Dummies | Yes | Yes |
| Exchange Dummies | Yes | Yes |
| No. of Observations | 38,180 | 36,473 |
| Pseudo-$R^2$ | 0.152 | 0.160 |

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