TABLE A-1A DETERMINANTS OF FIRM R&D TO SALES RATIOS:

Tobit Estimates — Number of obs = 2215
chi2(13) =1393.98
Prob > chi2 = 0.0000
Log Likelihood = -6289.763 — Pseudo R2 = 0.0998

RDtoSale	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
foundry	-2.887669	.3762452	-7.675	0.000	-3.625501	-2.149836
autoPart	-1.796494	.3837902	-4.681	0.000	-2.549122	-1.043865
textiles	-2.612659	.3968744	-6.583	0.000	-3.390946	-1.834372
GAP	.8609121	.1746131	4.930	0.000	.5184885	1.203336
domcomp	-.2951938	.1120368	-2.635	0.008	-.5149026	-.0754851
sharedom	-.2554225	.1145096	-2.231	0.026	-.4799806	-.0308643
shrdomI	-.7731863	.1589395	-4.865	0.000	-1.084873	-.4614993
work50I	2.110861	1.445713	1.460	0.144	-.7242423	4.945964
shrdomK	.5587092	.1072004	5.212	0.000	.3484846	.7689337
sharexp	.0173473	.0042286	4.102	0.000	.0090549	.0256398
wrldlead	1.219563	.1456347	8.374	0.000	.9339668	1.505158
engOrSci	.4299371	.2748565	1.564	0.118	-.1090679	.9689421
trainShr	1.082835	.0278851	38.832	0.000	1.028151	1.137519
_cons	-1.050538	.7409666	-1.418	0.156	-2.503604	.4025286
_se	5.616407	.0908992	(Ancillary parameter)			

Obs. summary: 278 left-censored observations at RDtoSalN<=0
1937 uncensored observations

Notes: The variables "shrdomI" and "shrdomK" are interaction terms between domestic market share and the India and Korea dummies respectively.

TABLE A-2A EXPLAINING THE INTENSITY OF DOMESTIC COMPETITION

Tobit Estimates — Number of obs = 2483; chi2(11) = 189.93; Prob > chi2 = 0.0000; Log Likelihood = -3796.3841; Pseudo R2 = 0.0244

domcomp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
workers2	.0838446	.033134	2.530	0.011	.0188714	.1488179
workSQ	-.0029374	.001781	-1.649	0.099	-.0064298	.0005551
textiles	.5235653	.1100686	4.757	0.000	.3077292	.7394013
polymers	.5066691	.1319405	3.840	0.000	.2479439	.7653943
pharmece	.589889	.2013668	2.929	0.003	.1950239	.984754
medsize	.3693775	.0722253	5.114	0.000	.2277492	.5110059
RDtoSalN	-.0176521	.0048368	-3.650	0.000	-.0271366	-.0081675
sharedom	-.1500362	.0299626	-5.007	0.000	-.2087906	-.0912817
japan	.501281	.0995121	5.037	0.000	.3061452	.6964167
shrdomI	-.1424808	.0407144	-3.500	0.000	-.2223186	-.062643
shrdomK	.2058557	.0320158	6.430	0.000	.1430752	.2686362
_cons	4.11051	.0964642	42.612	0.000	3.921351	4.299669
_se	1.622115	.032568	(Ancillary parameter)			

Obs. summary: 109 left-censored observations at domcomp<=1
536 uncensored observations
838 right-censored observations at domcomp>=5

TABLE A-2B: EXPLAINING EXPORT PROPENSITY

Tobit Estimates — Number of obs = 1656; chi2(14) = 501.78; Prob > chi2 = 0.0000; Log Likelihood = -6059.2203; Pseudo R2 = 0.0398

sharexp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
india	-617.2108	361.1315	-1.709	0.088	-1325.538	91.11597
taiwan	74.75586	8.710193	8.583	0.000	57.6716	91.84012
japan	-12.66497	2.590811	-4.888	0.000	-17.74661	-7.583328
foundry	-13.39388	2.676104	-5.005	0.000	-18.64282	-8.144944
pharmece	-10.3419	5.449703	-1.898	0.058	-21.031	.3471978
software	-24.11814	3.335426	-7.231	0.000	-30.66027	-17.576
SME	-10.64827	2.349763	-4.532	0.000	-15.25712	-6.039418
shareIND	-23.30781	12.27236	-1.899	0.058	-47.37894	.7633191
shareINS	3.427825	2.097585	1.634	0.102	-.6863992	7.54205
shareTAI	-32.16333	7.333052	-4.386	0.000	-46.54645	-17.78021
shareTAS	3.755604	1.467021	2.560	0.011	.8781752	6.633032
medsizeT	15.36619	4.036821	3.807	0.000	7.448333	23.28405
work50T	-13.39819	5.330087	-2.514	0.012	-23.85267	-2.943704
establI	.332253	.1822652	1.823	0.068	-.0252438	.6897498
_cons	19.11284	2.160627	8.846	0.000	14.87497	23.35072
_se	33.18744	.7252082	(Ancillary parameter)			

Obs. summary: 483 left-censored observations at sharexp<=0
1153 uncensored observations
20 right-censored observations at sharexp>=100

Notes: The variables "shareIND" and "shareTAI" are interaction terms between domestic market share and the India and Taiwan dummies respectively, while the "shareINS" and "shareTAS" variables are the square of these interaction terms. The variable "estabI" is an interaction term between the respondent's date of establishment and the dummy for India.

TABLE A-3A: USE OF EXTERNAL TECHNOLOGY SOURCES

Logit Estimates — Number of obs = 667; chi2(10) = 179.88; Prob > chi2 = 0.0000; Log Likelihood = -215.10095; Pseudo R2 = 0.2948

external	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	14.08749	5.45768	6.828	0.000	6.592752	30.10235
workers2	1.826625	.3256688	3.379	0.001	1.28792	2.590658
trainShr	.9386379	.0304218	-1.954	0.051	.8808665	1.000198
medtra	1.509555	.3335573	1.864	0.062	.9789576	2.327736
SWK2	.7311289	.0630779	-3.630	0.000	.6173861	.8658268
SEKG	1.040491	.017269	2.392	0.017	1.007189	1.074895
frmdptJ	.0867312	.0560874	-3.781	0.000	.0244186	.308057
SWJ	2.945027	1.043759	3.048	0.002	1.470319	5.898845
SEJ2	.9992694	.000327	-2.234	0.026	.9986288	.9999105
shareINS	1.134315	.0618584	2.311	0.021	1.019329	1.262271

Note: 0 failures and 3 successes completely determined.
Note (2) "medtra" is an interaction term between the ratio of the respondent's training outlays to sales and the dummy variable for whether the firm is medium sized. "SWK2" is an interaction term between the square of world market share and the dummy variable for Korea. "SEKG" is an interaction term between three variables: the respondent's export intensity; the gap ("GAP") for the respondent between its technological ranking domestically and compared to the world leaders in its industry; and the dummy variable for Korea. "frmdptJ" is an interaction term between whether the respondent has made use of an in-house department for developing new products or processes and the dummy variable for Japan. "SWJ" is an interaction term between the respondent's share of the world market and the dummy variable for Japan. "SEJ2" is an interaction term between the respondent's export intensity squared and the dummy variable for Japan. "shareINS" is an interaction term between the respondent's share of the domestic market squared and the dummy variable for India.

TABLE A-5A: USE OF LONG-TERM CUSTOMERS

Logit Estimates — Number of obs = 1033; chi2(8) = 241.97; Prob > chi2 = 0.0000; Log Likelihood = -574.96093; Pseudo R2 = 0.1738

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	9.291036	1.556285	13.307	0.000	6.6909	12.90161
korea	.6342371	.1284466	-2.248	0.025	.426447	.9432746
frmdptJ	.3479489	.0912065	-4.027	0.000	.2081581	.5816178
autPartJ	2.660304	.9827583	2.649	0.008	1.289686	5.487551
foundryJ	2.506889	1.046881	2.201	0.028	1.105788	5.683272
shareINS	.9576294	.0175327	-2.365	0.018	.9238753	.9926167
work90pc	.4449977	.1049805	-3.432	0.001	.280252	.7065891
GAP	1.21019	.1166919	1.979	0.048	1.001791	1.461942

Notes: "GAP" refers to the gap between the respondent's assessment of it domestic and world technological ranking.

TABLE A-5B: USE OF LONG-TERM CUSTOMERS:CHINA

Logit Estimates — Number of obs = 49; chi2(4) = 17.81; Prob > chi2 = 0.0013; Log Likelihood = -18.372987; Pseudo R2 = 0.3264

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	19124.61	107242.6	1.758	0.079	.3224181	1.13e+09
sharexp	1.075436	.0486138	1.609	0.108	.9842532	1.175065
wrldcomp	2.495452	1.05148	2.170	0.030	1.092668	5.699154
RDtoSale	1.89966	.7199907	1.693	0.090	.903778	3.992915

TABLE A-5C: USE OF LONG-TERM CUSTOMERS:KOREA

Logit Estimates — Number of obs = 150; chi2(5) = 43.37; Prob > chi2 = 0.0000; Log Likelihood = -82.286853; Pseudo R2 = 0.2086

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	3.374163	1.531591	2.679	0.007	1.386088	8.213745
trainShr	1.201256	.1054522	2.089	0.037	1.011376	1.426784
work50	.4437817	.2392971	-1.507	0.132	.1542348	1.276899
medsize	.3784592	.1706062	-2.155	0.031	.1564245	.9156585
expor	1.028016	.0128738	2.206	0.027	1.003091	1.05356

Note(1): 0 failures and 1 success completely determined.
Note(2): "expor" is an interaction variable between export revenues as a proportion of sales for the respondent and the dummy variable for whether the respondent is mid-sized.

TABLE A-5D: USE OF LONG-TERM CUSTOMERS:JAPAM

Logit Estimates — Number of obs = 135; chi2(7) = 34.19; Prob > chi2 = 0.0000; Log Likelihood = -74.508908; Pseudo R2 = 0.1866

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	2.236389	.9229044	1.950	0.051	.9960398	5.02132
work90pc	.1550538	.1225258	-2.359	0.018	.0329496	.7296494
cluster	.1777332	.1059014	-2.899	0.004	.0552821	.5714165
compgap	1.387743	.1600096	2.842	0.004	1.107042	1.73962
wrldcomp	1.406511	.2018096	2.377	0.017	1.061721	1.863269
techShr2	1.864424	.647083	1.795	0.073	.9443204	3.681036
trainSh2	1.178993	.1917993	1.012	0.311	.8571112	1.621755

TABLE A-5E: USE OF LONG-TERM CUSTOMERS: INDIA

Logit Estimates — Number of obs = 87; chi2(5) = 25.29; Prob > chi2 = 0.0001; Log Likelihood = -47.37513; Pseudo R2 = 0.2107

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	7.156846	3.979015	3.540	0.000	2.407002	21.27977
compgap	1.10465	.0760586	1.446	0.148	.9651988	1.264249
domcomp	.0392624	.0654697	-1.942	0.052	.0014949	1.031212
domcomS	1.505995	.3521642	1.751	0.080	.9523075	2.381605
smaexp	.9746297	.0186529	-1.343	0.179	.9387478	1.011883

Note: "smaex" is an interaction term between the ratio of export sales to revenues for the respondent and the dummy variable for firms with fewer than 50 employees. "domcompS" is the square of the firm's ranking of the intensity of competition in its domestic market.

TABLE A-5F: USE OF LONG-TERM CUSTOMERS: TAIWAN

Logit Estimates — Number of obs = 559; chi2(5) = 226.35; Prob > chi2 = 0.0000; Log Likelihood = -263.198; Pseudo R2 = 0.3007

ltcust	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
frmdpt	53.68968	25.23271	8.475	0.000	21.37219	134.8754
compgap	1.082603	.0351497	2.445	0.015	1.015857	1.153734
domcomp	1.393939	.1690671	2.738	0.006	1.099016	1.768006
medsize	16.18102	11.14239	4.043	0.000	4.196247	62.39513
medcomp	.5300995	.0943985	-3.564	0.000	.3739195	.7515134

Note: "compgap" is an interaction term between GAP as defined above and the respondent's ranking of the extent of the competition it faces on world markets. "medcomp" is an interaction term between the respondent's ranking of the extent of the competition it faces on world markets and the dummy variable for whether the respondent is medium-sized.

TABLE A-6: USE OF FOREIGN LICENSORS

Logit Estimates — Number of obs = 844; chi2(11) = 315.32; Prob > chi2 = 0.0000; Log Likelihood = -347.14986; Pseudo R2 = 0.3123

foreig	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
canada	.1173195	.036038	-6.976	0.000	.064254	.2142105
india	.4152678	.1217787	-2.997	0.003	.2337279	.7378123
foundry	.4657029	.1297608	-2.743	0.006	.2697336	.8040495
polymers	2.117272	.7581514	2.095	0.036	1.049492	4.271441
workers2	1.440927	.1719798	3.061	0.002	1.140376	1.82069
workSQ	.9766885	.0110607	-2.083	0.037	.9552488	.9986094
frmdpt	3.070179	.7120269	4.837	0.000	1.948748	4.836953
sharexp	1.011937	.003458	3.473	0.001	1.005182	1.018738
domcomp	.8571687	.0760261	-1.738	0.082	.720393	1.019913
GAP	1.715514	.1970638	4.698	0.000	1.369668	2.148687
ltvert	3.150506	.6463922	5.593	0.000	2.107359	4.710013

Note: ltvert is a dummy variable which is equal to 1 if the firm uses both long term customers and long term suppliers as sources of assistance in developing new products or processes.

TABLE A-7A: USE OF PRIVATE CONTRACT LABORATORIES

Logit Estimates — Number of obs = 887; chi2(5) = 111.52; Prob > chi2 = 0.0000; Log Likelihood = -506.96213; Pseudo R2 = 0.0991

pricon	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work50	.6924334	.1644647	-1.547	0.122	.4347136	1.102942
medsize	1.456057	.3106141	1.761	0.078	.9585075	2.211879
work90pc	2.738763	.9093006	3.035	0.002	1.428715	5.250046
frmdpt	3.417749	.5815511	7.223	0.000	2.448516	4.770648
canada	2.143495	.4167429	3.922	0.000	1.4643	3.137725

TABLE A-7B: USE OF CONSULTANTS

Logit Estimates — Number of obs = 978; chi2(6) = 157.99; Prob > chi2 = 0.0000; Log Likelihood = -566.06888; Pseudo R2 = 0.1225

consul	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work50	.3997129	.0933637	-3.926	0.000	.2528874	.6317847
medsize	1.550898	.3027231	2.248	0.025	1.057878	2.273689
work90pc	2.783275	.8488361	3.356	0.001	1.530942	5.060033
frmdpt	2.86844	.4570035	6.614	0.000	2.099091	3.919767
canada	1.793947	.3710831	2.825	0.005	1.196014	2.690811
japan	.7065948	.1231255	-1.993	0.046	.5021656	.9942461

TABLE A-8A: USE OF NATIONAL TECHNICAL INSTITUTIONS

Logit Estimates — Number of obs = 898; chi2(9) = 213.81; Prob > chi2 = 0.0000; Log Likelihood = -448.74323; Pseudo R2 = 0.1924

natech	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
canada	.3768812	.0889184	-4.136	0.000	.2373442	.5984535
korea	1.739975	.3888845	2.478	0.013	1.122792	2.696414
work90pc	3.981009	1.402151	3.922	0.000	1.996143	7.939529
frmdpt	1.629457	.3922628	2.028	0.043	1.016556	2.611888
NMfrmdp	.5498115	.1453724	-2.262	0.024	.3274558	.9231558
work50	1.048437	.2469296	0.201	0.841	.6607935	1.663484
domlead	1.319434	.1155123	3.166	0.002	1.111393	1.566418
majgovt	2.831439	1.092886	2.696	0.007	1.328796	6.033317
govtsub	1.993889	.3490221	3.942	0.000	1.414822	2.809961

Note: NMfrmdpt is a dummy variable which takes a value of 1 for medium-sized firms which do not have an in-house technical department.

TABLE A-8B: USE OF REGIONAL TECHNICAL INSTITUTIONS

Logit Estimates — Number of obs = 1004; chi2(8) = 207.88; Prob > chi2 = 0.0000; Log Likelihood = -541.39523; Pseudo R2 = 0.1611

lrtech	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
china	3.984116	1.100075	5.006	0.000	2.319008	6.844815
korea	.29695	.0751035	-4.801	0.000	.1808842	.4874902
work90pc	2.342228	.709224	2.811	0.005	1.293857	4.24006
frmdpt	3.152799	.738753	4.901	0.000	1.991799	4.990532
medsize	2.813488	.6856259	4.245	0.000	1.745073	4.536036
frmdptM	.5580582	.1804845	-1.804	0.071	.2960656	1.051892
work50J	4.690751	1.654725	4.381	0.000	2.349468	9.365159
domlead	1.156469	.0868422	1.936	0.053	.9981946	1.33984

Note: frmdptM is a dummy variable which takes a value of 1 for medium-sized firms which do have an in-house technical department.

TABLE A-8C: IMPORTANCE ATTACHED TO NATIONAL TECHNICAL INSTITUTIONS

```
Ordered Logit Estimates                           Number of obs =    325
                                                  chi2(6)       =  42.39
                                                  Prob > chi2   = 0.0000
Log Likelihood =  -454.1082                       Pseudo R2     = 0.0446

------------------------------------------------------------------------------
 natechI |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
  canada |  -1.280391   .3324028     -3.852   0.000      -1.931889   -.6288936
work90pc |   .9497087   .3511904      2.704   0.007       .2613883    1.638029
  frmdpt |  -.7998687   .3172252     -2.521   0.012      -1.421619   -.1781186
 NMfrmdp |  -.3836284   .3117546     -1.231   0.218      -.9946561    .2273994
 domlead |   .1986855   .1082015      1.836   0.066      -.0133856    .4107566
 govtsub |   .7156554   .2347556      3.049   0.002       .2555428    1.175768
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TABLE A-8D: IMPORTANCE ATTACHED TO REGIONAL TECHNICAL INSTITUTIONS

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Ordered Logit Estimates                           Number of obs =    412
                                                  chi2(5)       =  77.85
                                                  Prob > chi2   = 0.0000
Log Likelihood = -575.31778                       Pseudo R2     = 0.0634

------------------------------------------------------------------------------
 lrtechI |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
   korea |  -1.732765   .2484615     -6.974   0.000      -2.219741    -1.24579
work90pc |   1.034445   .3072353      3.367   0.001       .4322746    1.636615
  frmdpt |  -.4188532   .2079933     -2.014   0.044      -.8265125   -.0111938
 medsize |   .5191881   .2186728      2.374   0.018       .0905973     .947779
 work50J |   1.391788   .4484774      3.103   0.002       .5127881    2.270787
---------+--------------------------------------------------------------------
```

Table A-9A: Use of Educational Institutions

Logit Estimates — Number of obs = 871; chi2(6) = 287.55; Prob > chi2 = 0.0000; Log Likelihood = -430.56439; Pseudo R2 = 0.2503

unitec	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work90pc	8.408718	3.457891	5.178	0.000	3.755717	18.82638
frmdpt	1.952543	.4741612	2.755	0.006	1.213088	3.142743
frmdptM	1.745051	.4697979	2.068	0.039	1.029556	2.957783
india	.4883245	.1334584	-2.623	0.009	.2858093	.8343356
RDtoSale	1.026816	.0113775	2.388	0.017	1.004757	1.04936
extPubT	3.242298	.378961	10.064	0.000	2.578483	4.07701

Notes: frmdptM is an interaction term between frmdpt and medsize. ExtPubT is the sum of natech and lrtech.

Table A-9B: Importance of Educational Institutions

Ordered Logit Estimates — Number of obs = 275; chi2(6) = 29.40; Prob > chi2 = 0.0001; Log Likelihood = -366.15759; Pseudo R2 = 0.0386

unitecI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work90pc	.6130894	.288646	2.124	0.034	.0473536	1.178825
frmdpt	-.5641918	.2481071	-2.274	0.023	-1.050473	-.0779107
domcomp	.2066091	.1148755	1.799	0.072	-.0185428	.4317609
techstr	.0105137	.0036037	2.917	0.004	.0034506	.0175767
RDtoSale	.0367709	.0197421	1.863	0.063	-.0019228	.0754646
india	-.7348184	.3963439	-1.854	0.064	-1.511638	.0420014

Notes: techstr is an indicator of the firm's technical strength obtained by taking the sum of wrldlead and domlead, with wrldlead being weighted by the firm's export share and domlead by 1 minusthe firm's export share.

Table A-10A: Use of Academic Associations

Logit Estimates — Number of obs = 957; chi2(7) = 212.29; Prob > chi2 = 0.0000; Log Likelihood = -383.08906; Pseudo R2 = 0.2170

academ	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work90pc	4.396694	1.273979	5.111	0.000	2.491629	7.758343
engOrSci	1.266915	.2371201	1.264	0.206	.8778767	1.828358
polymers	2.075979	.6226812	2.435	0.015	1.15321	3.737122
software	1.704245	.5379743	1.689	0.091	.9179846	3.163941
electron	.2443294	.1216729	-2.830	0.005	.0920636	.6484302
work50	.2583438	.0699932	-4.996	0.000	.1519084	.4393538
natech	3.981588	.7386958	7.447	0.000	2.7678	5.72767

Table A-10B: Importance of Academic Associations

Ordered Logit Estimates — Number of obs = 298; chi2(5) = 35.23; Prob > chi2 = 0.0000; Log Likelihood = -402.71561; Pseudo R2 = 0.0419

academI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
work90pc	1.142405	.2794415	4.088	0.000	.5947094	1.6901
engOrSci	.437974	.2212657	1.979	0.048	.0043013	.8716468
electron	-.8914063	.4323057	-2.062	0.039	-1.73871	-.0441027
work50	-.8078493	.3157769	-2.558	0.011	-1.426761	-.1889378
frmdpt	-.3249851	.25367	-1.281	0.200	-.8221692	.172199