

# Innovation for Innovators: The Financing of Intangibles Online Appendix\*

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\*The final matching key between Compustat and SDC is available upon request.

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**Table 1: Summary Statistics: Observations and averages of key variables**

	Obs.	# Firms	Firm Characteristics						Securities Characteristics			
			Int Know.	Int Org.	Num Patents	Mkt Patents	Sales	Lev.	Iss Old	Iss New	Proc Old	Proc New
All	46,447	17,925	83.8	169.9	25.8	720.8	4,875	0.27	0.8	0.2	119.7	61.6
Non-matched	21,495	9,586	22.2	70.9	5.7	119.1	2,189	0.28	-	-	-	-
Matched												
- Only Old	17,628	6,477	34.0	74.2	10.1	136.9	1,567	0.23	0.9	-	67.2	-
- Some New	7,324	1,862	384.3	690.6	122.7	3,891.7	20,723	0.31	3.1	1.2	597.0	391.0

Notes: Statistics are reported by pooling together firm  $\times$  period observations in our sample of Compustat firms, with periods consisting of 5-year blocks. The non-matched firms are those that have not been matched to any security issuance in the SDC data within the 1985-2014 sample period. The last two lines classify matched issuer-firms and their issuances into two groups of firms: those who only issue old securities types and those who have ever issued a new security type within the sample period. Other than leverage  $((DLC+DLTT)/AT)$ , all the aforementioned variables are expressed in millions of real USD (Jan 2000 CPIAUCNS). Issuances characteristics report the average number of issuances and total proceeds of old and new security types in the pooled firms  $\times$  period panel. Before computing sample averages we aggregate variables at the firm  $\times$  period level by computing the within-period annual average for stock variables and ratios and the analogous sum for flow variables.

**Table 2: Adoption of New Securities: Additional Variables**

	(1)	(2)	(3)	(4)	(5)	(6)
Log(sales)	0.024*** (0.003)	0.024*** (0.003)	0.016*** (0.003)	0.039*** (0.005)	0.039*** (0.005)	0.026*** (0.004)
N	44,877	44,861	39,513	24,572	24,571	22,993
r2	0.132	0.132	0.515	0.196	0.196	0.495
Log(assets)	0.029*** (0.003)	0.029*** (0.003)	0.019** (0.005)	0.051*** (0.005)	0.058*** (0.008)	0.027** (0.007)
N	46,349	44,861	39,513	24,943	24,571	22,993
r2	0.138	0.143	0.516	0.211	0.216	0.496
Log(S&GA)	0.032*** (0.005)	0.034*** (0.005)	0.021*** (0.004)	0.050*** (0.007)	0.049*** (0.008)	0.034*** (0.007)
N	41,046	39,561	34,390	22,025	21,679	20,080
r2	0.144	0.149	0.515	0.204	0.207	0.497
Log(R&D)	0.028*** (0.004)	0.020*** (0.004)	0.013** (0.003)	0.039*** (0.006)	0.027*** (0.006)	0.019** (0.005)
N	21,062	20,402	17,565	12,362	12,110	11,109
r2	0.155	0.163	0.494	0.202	0.210	0.479
Log(Cites)	0.033*** (0.004)	0.020*** (0.002)	0.011** (0.003)	0.037*** (0.004)	0.021*** (0.001)	0.014** (0.004)
N	11,952	11,790	9,889	8,809	8,697	7,536
r2	0.232	0.264	0.552	0.261	0.302	0.540
Log(Scope)	0.023*** (0.004)	0.010** (0.003)	0.008* (0.003)	0.025*** (0.004)	0.014** (0.004)	0.010 (0.005)
N	32,583	32,174	28,854	21,297	21,103	19,176
r2	0.122	0.182	0.536	0.160	0.227	0.517
R&D-to-Assets	-0.000* (0.000)	0.000** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	0.000** (0.000)	-0.000 (0.000)
N	46,349	44,861	39,513	24,943	24,571	22,993
r2	0.072	0.132	0.515	0.133	0.197	0.495
S&GA-to-Sales	-0.000** (0.000)	0.000** (0.000)	0.000 (0.000)	-0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)
N	21,062	20,402	17,565	12,362	12,110	11,109
r2	0.155	0.163	0.494	0.202	0.210	0.479
Intangible-to-Assets	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000*** (0.000)	0.000** (0.000)	-0.000 (0.000)
N	46,346	44,859	39,513	24,943	24,571	22,993
r2	0.072	0.132	0.515	0.133	0.196	0.495
Period fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm-period controls	No	Yes	Yes	No	Yes	Yes
Firm fixed-effects	No	No	Yes	No	No	Yes
Sample	All	All	All	Matched	Matched	Matched

Notes: The table reports the summary results of regressions using the linear probability model in equation (1) using different measures of intangible capital (in logs) as main explanatory variable on each row and where the binary outcome represents the issuance of new security types. Columns (1)-(3) are estimated for the entire sample, and columns (4)-(6) for the sample of matched firms that issued at least a security during the sample period. Columns (2), (3), (5) and (6) include size and leverage as control variables, with leverage measured as the ratio of total debt to assets and size measured as log-sales. Reported standard errors in parenthesis clustered by time period, with p-values summarized by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 3: Adoption of New Securities: Poisson Specification**

	(1)	(2)	(3)	(4)	(5)	(6)
IntKnowledge	0.392*** (0.018)	0.158*** (0.018)	0.073*** (0.026)	0.557*** (0.031)	0.118*** (0.019)	0.073*** (0.026)
N	20,683	19,948	3,285	12,039	11,777	3,285
IntOrganization	0.494*** (0.020)	0.220*** (0.057)	-0.063 (0.040)	0.688*** (0.030)	0.168** (0.068)	-0.063 (0.040)
N	20,683	19,948	3,285	12,039	11,777	3,285
NumPatents	0.330*** (0.024)	0.063*** (0.018)	0.085** (0.034)	0.461*** (0.025)	0.035** (0.016)	0.085** (0.034)
N	11,167	11,005	2,730	8,372	8,263	2,730
MktPatents	0.285*** (0.016)	0.107** (0.026)	0.102*** (0.028)	0.414*** (0.022)	0.075*** (0.027)	0.102*** (0.028)
N	11,167	11,005	2,730	8,372	8,263	2,730
Log(sales)	0.439*** (0.030)	0.711*** (0.023)	0.542*** (0.031)	0.638*** (0.028)	0.638*** (0.028)	0.542*** (0.031)
N	42,407	42,411	7,088	23,536	23,536	7,088
Log(assets)	0.506*** (0.025)	0.551*** (0.047)	0.355*** (0.052)	0.708*** (0.024)	0.641*** (0.040)	0.355*** (0.052)
N	43,854	42,411	7,088	23,904	23,536	7,088
Log(S&GA)	0.513*** (0.020)	0.275*** (0.063)	0.159* (0.084)	0.647*** (0.034)	0.206*** (0.064)	0.159* (0.084)
N	38,653	37,206	5,833	21,017	20,675	5,833
Log(R&D)	0.476*** (0.028)	0.418*** (0.049)	0.179** (0.088)	0.687*** (0.041)	0.327*** (0.046)	0.179** (0.088)
N	19,512	18,869	2,944	11,727	11,478	2,944
Log(Cites)	0.281*** (0.024)	0.035*** (0.012)	0.021 (0.022)	0.378*** (0.025)	0.006 (0.012)	0.021 (0.022)
N	10,909	10,753	2,667	8,185	8,077	2,667
Log(Scope)	0.315*** (0.022)	0.158*** (0.060)	0.043 (0.096)	0.317*** (0.046)	0.162*** (0.060)	0.043 (0.096)
N	30,571	30,179	6,133	20,274	20,082	6,133
R&D-to-Assets	-0.002*** (0.001)	0.002*** (0.000)	-0.001 (0.002)	-0.006*** (0.000)	0.001*** (0.000)	-0.001 (0.002)
N	43,854	42,411	7,088	23,904	23,536	7,088
S&GA-to-Sales	-0.000 (0.000)	0.000*** (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000*** (0.000)	0.000 (0.000)
N	42,414	42,411	7,088	23,539	23,536	7,088
Intangible-to-Assets	-0.003*** (0.001)	0.000 (0.000)	-0.000 (0.002)	-0.005*** (0.001)	0.000 (0.000)	-0.000 (0.002)
N	43,851	42,409	7,088	23,904	23,536	7,088
Period fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm-period controls	No	Yes	Yes	No	Yes	Yes
Firm fixed-effects	No	No	Yes	No	No	Yes
Sample	All	All	All	Matched	Matched	Matched

Notes: The table reports the summary results of regressions using the linear probability model in equation (1) using different measures of intangible capital (in logs) as main explanatory variable on each row and where the binary outcome represents the issuance of new security types. Columns (1)-(3) are estimated for the entire sample, and columns (4)-(6) for the sample of matched firms that issued at least a security during the sample period. Columns (2), (3), (5) and (6) include size and leverage as control variables, with leverage measured as the ratio of total debt to assets and size measured as log-sales. Reported standard errors in parenthesis clustered by time period, with p-values summarized by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 4: Adoption of New Securities: Lagged Specification**

	(1)	(2)	(3)	(4)	(5)	(6)
IntKnowledge	0.029*** (0.004)	0.016*** (0.003)	0.002 (0.002)	0.039*** (0.004)	0.022*** (0.003)	-0.002 (0.001)
N	14,009	13,658	11,503	8,454	8,298	7,182
r2	0.180	0.200	0.544	0.226	0.245	0.522
IntOrganization	0.040*** (0.006)	0.036*** (0.007)	-0.014 (0.007)	0.050*** (0.007)	0.041*** (0.008)	-0.027** (0.009)
N	14,009	13,658	11,503	8,454	8,298	7,182
r2	0.199	0.202	0.544	0.242	0.245	0.523
NumPatents	0.051*** (0.004)	0.032*** (0.003)	0.007 (0.004)	0.056*** (0.004)	0.032*** (0.003)	0.005 (0.005)
N	9,209	9,082	7,387	6,757	6,674	5,605
r2	0.267	0.288	0.600	0.296	0.321	0.582
MktPatents	0.038*** (0.004)	0.029*** (0.003)	0.014*** (0.003)	0.044*** (0.004)	0.033*** (0.003)	0.015** (0.004)
N	9,209	9,082	7,387	6,757	6,674	5,605
r2	0.293	0.299	0.601	0.324	0.333	0.583
Log(sales)	0.028*** (0.004)	0.028*** (0.004)	0.003 (0.004)	0.042*** (0.005)	0.042*** (0.005)	-0.001 (0.006)
N	27,813	27,810	23,229	16,363	16,363	14,097
r2	0.152	0.152	0.572	0.214	0.214	0.545
Log(assets)	0.036*** (0.005)	0.044*** (0.006)	0.019 (0.010)	0.056*** (0.007)	0.077*** (0.011)	0.027 (0.015)
N	28,444	27,810	23,229	16,593	16,363	14,097
r2	0.164	0.170	0.572	0.232	0.241	0.546
Log(S&GA)	0.036*** (0.006)	0.036*** (0.006)	0.001 (0.007)	0.051*** (0.008)	0.046*** (0.009)	-0.005 (0.010)
N	24,907	24,283	19,940	14,542	14,328	12,169
r2	0.160	0.167	0.560	0.212	0.219	0.537
Log(R&D)	0.034*** (0.005)	0.023*** (0.005)	0.002 (0.003)	0.043*** (0.006)	0.029*** (0.006)	-0.002 (0.005)
N	13,211	12,881	10,486	8,217	8,061	6,807
r2	0.183	0.190	0.541	0.223	0.231	0.522
Log(Cites)	0.037*** (0.003)	0.022*** (0.002)	0.003 (0.002)	0.041*** (0.003)	0.022*** (0.002)	0.002 (0.002)
N	9,082	8,959	7,271	6,675	6,593	5,531
r2	0.250	0.282	0.601	0.279	0.316	0.583
Log(Scope)	0.023*** (0.005)	0.008** (0.002)	0.008 (0.004)	0.022** (0.005)	0.010** (0.002)	0.011 (0.006)
N	21,527	21,343	17,888	14,076	13,980	11,941
r2	0.143	0.210	0.577	0.180	0.254	0.554
R&D-to-Assets	-0.000*** (0.000)	0.000*** (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000*** (0.000)	0.000 (0.000)
N	28,444	27,810	23,229	16,593	16,363	14,097
r2	0.093	0.152	0.572	0.152	0.215	0.545
S&GA-to-Sales	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
N	27,817	27,810	23,229	16,366	16,363	14,097
r2	0.096	0.153	0.572	0.154	0.216	0.545
Intangible-to-Assets	-0.000*** (0.000)	0.000* (0.000)	-0.000 (0.000)	-0.000* (0.000)	0.000* (0.000)	-0.000** (0.000)
N	28,444	27,810	23,229	16,593	16,363	14,097
r2	0.093	0.152	0.572	0.152	0.214	0.545
Period fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm-period controls	No	Yes	Yes	No	Yes	Yes
Firm fixed-effects	No	No	Yes	No	No	Yes
Sample	All	All	All	Matched	Matched	Matched

Notes: The table reports the summary results of regressions using the linear probability model in equation (1) using different measures of intangible capital (in logs) as main explanatory variable on each row and where the binary outcome represents the issuance of new security types. Columns (1)-(3) are estimated for the entire sample, and columns (4)-(6) for the sample of matched firms that issued at least a security during the sample period. Columns (2), (3), (5) and (6) include size and leverage as control variables, with leverage measured as the ratio of total debt to assets and size measured as log-sales. Reported standard errors in parenthesis clustered by time period, with p-values summarized by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .