

Entrepreneurial Finance and the Effects of Restrictions on Government R&D Subsidies: Supplemental Material

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Table A1. Effects of the Israeli policy reform on startups' propensity to apply for government R&D subsidies

	Likelihood of applying for an R&D subsidy
Y 2000 x Received funds	-0.017 (0.126)
Y 2001 x Received funds	0.195** (0.095)
Y 2002 x Received funds	0.131 (0.128)
Y 2003 x Received funds	-0.134 (0.177)
Y 2004 x Received funds	0.152 (0.138)
Y 2005 x Received funds	0.096 (0.101)
Y 2006 x Received funds	0.179 (0.118)
Y 2007 x Received funds	0.310*** (0.115)
Y 2008 x Received funds	0.228** (0.094)
Y 1999	0.087 (0.137)
Y 2000	0.083 (0.141)
Y 2001	-0.080 (0.131)
Y 2002	0.139 (0.167)
Y 2003	0.231 (0.180)
Y 2004	0.000 (0.190)
Y 2005	0.006 (0.183)
Y 2006	0.005 (0.141)
Y 2007	-0.025 (0.212)
Y 2008	0.037 (0.290)
Received funds	-0.303*** (0.086)
Controls	YES
Sector & Region FEs	YES
Observations	1,237
R-squared	0.150

Notes: We report the coefficients on the years of the startups' expected first subsidy application and the interactions between these year indicators and the *Received funds* variable using the same sample definition as in column VIII of Table 2. *Received funds* is an indicator for whether startups had received private funds at inception. Since there are very few sample startups with initial funds that were expected to apply for their first subsidy in 1998 and 1999, we combine them together. The *F* statistic on the pre-reform year coefficients is 1.47 (*p*-value: 0.19). The *F* statistic on the coefficients for the interactions between *Received funds* and the pre-reform year indicators is 1.54 (*p*-value: 0.18). The *F* statistic on the coefficients for the interactions between *Received funds* and the post-reform year indicators is 2.52 (*p*-value: 0.06). The *F* statistic on the coefficients for the post-reform year indicators is 0.09 (*p*-value: 0.96). Controls and fixed effects are listed in the text. Standard errors (in parentheses) are clustered around sector and inception year. ***, **, and *: significance at the 1%, 5%, and 10% levels.

Table A2. Effects of the Israeli policy reform on startups' propensity to apply for government R&D subsidies: ICT and non-ICT startups

PANEL A: ICT Startups	Founded through 2006		Removing applications filed after 2 yrs. from start		Founded during 1997 through 2006	
	(I)	(II)	(III)	(IV)	(V)	(VI)
Post amendment to R&D	-0.016 (0.096)	-0.022 (0.098)	-0.010 (0.080)	-0.063 (0.087)	0.134 (0.128)	0.094 (0.128)
Received funds	-0.084** (0.034)	-0.088* (0.044)	-0.115*** (0.039)	-0.154*** (0.048)	-0.091** (0.038)	-0.127** (0.049)
Post amendment to R&D Law x Received funds		0.017 (0.066)		0.142** (0.069)		0.118* (0.070)
Controls	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES
Trends	YES	YES	YES	YES	YES	YES
Observations	898	898	786	786	686	686
R-squared	0.118	0.118	0.136	0.140	0.134	0.137

PANEL B: Non-ICT Startups	Founded through 2006		Removing applications filed after 2 yrs. from start		Founded during 1997 through 2006	
	(I)	(II)	(III)	(IV)	(V)	(VI)
Post amendment to R&D	0.223* (0.125)	0.128 (0.118)	0.090 (0.126)	0.004 (0.126)	0.245 (0.171)	0.102 (0.160)
Received funds	-0.221*** (0.035)	-0.257*** (0.040)	-0.288*** (0.038)	-0.321*** (0.041)	-0.225*** (0.042)	-0.288*** (0.049)
Post amendment to R&D Law x Received funds		0.179** (0.081)		0.172* (0.097)		0.256** (0.098)
Controls	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES
Trends	YES	YES	YES	YES	YES	YES
Observations	859	859	702	702	551	551
R-squared	0.107	0.111	0.141	0.146	0.119	0.130

Notes: This table reports the estimation of equations (4) and (5). We estimate linear probability models for the likelihood that a startup applies for an R&D subsidy, distinguishing between ICT startups (Panel A) and non-ICT startups (Panel B). ICT startups include startups operating in telecommunications, software, and the internet sectors. Columns I and II report results from restricting the sample to startups founded through 2006. Columns III and IV report results for startups founded through 2006, excluding applications filed after two years from a startup's start year. Finally, columns V and VI report results for startups founded during 1997 through 2006, excluding applications filed after two years from a startup's start year. Controls, trends, and fixed effects are the same as those listed in Table 2. Standard errors (in parentheses) are clustered around sector and inception year. ***, **, and *: significance at the 1%, 5%, and 10% levels.

Table A3. Likelihood that a startup applicant is granted an R&D subsidy

	All first-time applications	First-time applications filed before 2010
Post amendment to R&D Law	0.109 (0.183)	-0.027 (0.214)
Amount funds received (log)	0.023 (0.034)	0.021 (0.035)
Amount funds received (log) x Post amendment to R&D Law	0.017 (0.054)	0.057 (0.058)
University spinoff	-0.044 (0.062)	-0.041 (0.062)
University spinoff x Post amendment to R&D Law	-0.017 (0.119)	0.001 (0.128)
Government incubator	-0.281*** (0.048)	-0.282*** (0.049)
Government incubator x Post amendment to R&D Law	0.296*** (0.109)	0.337** (0.131)
Company accelerator	-0.232** (0.100)	-0.236** (0.099)
Company accelerator x Post amendment to R&D Law	0.372** (0.147)	0.426** (0.177)
Age at first application (log)	-0.016 (0.042)	-0.007 (0.042)
Age at first application (log) x Post amendment to R&D Law	-0.068 (0.076)	-0.019 (0.102)
N. founders (log)	0.017 (0.042)	0.020 (0.043)
N. founders (log) x Post amendment to R&D Law	-0.049 (0.074)	0.002 (0.082)
Received external investment	-0.032 (0.076)	-0.030 (0.078)
Received external investment x Post amendment to R&D Law	0.065 (0.109)	0.081 (0.122)
Received BIRD grant	0.084 (0.156)	0.070 (0.153)
Received BIRD grant x Post amendment to R&D Law	-0.063 (0.311)	-0.046 (0.449)
N. granted patents (log)	0.016 (0.033)	0.015 (0.033)
N. granted patents (log) x Post amendment to R&D Law	-0.024 (0.062)	-0.063 (0.062)
Experienced positive sales	-0.226* (0.129)	-0.223* (0.129)
Experienced positive sales x Post amendment to R&D Law	0.265 (0.167)	0.161 (0.171)
Constant	0.489** (0.215)	0.427* (0.229)
Start year/Sector/Region FEs	YES	YES
Sector FE x Post amendment to R&D Law	YES	YES
Region FE x Post amendment to R&D Law	YES	YES
Trends	YES	YES
Observations	907	791
R-squared	0.167	0.194

Notes: Standard errors (in parentheses) are clustered around sector and inception year. ***, **, and *: significance at the 1%, 5%, and 10% levels.

Table A4. Effects of the Israeli policy reform on venture outcomes - ICT and non-ICT startups

	Survival			Attracting external investment					Patent output			
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)
PANEL A: ICT Startups												
Post amendment to R&D Law	-0.030 (0.125)	-0.108 (0.131)	0.018 (0.117)	-0.059 (0.128)	-0.033 (0.121)	-0.116 (0.138)	0.003 (0.092)	-0.088 (0.121)	0.017 (0.114)	-0.053 (0.120)	0.089 (0.137)	0.010 (0.139)
R&D subsidy	0.076 (0.062)	0.027 (0.077)	0.068 (0.060)	0.020 (0.077)	0.064 (0.071)	0.008 (0.098)	0.052 (0.068)	-0.005 (0.092)	0.093 (0.089)	0.049 (0.110)	0.072 (0.082)	0.022 (0.106)
R&D subsidy x	0.166 (0.116)	0.166 (0.116)	0.161 (0.119)	0.161 (0.119)	0.186 (0.128)	0.186 (0.128)	0.192 (0.121)	0.192 (0.121)	0.149 (0.187)	0.149 (0.187)	0.166 (0.159)	0.166 (0.159)
Controls in X_i	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls in M_i	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Start year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Trends	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	339	339	339	339	339	339	339	339	339	339	339	339
R-squared	0.165	0.170	0.205	0.209	0.155	0.160	0.216	0.223	0.161	0.163	0.350	0.352
PANEL B: Non-ICT Startups												
Post amendment to R&D Law	0.088 (0.102)	-0.070 (0.118)	0.112 (0.104)	-0.021 (0.123)	-0.023 (0.097)	-0.205 (0.110)	-0.018 (0.077)	-0.177 (0.091)	-0.015 (0.218)	-0.286 (0.192)	0.100 (0.172)	-0.132 (0.162)
R&D subsidy	0.033 (0.052)	-0.048 (0.071)	0.024 (0.055)	-0.043 (0.074)	0.012 (0.047)	-0.078 (0.062)	0.011 (0.048)	-0.070 (0.059)	0.111 (0.085)	-0.029 (0.096)	0.082 (0.076)	-0.036 (0.079)
R&D subsidy x	0.290** (0.123)	0.290** (0.123)	0.241* (0.122)	0.241* (0.122)	0.322*** (0.090)	0.322*** (0.090)	0.289*** (0.091)	0.289*** (0.091)	0.496** (0.235)	0.496** (0.235)	0.421** (0.181)	0.421** (0.181)
Controls in X_i	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls in M_i	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Start year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Trends	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	452	452	452	452	452	452	452	452	452	452	452	452
R-squared	0.142	0.156	0.181	0.190	0.182	0.202	0.224	0.240	0.168	0.182	0.335	0.345

Notes: This table reports the estimation of equation (6). We truncate the sample in 2009 to provide sufficient time to evaluate venture outcomes. In columns I-IV, we estimate linear probability models for the likelihood that a startup survives after its first subsidy application. In columns V-VIII, we estimate linear probability models for the likelihood that a startup attracts external investment after its first subsidy application. In columns IX-XII, the outcome variable is an indicator that is equal to zero if a startup did not apply for any U.S. granted patent in the five years following its first subsidy application, one if it applied for one patent, and two if it applied for more than one patent. The list of controls encompassed in the vectors X_i and M_i is provided in the text. We control for the interaction between the Israeli GDP at a startup's inception and sector FE, as well as the interaction between the Israeli GDP at a startup's first application and sector FE. Standard errors (in parentheses) are clustered around sector and inception year. ***, **, and * : significance at the 1%, 5%, and 10% levels.

Table A5. Likelihood that a startup applicant is granted an R&D subsidy: ICT and non-ICT startups

	ICT Startups				Non-ICT Startups			
	All first-time applications	First-time applications filed before 2010	All first-time applications	First-time applications filed before 2010	All first-time applications	First-time applications filed before 2010	All first-time applications	First-time applications filed before 2010
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
Post amendment to R&D Law	0.096 (0.116)	0.081 (0.143)	0.064 (0.135)	0.001 (0.162)	0.050 (0.091)	-0.016 (0.110)	0.056 (0.108)	-0.029 (0.120)
Funds received (log)	0.050 (0.039)	0.045 (0.043)	0.056 (0.043)	0.042 (0.044)	0.036 (0.037)	0.008 (0.043)	0.028 (0.039)	-0.002 (0.048)
Post amendment to R&D Law x Amount funds received (log)	0.210*** (0.065)	0.212*** (0.067)	0.217*** (0.062)	0.229*** (0.067)	-0.086 (0.062)	-0.091 (0.062)	-0.084 (0.060)	-0.092 (0.061)
Government incubator	-0.179*** (0.089)	-0.180*** (0.089)	-0.178*** (0.087)	-0.181*** (0.087)	-0.145*** (0.055)	-0.150*** (0.055)	-0.155*** (0.058)	-0.159*** (0.058)
Company accelerator	-0.367*** (0.159)	-0.368*** (0.160)	-0.286 (0.199)	-0.285 (0.204)	0.058 (0.091)	0.053 (0.091)	-0.005 (0.094)	-0.007 (0.094)
Age at first application (log)	-0.149*** (0.057)	-0.146*** (0.059)	-0.124* (0.064)	-0.114* (0.065)	0.027 (0.044)	0.042 (0.047)	0.050 (0.042)	0.068 (0.043)
N. founders (log)	-0.014 (0.049)	-0.014 (0.049)	-0.002 (0.047)	-0.001 (0.047)	-0.002 (0.044)	-0.002 (0.045)	0.027 (0.047)	0.029 (0.048)
Received external investment	-0.082 (0.071)	-0.082 (0.071)	-0.061 (0.081)	-0.063 (0.082)	0.020 (0.072)	0.020 (0.072)	0.014 (0.079)	0.012 (0.078)
Received BIRD grant	0.009 (0.171)	0.010 (0.172)	-0.003 (0.169)	-0.002 (0.168)	0.213 (0.239)	0.206 (0.237)	0.269 (0.283)	0.273 (0.275)
N. granted patents (log)	0.000 (0.036)	-0.000 (0.036)	-0.002 (0.036)	-0.006 (0.038)	0.004 (0.038)	0.005 (0.038)	-0.003 (0.041)	-0.000 (0.042)
Experienced positive sales	-0.137 (0.089)	-0.143 (0.092)	-0.168 (0.102)	-0.196* (0.104)	0.025 (0.114)	0.010 (0.117)	-0.014 (0.141)	-0.021 (0.136)
Constant	0.704*** (0.235)	0.709*** (0.235)	0.618*** (0.239)	0.627*** (0.234)	0.416 (0.305)	0.432 (0.305)	0.220 (0.343)	0.226 (0.342)
Start year FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES
Trends	YES	YES	YES	YES	YES	YES	YES	YES
Observations	383	383	339	339	524	524	452	452
R-squared	0.220	0.220	0.205	0.208	0.157	0.159	0.188	0.191

Notes: This table reports the estimation of the probability that a startup applicant is granted an R&D subsidy (equation (7) in the text). In columns I-IV, we report the results for ICT startups. In columns V-VIII, we report the results for non-ICT startups. In columns I and II, we consider the entire sample of ICT startups. Similarly, in columns V and VI, we consider the entire sample of non-ICT startups. In columns III and IV as well as in columns VII and VIII, we truncate the sample in 2009. We control for the interaction between the Israeli GDP at a startup's inception and sector FE, as well as the interaction between the Israeli GDP at a startup's first application and sector FE. Standard errors (in parentheses) are clustered around sector and inception year. ***, **, and * : significance at the 1%, 5%, and 10% levels.