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**Who seeks and who receives? Implications of demand for and access to financial capital by young firms in the current economic crisis**

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# Motivation:

## Great Recession and Access to Financing

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- ▶ Young firms and financial resources
- ▶ Mix equity and debt sources (Cole, 2008; Cosh, Cumming, & Hughes, 2009; Eckhardt, Shane, & Delmar, 2006; Gompers & Lerner, 2006)
  - ▶ Most do not receive VC financing (Shane,2008), (Berger and Udell,1998), (Cole 2008)
  - ▶ Banks provide critical growth capital
    - initial financing in new biomedical/pharmaceutical companies (Roberts and Hauptman,1987)
- ▶ high-tech firms
  - ▶ Entrepreneurs face strong incentives to acquire non-dilutive financing (Winton & Yeramilli, 2008; Ueda, 2004)
- ▶ Adverse financial shock magnifies information asymmetry

# Research questions

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- ▶ What is the impact of the financial crisis on:
  - ▶ Decision to apply for a bank loan?
  - ▶ Likelihood of receiving a bank loan?
- ▶ Role of subjective measures/behavior in financing decision?
  - ▶ What are the implications for innovation and economic growth?



# Banks and new firm financing

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- ▶ **Ease financial constraints for new firms**
- ▶ Deregulation and new entrepreneurial activity (Black and Strahan, 2002)
- ▶ **Substantial role in new firm formation** (Ayyagari, Demirguc-Kunt and Maksimovic (2010); Beck, Demirgüç-Kunt and Maksimovic (2008); Kerr and Nanda (2009 )
- ▶ **External sources of financing**
  - ▶ Information asymmetry and importance of tangible assets (Berger and Udell, 1998)
  - ▶ Significance of outside debt in new firms capital structure (Robb and Robinson, 2010)

# High tech firms

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## ▶ Banks and high-tech firms

- ▶ Bank loans increase as information asymmetry decreases (Winston Smith, 2010)
- ▶ Increases innovation (Benfratello et al. 2010)
- ▶ Bank loans and exit by acquisition
- ▶ Less risky continuation strategy (Winton and Yerramilli, 2008)

# Prior empirical studies

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- ▶ Selected based on financial choices...
- ▶ firms which have received venture capital financing  
(Amit, Glosten, & Muller, 1990; Bottazzi, Da Rin, & Hellmann, 2008; Fitza, Matusik, & Mosakowski, 2009; Gaba & Meyer, 2008; Gompers & Lerner, 2003; Gulati & Higgins, 2003; Kogut, Urso, & Walker, 2007; Lee, Peng, & Barney, 2007; Lerner, 1994)
- ▶ firms relying largely on external debt  
(Landier & Thesmar, 2009), others
- ▶ pre-IPO behavior  
(Chemmanur, He, and Nandy (2009), others
- ▶ Or limited sample...
  - ▶ High-tech only (which focus on VC, for most part)
  - ▶ *or* not include high tech (which focus on banks/debt, for most part)

# Empirical Setting

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- Data: Kauffman Firm Survey (KFS)
  - Ongoing, longitudinal study of new businesses in US
  - Stratified random sample of new businesses started in 2004
    - Eligibility for inclusion → NOT HAVE PRIOR TO 2004: EIN/schedule C income/legal form/state UI or FICA taxes prior to 2004
  - ▶ Baseline Survey conducted in 2005
  - Annual follow-ups: 2006, 2007, 2008, 2009, n=4,928 firms at start
  - ▶ Access through NORC data enclave (confidentiality)
    - ▶ Microdata
  - Industry detail

# Model and empirical analysis

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- ▶ Observable financial and performance measures
  - ▶ extent of credit constraint, revenue in previous year
- ▶ Behavioral characteristics
  - ▶ Optimism, risk, fear of denial

$$(1) \text{ loan demand} = \beta_0 + \beta_1 \text{growth} + \beta_2 \text{constrained} + \beta_3 \text{behavioral} + \beta_4 \text{firm} + \beta_5 \text{entrepreneur} + \varepsilon$$

$$(2) \text{ loan approval} = \delta_0 + \delta_1 \text{growth} + \delta_2 \text{asymmetry} + \delta_3 \text{firm} + \delta_4 \text{entrepreneur} + \mu$$



# Sample Characteristics

	All Firms		Non-High Tech		High-Tech	
Obs	4022		3432		590	
<b>Outcomes</b>	<i>mean</i>	<i>se</i>	<i>mean</i>	<i>se</i>	<i>mean</i>	<i>se</i>
Applied for New Loan	0.1238	0.0076	0.1205	0.0080	0.1670	0.0250
Always Approved for Loan	0.6691	0.0313	0.6735	0.0335	0.6274	
Revenue (mill)	0.5583	0.0364	0.5475	0.0387	0.6912	
Profit (mill)	0.0476	0.0239	0.0552	0.0255	-0.0529	0.0396
<b>Behavioral Characteristics</b>						
Did not apply out of Fear	0.1887	0.0091	0.1895	0.0096	0.1783	0.0258
Did not Meet Expected Growth	0.3435	0.0087	0.3409	0.0091	0.3822	0.0254
Future Revenue less than 5%	0.2256	0.0076	0.2258	0.0079	0.2228	0.0226
Economic Crisis has a Significant Effect	0.2558	0.0080	0.2579	0.0084	0.2248	0.0217
Personal Outlook in Uncertainty	0.0906	0.0051	0.0886	0.0053	0.1212	0.0176
Outside Help	0.6074	0.0089	0.6066	0.0094	0.6190	0.0254
<b>Owner Characteristics</b>						
Black	0.0856	0.0052	0.0859	0.0055	0.0815	0.0157
Female	0.3096	0.0064	0.3204	0.0068	0.1492	0.0150
Hours Worked by Owner	42.376	0.4416	42.381	0.4625	42.301	1.3585
Owner Age	44.859	0.1997	44.857	0.2099	44.891	0.5444
College Degree or Higher	0.4844	0.0091	0.4704	0.0095	0.6921	0.0240
Work Experience	0.4405	0.0090	0.4301	0.0094	0.5945	0.0267
Previous Startup	0.4238	0.0090	0.4197	0.0095	0.4840	0.0266
<b>Firm Characteristics</b>						
Comparative Advantage	0.6167	0.0089	0.6102	0.0094	0.7128	0.0243
Product	0.5127	0.0091	0.5116	0.0095	0.5284	0.0262
Home base	0.4970	0.0091	0.4946	0.0095	0.5329	0.0269
High Tech	0.0632	0.0031	0.0000	0.0000	1.0000	
Multiple Owners	0.5628	0.0091	0.5626	0.0095	0.5653	0.0264
Corporate Form	0.1870	0.0070	0.1808	0.0073	0.2802	0.0234
High Credit Score	0.5290	0.0091	0.5245	0.0096	0.5963	0.0264
Rural	0.1665	0.0065	0.1702	0.0069	0.1122	0.0174
PPE/Asset Ratio	0.3525	0.0083	0.3582	0.0088	0.2767	0.0202
RD Emp/Emp Ratio	0.1044	0.0057	0.1003	0.0059	0.1663	0.0186
Trade Credit	0.5257	0.0091	0.5290	0.0096	0.4778	0.0265
Log(Emp)	0.8286	0.0222	0.8117	0.0234	1.0502	0.0665
Log(Assets)	0.1081	0.0067	0.1066	0.0071	0.1305	0.0162
Insider Financing/Total Financing Ratio	0.0554	0.0053	0.0552	0.0055	0.0572	0.0176
Has Bus. C.Card	0.1654	0.0068	0.1669	0.0071	0.1437	0.0182
Has Bus. C.Line	0.0779	0.0049	0.0772	0.0051	0.0881	0.0133
Has Intellectual Property	0.1204	0.0058	0.1132	0.0060	0.2284	0.0209

# Results: Loan Demand (main variables)

VARIABLES	(1)	(2)	(3)	(4)	(5)
	All Years	2007	2008	2008	2008
	App for Loan	App for Loan	App for Loan	App for Loan	App for Loan
PPE/Asset Ratio	0.215* (0.126)	0.178 (0.180)	0.319* (0.174)	0.323* (0.177)	0.331* (0.181)
RD Emp/Emp Ratio	0.0370 (0.114)	-0.00371 (0.138)	0.0930 (0.169)	0.0504 (0.172)	0.0843 (0.179)
Trade Credit	0.388*** (0.0866)	0.506*** (0.116)	0.284** (0.120)	0.237** (0.120)	0.248** (0.126)
Insider Financing/Total Financing Ratio	0.259 (0.110)	-0.0412 (0.174)	0.598** (0.143)	0.727** (0.146)	0.781*** (0.150)
Has Bus. C.Card	0.0597 (0.0845)	0.0757 (0.121)	0.0206 (0.117)	-0.0134 (0.119)	-0.0157 (0.120)
Has Bus. C.L.Ine	0.760*** (0.0957)	0.840*** (0.137)	0.769*** (0.135)	0.769*** (0.138)	0.757*** (0.138)
Has Intellectual Property	-0.0443 (0.0954)	-0.202 (0.139)	0.138 (0.132)	0.119 (0.133)	0.161 (0.141)
interaction with high-tech					-0.432 (0.344)
Medium Credit Score	-0.0179 (0.107)	-0.0918 (0.147)	-0.000553 (0.155)	0.0277 (0.156)	0.0809 (0.169)
interaction with high-tech					-0.154 (0.463)
High Credit Score	0.0612 (0.103)	-0.136 (0.144)	0.231 (0.147)	0.228 (0.147)	0.279* (0.159)
interaction with high-tech					-0.149 (0.427)
Ever fear denial and not apply	0.232** (0.0954)	0.244* (0.135)	0.196 (0.131)	0.124 (0.139)	0.0505 (0.152)
interaction with high-tech					0.888** (0.353)
Did not Meet Expected Growth				-0.175 (0.127)	-0.221* (0.134)
interaction with high-tech					0.312 (0.360)
Future Revenue less than 5%				-0.130 (0.127)	-0.109 (0.131)
interaction with high-tech					-0.829* (0.463)
Economic Crisis has a Significant Effect				0.336*** (0.127)	0.350*** (0.134)
interaction with high-tech					0.0900 (0.339)
Personal Outlook in Uncertainty				0.0887 (0.146)	0.138 (0.158)
interaction with high-tech					-0.156 (0.380)



# Results: Loan Approval (main variables)

VARIABLES	(1)	(2)	(3)	(4)	(5)
	All Years Approved	2007 Approved	2008 Approved	2008 Approved	2008 Approved
Has Intellectual Property	0.409 (0.261)	0.529 (0.506)	0.451 (0.341)	0.740** (0.347)	1.830 (1.306)
interaction with high-tech					-2.128 (2.187)
Medium Credit Score	0.578 (0.395)	1.245** (0.602)	0.187 (0.481)	0.344 (0.464)	1.813 (1.278)
interaction with high-tech					12.62*** (3.579)
High Credit Score	0.466 (0.291)	0.562 (0.509)	0.276 (0.352)	0.221 (0.335)	2.802** (1.405)
interaction with high-tech					-1.790 (1.582)
Previous Revenue	0.0777 (0.0762)	-0.0179 (0.0873)	0.161* (0.0945)	0.154 (0.120)	0.0228 (0.252)
interaction with high-tech					0.606 (0.483)
Previous Profit	1.033** (0.430)	0.361 (0.309)	2.061** (0.830)	1.708** (0.791)	8.161*** (2.617)
interaction with high-tech					5.354* (2.968)
Did not apply out of Fear	-2.583*** (0.352)	-4.039*** (0.858)	-2.264*** (0.370)	-2.313*** (0.392)	-11.18*** (2.315)
interaction with high-tech					-4.006* (2.243)
Did not Meet Expected Growth				-0.112 (0.349)	0.746 (0.838)
interaction with high-tech					-6.711*** (2.279)
Future Revenue less than 5%				1.003*** (0.345)	7.311*** (2.465)
interaction with high-tech					-10.40*** (3.688)
Economic Crisis has a Significant Effect				-0.197 (0.337)	-5.619*** (1.829)
interaction with high-tech					11.85*** (3.007)
Personal Outlook in Uncertainty				-0.570 (0.369)	2.127* (1.191)
interaction with high-tech					-14.11*** (3.440)
					(1.847)
Industry F.E.s	Y	N	N	N	Y
Year F.E.s	Y	N	N	N	N
Observations	515	257	269	266	261



# Results: Two-stage analysis (first stage)

VARIABLES	(1)		(2)		(3)		(4)		(5)	
	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans
didnotapply		0.644*** (0.0713)		0.717*** (0.0883)		0.622*** (0.0880)		0.588*** (0.0740)		0.593*** (0.0738)
prev_bankloan _ratio		0.347*** (0.0908)		0.275* (0.149)		0.322** (0.126)		0.276** (0.107)		0.259** (0.109)
Constant	-0.0503 (0.440)	-1.383*** (0.0398)	-1.126 (0.961)	-1.411*** (0.0536)	-0.0162 (0.630)	-1.355*** (0.0573)	-0.351 (0.650)	-1.709*** (0.0503)	-0.215 (0.683)	-1.708*** (0.0503)
athro		1.562*** (0.158)		1.890*** (0.344)		1.578*** (0.189)		1.703*** (0.173)		1.780*** (0.202)
lnsigma		-0.382*** (0.0748)		-0.304** (0.125)		-0.423*** (0.0823)		-0.332*** (0.0808)		-0.326*** (0.0889)
Observations	3,150	3,150	1,626	1,626	1,524	1,524	2,936	2,936	2,936	2,936



# Results: Two-stage analysis (objective)

VARIABLES	(1)		(2)		(3)		(4)		(5)	
	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans
high_credscore	0.00125 (0.0460)		0.00219 (0.0553)		-0.0250 (0.0655)		-0.0269 (0.0656)		-0.0611 (0.0721)	
prev_revenue	-0.0239 (0.0197)		0.00334 (0.0344)		-0.0266 (0.0188)		-0.0283 (0.0201)		-0.0216 (0.0206)	
prev_netprofitloss	0.0197 (0.102)		0.343** (0.161)		-0.0670 (0.0839)		-0.0544 (0.0849)		-0.0921 (0.0840)	
prev_intp_d	-0.158*** (0.0555)		-0.205** (0.0972)		-0.134** (0.0642)		-0.143** (0.0642)		-0.147** (0.0690)	
ppe_ratio	0.000390 (0.0760)		0.0590 (0.0882)		0.0513 (0.0990)		0.0334 (0.101)		0.0287 (0.109)	
rd_emp	-0.151*** (0.0472)		-0.172* (0.101)		-0.160*** (0.0588)		-0.175*** (0.0612)		-0.161** (0.0656)	
tradecredit	0.0659 (0.0501)		-0.0333 (0.0639)		0.190*** (0.0609)		0.201*** (0.0612)		0.198*** (0.0593)	
ln_emp	0.0144 (0.0343)		0.0171 (0.0521)		0.0443 (0.0400)		0.0547 (0.0401)		0.0607 (0.0402)	
ln_assets	-0.0258 (0.0487)		-0.179* (0.105)		0.0371 (0.0333)		0.0289 (0.0345)		0.0286 (0.0370)	
prev_insiderfinancing_ratio	-0.251** (0.114)		-0.170 (0.153)		-0.335** (0.139)		-0.367*** (0.130)		-0.324** (0.131)	
has_bus_ocurd	-0.140*** (0.0464)		-0.102 (0.0636)		-0.245*** (0.0690)		-0.236*** (0.0740)		-0.226*** (0.0746)	
has_bus_cline	0.0604 (0.0473)		0.108* (0.0598)		0.0688 (0.0700)		0.0549 (0.0714)		0.0678 (0.0732)	



# Results: Two-stage analysis (behavioral)

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VARIABLES	(1)		(2)		(3)		(4)		(5)	
	always_approved	new loans	always_approved	new loans	always_approved	new loans	always_approved	new loans	always_approved	new loans
expected_growth							0.0697		0.0670	
							(0.0679)		(0.0728)	
future_revenue							-0.0317		-0.0472	
							(0.0698)		(0.0748)	
economy_effect							-0.0463		-0.0394	
							(0.0664)		(0.0722)	
personal_outlook							0.0190		0.0335	
							(0.0821)		(0.0937)	
help_out							0.00164		-0.0201	
							(0.0568)		(0.0623)	
highXdidnotapply									-0.222*	
									(0.129)	
highXhigh_credit									0.499***	
									(0.192)	
highXpre_rev									-0.0825**	
									(0.0356)	
highXpre_prof									0.648***	
									(0.208)	
highXpre_int									0.0262	
									(0.187)	
highXexpect									0.237	
									(0.159)	
highXfuture									0.316**	
									(0.159)	
highXeconomy									-0.00628	
									(0.166)	
highXpers_out									-0.0297	
									(0.179)	
highXhelp_out									0.0575	
									(0.141)	

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# Conclusions

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- ▶ Window into impact of financial crisis on access to bank loans by young firms
  - ▶ Pre-crisis v. post-crisis
- ▶ Kauffman Firm Survey firms
  - ▶ Crisis hits in critical window of new/young firm lifecycle
  - ▶ Understanding the impact of financial shock at key point
- ▶ Key results:
  - ▶ Bank loan facilitates new firm innovation
  - ▶ Optimism as novel instrument
    - ▶ Interesting in own right
  - ▶ Experience (+) related to innovation
    - ▶ Prior knowledge (Shah and Smith, 2010)



# Policy Implications

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- ▶ Access to financial resources in turbulent economy
- ▶ Relationship between information transparency and entrepreneurs' ability to secure adequate financial capital
  - ▶ Tangible assets
  - ▶ Credit scores
- ▶ High-tech industries in particular
  - ▶ Intellectual capital
  - ▶ Implications for innovation and economic growth



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- ▶ Thank you!
  - ▶ Work in progress...
    - ▶ Comments most welcome
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# Results: Loan Demand (controls)

	All Years	2007	2008	2008	2008
Previous Revenue	0.0598* (0.0346)	0.0734 (0.0580)	0.0534 (0.0415)	0.0525 (0.0418)	0.0755 (0.0472)
interaction with high-tech					-0.0925 (0.0730)
Previous Profit	0.0228 (0.110)	0.00840*** (0.00245)	0.0332 (0.143)	0.0331 (0.145)	-0.102 (0.237)
interaction with high-tech					0.294 (0.291)
Log(Emp)	0.00745 (0.0480)	0.00528 (0.0634)	0.0149 (0.0678)	0.0157 (0.0680)	0.00827 (0.0704)
Log(Assets)	0.156	0.0343	0.296**	0.275*	0.257*
Black	-0.123 (0.158)	-0.111 (0.211)	-0.0744 (0.240)	-0.138 (0.254)	-0.176 (0.266)
Female	0.0505 (0.0975)	-0.0266 (0.138)	0.145 (0.133)	0.163 (0.136)	0.208 (0.136)
Hours Worked by Owner	0.00143 (0.00184)	0.00254 (0.00274)	-0.000419 (0.00250)	-0.000628 (0.00253)	5.34e-05 (0.00259)
Owner Age	-0.0213 (0.0242)	-0.0105 (0.0346)	-0.0363 (0.0347)	-0.0351 (0.0350)	-0.0315 (0.0358)
Age <sup>2</sup>	0.000106 (0.000257)	-3.97e-06 (0.000371)	0.000231 (0.000366)	0.000221 (0.000370)	0.000189 (0.000379)
College Degree	0.259*** (0.0918)	0.366*** (0.126)	0.116 (0.130)	0.101 (0.131)	0.0924 (0.134)
Graduate Degree	0.183 (0.116)	0.237 (0.161)	0.129 (0.166)	0.133 (0.169)	0.113 (0.174)
Work Experience	0.00303 (0.00444)	-0.000655 (0.00576)	0.00565 (0.00641)	0.00712 (0.00658)	0.00823 (0.00678)
Previous Startup	0.135* (0.0805)	0.143 (0.115)	0.126 (0.114)	0.140 (0.116)	0.135 (0.116)
Comparative Advantage	0.0498 (0.0886)	-0.00303 (0.125)	0.0993 (0.124)	0.0743 (0.126)	0.0745 (0.127)
Product	0.0571 (0.0926)	0.0816 (0.120)	-0.0127 (0.123)	-0.0130 (0.124)	0.0336 (0.131)
Home base	0.0685 (0.0867)	-0.0104 (0.121)	0.195 (0.121)	0.214* (0.120)	0.207 (0.129)
High Tech	0.259* (0.135)	0.0990 (0.153)	0.232 (0.193)	0.254 (0.192)	0.179 (0.519)
Multiple Owners	0.227*** (0.0846)	0.271** (0.117)	0.202 (0.124)	0.187 (0.124)	0.164 (0.125)
Corporate Form	0.124 (0.0853)	-0.0319 (0.120)	0.321*** (0.120)	0.316*** (0.121)	0.307*** (0.123)
Rural	0.190* (0.101)	-0.00934 (0.142)	0.362** (0.143)	0.397*** (0.144)	0.434*** (0.146)
Outside Help				0.192* (0.113)	0.190 (0.121)
interaction with high-tech					0.307 (0.340)
Constant	-1.351** (0.572)	-1.392* (0.782)	-1.272 (0.793)	-1.387* (0.799)	-1.611* (0.831)
Industry F.E.s	Y	N	N	N	Y
Year F.E.s	Y	N	N	N	N
Observations	2,329	1,170	1,159	1,149	1,149



# Results: Loan Approval (controls)

VARIABLES	(1)	(2)	(3)	(4)	(5)
	All Years Approved	2007 Approved	2008 Approved	2008 Approved	2008 Approved
Black	-0.263 (0.600)	1.217 (0.895)	-0.476 (0.870)	-0.191 (0.860)	-7.875*** (2.749)
Female	-0.912*** (0.273)	-1.433** (0.648)	-0.987*** (0.336)	-1.030*** (0.328)	-0.996 (1.143)
Hours Worked by Owner	-0.0176*** (0.00566)	-0.0192* (0.0101)	-0.0225*** (0.00835)	-0.0247*** (0.00759)	-0.0247 (0.0228)
Owner Age	-0.0205 (0.0849)	-0.0182 (0.127)	-0.281** (0.136)	-0.310** (0.140)	-0.471 (0.400)
Age^2	6.20e-05 (0.000967)	-0.000108 (0.00136)	0.00329** (0.00156)	0.00355** (0.00162)	0.00491 (0.00464)
College Degree	0.0878 (0.282)	0.653 (0.505)	0.266 (0.359)	0.228 (0.337)	2.431** (1.169)
Graduate Degree	-0.377 (0.393)	-0.225 (0.531)	0.0153 (0.471)	-0.134 (0.511)	1.215 (0.872)
Work Experience	0.0185 (0.0127)	0.0174 (0.0247)	0.0126 (0.0177)	0.0236 (0.0177)	0.112** (0.0477)
Previous Startup	0.323 (0.262)	0.670 (0.504)	0.0252 (0.287)	0.145 (0.310)	3.073*** (0.994)
Comparative Advantage	0.217 (0.258)	0.977* (0.529)	-0.103 (0.307)	-0.0211 (0.333)	1.414*** (0.500)
Product	0.799*** (0.304)	0.876** (0.441)	0.557 (0.349)	0.506 (0.378)	4.944*** (1.289)
Home base	0.743** (0.298)	0.897 (0.610)	0.865** (0.383)	0.660* (0.375)	4.643*** (1.156)
High Tech	-1.815*** (0.410)	-2.410*** (0.542)	-0.609 (0.464)	-0.709 (0.467)	0.0799 (2.814)
Multiple Owners	0.424* (0.246)	0.359 (0.389)	0.549 (0.351)	0.584 (0.377)	1.271 (0.796)
Corporate Form	0.405* (0.239)	0.0411 (0.367)	1.006*** (0.327)	1.001*** (0.331)	5.682*** (1.234)
Outside Help				0.0975 (0.303)	1.602** (0.663)
interaction with high-tech					3.729**
Constant	2.518 (1.829)	3.632 (2.913)	7.729*** (2.779)	8.397*** (3.022)	8.185 (7.907)
Industry F.E.s	Y	N	N	N	Y
Year F.E.s	Y	N	N	N	N
Observations	515	257	269	266	261



# Results: Two-stage analysis (controls)

VARIABLES	(1)		(2)		(3)		(4)		(5)	
	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans	always_approv ed	new loans
black	-0.303*** (0.101)		-0.345*** (0.111)		-0.325** (0.134)		-0.357** (0.150)		-0.257 (0.161)	
female	-0.0206 (0.0569)		0.0123 (0.0667)		-0.0237 (0.0699)		-0.0333 (0.0672)		-0.0473 (0.0716)	
hours_own	-0.00259** (0.00108)		-0.00118 (0.00137)		-0.00504*** (0.00141)		-0.00524*** (0.00144)		-0.00583*** (0.00152)	
age_own	-0.00285 (0.0174)		0.0406 (0.0388)		-0.0117 (0.0246)		-0.0101 (0.0247)		-0.0152 (0.0257)	
agesq	9.81e-05 (0.000188)		-0.000409 (0.000429)		0.000189 (0.000262)		0.000170 (0.000274)		0.000227 (0.000274)	
colldeg	-0.00496 (0.0479)		0.0170 (0.0647)		0.00634 (0.0598)		-0.00714 (0.0573)		-0.0109 (0.0569)	
high_exp	0.110** (0.0505)		0.0147 (0.0621)		0.117* (0.0665)		0.113* (0.0650)		0.0967 (0.0656)	
startup	-0.132*** (0.0422)		-0.0324 (0.0556)		-0.199*** (0.0558)		-0.203*** (0.0541)		-0.208*** (0.0552)	
compadv_0	-0.0226 (0.0472)		-0.119** (0.0555)		0.0821 (0.0635)		0.0800 (0.0618)		0.0568 (0.0604)	
product_0	0.114** (0.0484)		0.0834 (0.0619)		0.0893 (0.0764)		0.0902 (0.0775)		0.0958 (0.0801)	
homebase_0	0.0680 (0.0516)		0.0372 (0.0647)		0.147* (0.0754)		0.163** (0.0792)		0.155* (0.0797)	
hightech_0	-0.122 (0.0760)		-0.239*** (0.0792)		-0.0132 (0.0757)		-0.0316 (0.0756)		-0.407** (0.203)	
prev_team	-0.0268 (0.0501)		0.0348 (0.0624)		-0.154** (0.0695)		-0.161** (0.0675)		-0.161** (0.0687)	
prev_corp	0.0490 (0.0508)		-0.0292 (0.0825)		0.189*** (0.0637)		0.192*** (0.0668)		0.217*** (0.0703)	
rural	0.0528 (0.0526)		-0.0223 (0.0740)		0.0877 (0.0663)		0.102 (0.0633)		0.109 (0.0665)	
_year_2008	-0.0696 (0.0457)									



# Implications for innovation

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- ▶ debt financing and equity financing have different implications (Schmidt, 2003; Ueda, 2004; Winton & Yerramilli, 2008)
- ▶ Debt: secure adequate funds while retaining full control rights (Berger & Udell, 1998)
  - ▶ bank financing key for new firm formation and growth in the aggregate (Black & Strahan, 2002; Hellmann, Lindsey, & Puri, 2008; Kerr & Nanda, 2009)
  - ▶ For new high-technology ventures evidence mixed and fairly scant
- ▶ Equity: smooth risk but give up control
  - ▶ strongly linked to innovation, IPOs, long run economic growth, etc. (Brown, Fazzari, & Petersen, 2009; Gompers & Lerner, 2003; Kortum & Lerner, 2000)