

Web Appendix to
Lock-In and Unobserved Preferences in Server Operating Systems:
A Case of Linux vs. Windows

Seung-Hyun Hong
University of Illinois
hyunhong@ad.uiuc.edu

Leonardo Rezende
PUC-Rio
lrezende@econ.puc-rio.br

This appendix contains additional tables not reported in the paper. Tables 8-11 present descriptive statistics for our main samples from the 2000-2004 panel data, as well as two additional samples from the 2000-2003 panel data and the 2001-2004 panel data. Tables 12-13 report the main estimation results using the 2000-2003 panel data and the 2001-2004 panel data. These results are similar to those from using the 2000-2004 panel data. Tables 14-15 present more detailed results from the AC method. Note that the AC results are obtained by using the sample orthogonality conditions with cells containing at least 4 observations. In Tables 14-15, we also consider different cutoffs, and each column in these tables reports the main coefficient estimates for different cutoffs. The magnitudes of the coefficient estimates for $\text{server.windows}_{t-1}$ in Panel A of Table 14 and those for $\text{server.linux}_{t-1}$ in Panel B of Table 15 are fairly similar across different cutoffs. In other panels, the main coefficient estimates seem to vary across different cutoffs. However, the magnitudes of these estimates are still considerably smaller than those from the conventional approaches reported in Tables 12-13. Therefore, our main findings would remain the same even if we use different cutoffs for the AC method. Tables 14-15 also report the number of the sample moment conditions used in our estimations. In the tables, M (or M_T) denotes the number of the moment conditions conditional on the histories up to period $T - 1$ (or T) that are observed in the data. As we increase the cutoff, M and M_T are decreased, and accordingly, the number of observations used in our estimations is also reduced. Hence, different samples with different histories are used for each cutoff, which explains why the magnitudes of the estimates vary across different cutoffs. The tables additionally report the test statistics for the over-identifying restrictions and the corresponding p -values. For most of them, we do not reject the over-identifying restrictions.

Tables 16-22 report additional results from various robustness checks. Each table presents the results for all three sets of balanced panel data. Table 16 shows the results including additional lagged dependent variables. In Table 17, we exclude firms that are likely to have performed small scale testing of operating systems. In Tables 18-21, we select only firms that are highly likely to have made decisions recurrently. Lastly, Table 22 reports the results from using relatively homogenous subsamples based on the kinds of business. All these tables show that our main findings do not change: most of the conventional approaches indicate strong positive correlations between decisions over time, but once we allow for the time-variant group-specific fixed effects, the estimated magnitude of lock-in is considerably smaller than those from most of the conventional approaches. Our estimates from the AC method do not necessarily reject the significance of lock-in, particularly for Windows, but they definitely suggest that unobserved preferences account for a substantial part of the positive correlations.

Table 8: Summary Statistics of Different Samples^a

Variable	Unbalanced	Balanced Panel		
	Panel	2000-2003	2001-2004	2000-2004
A. Shares of Operating Systems				
server.windows	0.905	0.931	0.923	0.932
server.linux	0.108	0.123	0.142	0.133
server.other	0.237	0.256	0.247	0.254
pc.windows	0.964	0.977	0.983	0.978
pc.linux	0.121	0.131	0.150	0.139
pc.other	0.078	0.086	0.069	0.077
non-pc.windows	0.040	0.047	0.049	0.046
non-pc.linux	0.006	0.005	0.007	0.005
non-pc.other	0.261	0.303	0.244	0.277
B. Firm Characteristics				
revenue (in \$million)	73.263	62.412	64.294	59.630
employees	357.390	326.555	346.541	325.387
desk.workers	166.659	149.977	161.105	149.259
internet.users	107.836	107.986	122.147	113.434
internet.developers	0.998	0.747	0.880	0.757
programmers	4.646	3.577	3.968	3.392
total.pc	256.426	244.455	279.253	251.669
total.non-pc	3.209	2.298	2.512	2.066
total.internet.server	1.336	0.942	1.123	0.937
total.network.server	8.263	7.729	8.720	8.321
total.lan	1.084	1.167	1.176	1.190
C. Kinds of Operating Systems in Servers				
windows only	0.762	0.766	0.758	0.757
linux only	0.035	0.040	0.039	0.039
other only	0.099	0.085	0.090	0.080
windows and linux	0.051	0.059	0.072	0.067
windows and other	0.119	0.147	0.123	0.144
linux and other	0.009	0.011	0.012	0.012
windows, linux, and other	0.023	0.030	0.037	0.034
#observations	223,109	44,040	50,540	36,690

^aThe table reports the mean of each variable. Unbalanced Panel includes only observations with any server operating system and with up-to-date information. Balanced Panels include balanced panel data from the Unbalanced Panel. The share is the mean of a dummy variable for whether an observation uses each operating system in the given segment.

Table 9: Changes in the Use of Operating Systems and Corresponding Computers^a

Variable	Balanced Panel 2000-2003			Balanced Panel 2001-2004			Balanced Panel 2000-2004						
	2000	2001	2002	2003	2001	2002	2003	2004	2000	2001	2002	2003	2004
server.windows	0.923	0.926	0.936	0.938	0.902	0.927	0.935	0.928	0.925	0.926	0.938	0.940	0.932
server.linux	0.081	0.111	0.140	0.159	0.111	0.141	0.165	0.152	0.084	0.117	0.147	0.166	0.153
server.other	0.283	0.262	0.246	0.234	0.270	0.254	0.243	0.220	0.290	0.267	0.251	0.241	0.219
pc.windows	0.953	0.983	0.989	0.984	0.978	0.987	0.985	0.980	0.957	0.981	0.988	0.985	0.980
pc.linux	0.072	0.125	0.151	0.175	0.114	0.149	0.172	0.165	0.073	0.126	0.153	0.175	0.166
pc.other	0.122	0.089	0.076	0.059	0.095	0.083	0.066	0.033	0.123	0.090	0.080	0.063	0.031
non-pc.windows	0.032	0.043	0.064	0.049	0.041	0.068	0.056	0.029	0.032	0.045	0.067	0.055	0.029
non-pc.linux	0.003	0.004	0.007	0.008	0.005	0.008	0.008	0.005	0.002	0.003	0.007	0.007	0.005
non-pc.other	0.413	0.302	0.293	0.203	0.325	0.303	0.224	0.124	0.424	0.312	0.308	0.217	0.122
total.server	7.075	8.108	9.390	10.110	8.183	9.639	10.481	11.067	7.102	8.143	9.655	10.323	11.069
total.pc	209.3	242.6	257.4	268.6	255.2	276.0	290.1	295.7	213.9	242.6	257.6	269.1	275.2
total.non-pc	2.380	2.340	2.700	1.773	2.983	3.603	2.151	1.311	2.338	2.252	2.714	1.982	1.043
#observations	11,010	11,010	11,010	11,010	12,635	12,635	12,635	12,635	7,338	7,338	7,338	7,338	7,338

^aThe table reports the mean of each variable. Total.server is the number of both Internet servers and network servers.

Table 10: First-time Computer Adopters^a

the fraction of firms that	Balanced Panel		
	2000-2003	2001-2004	2000-2004
adopted a server for the first time	0.285	0.220	0.323
adopted a PC for the first time	0.024	0.004	0.020
adopted a non-PC for the first time	0.199	0.183	0.239
#observations	11,010	12,635	7,338

^aThe table reports the fractions of the firms that did not have a computer in each segment and then adopted a computer in that segment for the first time during the sample period. The first-time adoption of a server includes that of either an Internet server or a network server.

Table 11: Switching Patterns in the Use of Server Operating Systems^a

the fraction of firms	Balanced Panel		
	2000-2003	2001-2004	2000-2004
	A. Switching		
switching from Windows to Linux in server	0.082	0.097	0.135
switching from other to Linux in server	0.041	0.044	0.066
switching from Linux to Windows in server	0.044	0.095	0.115
switching from other to Windows in server	0.125	0.134	0.182
switching from linux to other in server	0.016	0.029	0.043
switching from Windows to other in server	0.078	0.085	0.120
	B. Updating		
updating in server.windows	0.483	0.534	0.646
updating in server.linux	0.121	0.155	0.213
updating in server.other	0.000	0.000	0.000
	C. Testing		
testing Linux in server	0.008	0.014	0.014
testing Windows in server	0.007	0.007	0.009
testing other in server	0.010	0.010	0.012
#observations	11,010	12,635	7,338

^aThe table reports the fractions of the firms that updated, switched, or tested an operating system for the server segment during the sample period. Updating means that a firm stopped using a version of an operating system, and started to use a different version of the same family of the operating system. Switching means that a firm stopped using an operating system, and started to use a different operating system. Testing an operating system means that a firm did not use it before, and started to use it, and then stopped using it in the following year, while the firm also continued to use a different operating system for the entire sample period.

Table 12: Estimation Results for 2000-2003 Balanced Panel^a

	Probit			Random Effects Probit			Logit			Conditional				
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.		
	A. Dependent Variable: Windows Use													
server.linux _{t-1}	-0.40	0.04	-0.39	0.04	-0.42	0.04	-0.41	0.04	-0.87	0.09	-0.31	0.18	-0.30	0.17
server.windows_{t-1}	2.20	0.04	2.17	0.04	2.16	0.03	2.13	0.03	3.92	0.07	-0.15	0.11	0.87	0.18
server.other _{t-1}	-0.52	0.03	-0.54	0.03	-0.56	0.03	-0.58	0.03	-1.19	0.07	-0.46	0.15	-0.91	0.09
pc.linux _{t-1}	-0.02	0.04	-0.03	0.04	-0.01	0.04	-0.03	0.04	-0.09	0.09	-0.16	0.17	0.00	0.09
pc.windows _{t-1}	0.36	0.07	0.37	0.07	0.14	0.04	0.14	0.04	0.68	0.13	0.50	0.25	0.54	0.07
pc.other _{t-1}	-0.05	0.04	-0.05	0.04	-0.11	0.04	-0.12	0.04	-0.13	0.09	0.05	0.22	-0.62	0.06
non-pc.windows _{t-1}	0.07	0.07	0.06	0.07	0.08	0.07	0.06	0.07	0.13	0.16	-0.71	0.28	1.15	0.11
non-pc.other _{t-1}	0.03	0.03	0.00	0.03	0.03	0.03	0.00	0.03	0.00	0.07	-0.01	0.14	-0.13	0.03
	B. Dependent Variable: Linux Use													
server.linux_{t-1}	2.35	0.03	2.24	0.03	2.31	0.03	2.19	0.03	3.96	0.06	-0.43	0.10	0.11	0.22
server.windows _{t-1}	-0.04	0.04	-0.05	0.04	-0.50	0.03	-0.54	0.04	-0.11	0.08	0.27	0.19	-0.27	0.11
server.other _{t-1}	0.27	0.03	0.19	0.03	0.07	0.02	-0.02	0.03	0.36	0.05	0.02	0.13	-0.16	0.08
pc.linux _{t-1}	0.67	0.03	0.59	0.03	0.70	0.03	0.61	0.03	1.10	0.06	0.43	0.11	-0.11	0.11
pc.windows _{t-1}	-0.02	0.07	0.01	0.08	-1.26	0.04	-1.29	0.04	0.00	0.15	0.20	0.30	0.07	0.08
pc.other _{t-1}	0.18	0.04	0.10	0.04	-0.11	0.03	-0.20	0.04	0.21	0.08	0.17	0.18	0.17	0.06
non-pc.windows _{t-1}	0.07	0.05	0.04	0.05	0.10	0.05	0.07	0.05	0.10	0.11	0.20	0.20	0.01	0.07
non-pc.other _{t-1}	0.13	0.02	0.10	0.02	0.12	0.02	0.09	0.02	0.20	0.05	0.03	0.11	-0.14	0.03
additional control	no	no	yes	yes	no	no	yes	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the 2000-2003 balanced panel. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. The coefficients on these controls and time dummies are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations. The estimates for $\Delta\gamma_t$ and σ_t are also suppressed in the AC method results.

Table 13: Estimation Results for 2001-2004 Balanced Panel^a

	Probit			Random Effects Probit			Logit			Conditional				
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.		
	A. Dependent Variable: Windows Use													
server.linux _{t-1}	-0.35	0.03	-0.37	0.04	-0.37	0.04	-0.39	0.04	-0.82	0.07	-0.50	0.16	0.25	0.14
server.windows _{t-1}	2.08	0.03	2.07	0.03	2.07	0.03	2.06	0.03	3.75	0.06	-0.04	0.10	0.23	0.12
server.other _{t-1}	-0.60	0.03	-0.61	0.03	-0.62	0.03	-0.64	0.03	-1.33	0.06	-0.54	0.14	-0.68	0.10
pc.linux _{t-1}	-0.01	0.04	-0.03	0.04	-0.01	0.04	-0.03	0.04	-0.04	0.08	-0.04	0.16	0.35	0.09
pc.windows _{t-1}	0.46	0.07	0.45	0.07	0.42	0.04	0.42	0.04	0.81	0.14	0.35	0.30	-0.11	0.12
pc.other _{t-1}	-0.08	0.04	-0.08	0.04	-0.11	0.04	-0.11	0.04	-0.19	0.09	-0.15	0.24	0.01	0.07
non-pc.windows _{t-1}	0.08	0.06	0.06	0.06	0.09	0.06	0.06	0.06	0.13	0.13	-0.24	0.25	0.27	0.06
non-pc.other _{t-1}	-0.05	0.03	-0.07	0.03	-0.05	0.03	-0.07	0.03	-0.15	0.06	0.08	0.13	-0.17	0.03
	B. Dependent Variable: Linux Use													
server.linux _{t-1}	2.25	0.02	2.17	0.03	2.23	0.02	2.14	0.03	3.85	0.05	-0.22	0.07	-0.07	0.20
server.windows _{t-1}	0.06	0.04	0.05	0.04	-0.24	0.03	-0.29	0.03	0.09	0.07	-0.27	0.15	-0.09	0.08
server.other _{t-1}	0.31	0.02	0.24	0.02	0.16	0.02	0.08	0.02	0.46	0.05	-0.08	0.12	-0.23	0.10
pc.linux _{t-1}	0.64	0.03	0.56	0.03	0.64	0.03	0.58	0.03	1.03	0.05	0.37	0.10	-0.05	0.12
pc.windows _{t-1}	0.24	0.08	0.26	0.09	-1.45	0.03	-1.51	0.04	0.52	0.17	0.16	0.34	0.08	0.13
pc.other _{t-1}	0.21	0.04	0.16	0.04	-0.11	0.03	-0.18	0.04	0.30	0.07	0.01	0.18	0.38	0.09
non-pc.windows _{t-1}	-0.02	0.04	-0.03	0.04	-0.01	0.04	-0.01	0.05	-0.07	0.09	-0.41	0.16	-0.01	0.06
non-pc.other _{t-1}	0.13	0.02	0.09	0.02	0.12	0.02	0.09	0.02	0.18	0.05	-0.11	0.10	0.00	0.04
additional control	no	no	yes	yes	no	no	yes	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the 2001-2004 balanced panel. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. The coefficients on these controls and time dummies are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations. The estimates for $\Delta\gamma_t$ and σ_t are also suppressed in the AC method results.

Table 14: Details on the AC Method Estimation for Windows Use^a

		The minimum number of observations contained in each cell for the sample orthogonality conditions																											
		2				3				4				5				6				7				8			
		Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.		
		A. 2000-2003 Balanced Panel																											
server.linux _{t-1}		0.56	0.17	0.14	0.17	0.14	0.17	-0.30	0.17	0.04	0.18	0.04	0.18	-0.27	0.18	-0.04	0.18	-0.09	0.18										
server.windows _{t-1}		0.77	0.18	0.91	0.18	0.87	0.18	0.87	0.18	0.77	0.18	0.77	0.18	0.60	0.19	0.87	0.18	0.84	0.18										
server.other _{t-1}		-0.63	0.09	-0.18	0.10	-0.91	0.09	-0.91	0.09	-0.22	0.10	-0.22	0.10	-0.11	0.10	-0.24	0.10	-0.22	0.10										
M _T		1252		785		578		467		391		224		206		205.52		233.18											
M		589		407		302		261		224		206		206		205.52		233.18											
over-identifying test		653.75		408.14		308.03		270.02		231.88		205.52		206		205.52		233.18											
p-value		0.01		0.31		0.22		0.17		0.17		0.27		0.27		0.27		0.00											
		B. 2001-2004 Balanced Panel																											
server.linux _{t-1}		0.35	0.15	-0.11	0.15	0.25	0.14	0.25	0.14	0.03	0.14	0.03	0.14	0.85	0.16	0.04	0.15	-0.11	0.14										
server.windows _{t-1}		0.20	0.13	-0.02	0.14	0.23	0.12	0.23	0.12	0.18	0.12	0.18	0.12	0.18	0.13	0.11	0.14	0.22	0.13										
server.other _{t-1}		-0.73	0.10	-0.14	0.11	-0.68	0.10	-0.68	0.10	-0.64	0.10	-0.64	0.10	-0.18	0.11	-0.06	0.11	-0.45	0.11										
M _T		1409		887		681		548		457		392		349		315.71		275.97											
M		648		459		369		305		266		225		203		315.71		275.97											
over-identifying test		662.40		487.99		379.22		327.41		280.20		225		203		315.71		275.97											
p-value		0.23		0.09		0.20		0.08		0.12		0.00		0.00		0.00		0.00											
		C. 2000-2004 Balanced Panel																											
server.linux _{t-1}		0.47	0.18	0.23	0.19	0.18	0.17	0.18	0.17	0.01	0.18	0.01	0.18	0.56	0.20	0.07	0.18	-0.27	0.18										
server.windows _{t-1}		0.81	0.19	1.25	0.20	0.66	0.20	0.66	0.20	-0.26	0.23	-0.26	0.23	0.22	0.22	0.21	0.21	0.43	0.21										
server.other _{t-1}		-0.25	0.09	-0.58	0.09	-0.38	0.08	-0.38	0.08	-0.24	0.09	-0.24	0.09	-0.67	0.09	-0.17	0.09	-0.35	0.09										
M _T		1387		807		593		479		404		349		306		283.14		247.59											
M		934		568		420		339		293		257		226		283.14		247.59											
over-identifying test		938.09		591.16		416.72		355.90		303.24		257		226		283.14		247.59											
p-value		0.35		0.15		0.37		0.13		0.17		0.05		0.06		0.05		0.06											

^aAll estimations use the full samples from the balanced panel data. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. In the table, M (or M_T) denotes the number of the moment conditions conditional on the histories up to period $T-1$ (or T) that are observed in the data. The over-identifying test reports the J -test statistics, and p -values for these test statistics are reported below.

Table 15: Details on the AC Method Estimation for Linux Use^a

		2		3		4		5		6		7		8	
		Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
The minimum number of observations contained in each cell for the sample orthogonality conditions															
A. 2000-2003 Balanced Panel															
server.linux _{t-1}		-0.22	0.24	0.00	0.24	0.11	0.22	0.59	0.22	-0.06	0.25	-0.51	0.25	0.23	0.27
server.windows _{t-1}		-0.21	0.12	-0.01	0.11	-0.27	0.11	0.10	0.10	-0.20	0.11	-0.24	0.12	-0.12	0.11
server.other _{t-1}		-0.17	0.09	-0.03	0.09	-0.16	0.08	0.04	0.08	-0.04	0.09	-0.14	0.09	-0.09	0.10
M_T		1252		785		578		467		391		351		316	
M		589		407		302		261		224		206		189	
over-identifying test		540.98		392.09		316.43		257.92		209.35		195.32		190.30	
p -value		0.86		0.53		0.14		0.34		0.54		0.46		0.23	
B. 2001-2004 Balanced Panel															
server.linux _{t-1}		-0.06	0.19	-0.06	0.19	-0.07	0.20	-0.10	0.21	-0.08	0.20	-0.06	0.20	-0.11	0.21
server.windows _{t-1}		0.06	0.08	-0.02	0.08	-0.09	0.08	-0.11	0.08	-0.12	0.08	-0.02	0.08	-0.13	0.08
server.other _{t-1}		-0.09	0.10	-0.06	0.10	-0.23	0.10	-0.05	0.10	-0.22	0.10	-0.03	0.10	-0.09	0.10
M_T		1409		887		681		548		457		392		349	
M		648		459		369		305		266		225		203	
over-identifying test		672.42		464.91		360.02		298.51		269.98		261.56		233.31	
p -value		0.15		0.27		0.45		0.40		0.23		0.01		0.02	
C. 2000-2004 Balanced Panel															
server.linux _{t-1}		0.02	0.16	0.38	0.18	-0.30	0.17	0.06	0.19	0.45	0.18	-0.14	0.20	-0.37	0.20
server.windows _{t-1}		-0.33	0.09	-0.08	0.10	-0.16	0.10	-0.27	0.10	-0.17	0.10	-0.06	0.11	0.11	0.11
server.other _{t-1}		0.34	0.06	0.22	0.07	0.39	0.06	0.27	0.07	0.25	0.07	0.25	0.07	0.23	0.08
M_T		1387		807		593		479		404		349		306	
M		934		568		420		339		293		257		226	
over-identifying test		870.19		567.85		436.50		345.07		309.68		270.04		258.83	
p -value		0.89		0.35		0.16		0.24		0.12		0.06		0.02	

^aAll estimations use the full samples from the balanced panel data. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. In the table, M (or M_T) denotes the number of the moment conditions conditional on the histories up to period $T-1$ (or T) that are observed in the data. The over-identifying test reports the J -test statistics, and p -values for these test statistics are reported below.

Table 16: Robustness Check I: More Lagged Dependent Variables^a

	Probit				Random Effects Probit				Conditional					
	Est.		S.E.		Est.		S.E.		Logit		Logit		AC Method	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
	A. Windows Use Estimation: 2000-2003 Balanced Panel													
server.windows _{t-2}	0.47	0.06	0.46	0.06	0.48	0.07	0.48	0.07	0.83	0.10	-17.50	8.3E+02	-0.09	0.11
server.windows _{t-1}	1.87	0.06	1.86	0.06	1.85	0.06	1.84	0.06	3.36	0.10	-34.03	1.3E+03	-0.08	0.27
	B. Windows Use Estimation: 2001-2004 Balanced Panel													
server.windows _{t-2}	0.44	0.05	0.43	0.05	0.52	0.06	0.51	0.07	0.78	0.09	-58.56	9.3E+06	0.60	0.05
server.windows _{t-1}	1.95	0.05	1.94	0.05	1.93	0.05	1.92	0.05	3.50	0.09	-76.13	9.3E+06	0.39	0.26
	C. Windows Use Estimation: 2000-2004 Balanced Panel													
server.windows _{t-2}	0.49	0.06	0.47	0.06	0.52	0.06	0.50	0.06	0.84	0.11	-2.33	0.27	0.09	0.11
server.windows _{t-1}	1.82	0.05	1.81	0.06	1.78	0.06	1.77	0.06	3.27	0.10	-0.45	0.15	-0.09	0.21
	D. Windows Use Estimation: 2000-2004 Balanced Panel													
server.windows _{t-3}	0.10	0.08	0.08	0.08	0.09	0.09	0.07	0.09	0.14	0.16	-24.97	9.5E+03	-0.27	0.14
server.windows _{t-2}	0.46	0.09	0.44	0.09	0.55	0.10	0.52	0.10	0.83	0.16	-52.24	1.3E+03	0.26	0.14
server.windows _{t-1}	1.88	0.07	1.88	0.07	1.85	0.07	1.85	0.07	3.37	0.12	-71.52	2.8E+03	0.04	0.37
	E. Linux Use Estimation: 2000-2003 Balanced Panel													
server.linux _{t-2}	0.33	0.05	0.29	0.05	0.36	0.06	0.36	0.06	0.52	0.09	-19.19	7.7E+02	-0.07	0.11
server.linux _{t-1}	2.14	0.04	2.05	0.04	2.11	0.04	2.02	0.05	3.63	0.08	-36.73	1.1E+03	0.06	0.40
	F. Linux Use Estimation: 2001-2004 Balanced Panel													
server.linux _{t-2}	0.30	0.04	0.27	0.04	0.31	0.05	0.31	0.05	0.45	0.08	-22.47	3.0E+03	-0.17	0.08
server.linux _{t-1}	2.06	0.04	2.01	0.04	2.07	0.04	2.02	0.04	3.58	0.07	-43.09	6.3E+02	0.02	0.33
	G. Linux Use Estimation: 2000-2004 Balanced Panel													
server.linux _{t-2}	0.38	0.04	0.33	0.05	0.37	0.05	0.36	0.05	0.58	0.08	-3.32	0.23	-0.07	0.10
server.linux _{t-1}	2.05	0.04	1.98	0.04	2.03	0.04	1.94	0.04	3.52	0.07	-0.83	0.12	-0.13	0.27
	H. Linux Use Estimation: 2000-2004 Balanced Panel													
server.linux _{t-3}	0.19	0.06	0.19	0.06	0.19	0.06	0.20	0.06	0.34	0.11	-20.53	1.8E+03	-0.49	0.12
server.linux _{t-2}	0.25	0.06	0.21	0.06	0.24	0.07	0.24	0.07	0.35	0.12	-38.25	1.8E+03	-0.46	0.13
server.linux _{t-1}	2.01	0.05	1.96	0.05	2.00	0.05	1.96	0.05	3.50	0.09	-56.17	7.0E+02	0.28	0.38
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for lagged dependent variables, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 17: Robustness Check II: Exclude Firms Testing An Operating System^a

	Probit			Random Effects Probit			Logit			Conditional Logit			AC Method	
	Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.
	Use Estimation: 2000-2003 Balanced Panel													
server.linux _{t-1}	-0.42	0.04	-0.40	0.04	-0.44	0.04	-0.42	0.04	-0.88	0.09	-0.23	0.18	0.11	0.20
server.windows _{t-1}	2.20	0.04	2.18	0.04	2.16	0.03	2.13	0.03	3.92	0.07	-0.13	0.11	1.06	0.18
server.other _{t-1}	-0.53	0.03	-0.55	0.03	-0.57	0.03	-0.59	0.03	-1.20	0.07	-0.46	0.15	-0.63	0.10
B. Windows Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	-0.35	0.04	-0.37	0.04	-0.37	0.04	-0.39	0.04	-0.81	0.07	-0.52	0.17	0.10	0.16
server.windows _{t-1}	2.09	0.03	2.08	0.03	2.08	0.03	2.06	0.03	3.77	0.06	-0.03	0.11	0.03	0.14
server.other _{t-1}	-0.59	0.03	-0.61	0.03	-0.62	0.03	-0.64	0.03	-1.32	0.07	-0.52	0.15	-0.19	0.11
C. Windows Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	-0.37	0.04	-0.38	0.04	-0.39	0.04	-0.39	0.04	-0.82	0.09	-0.29	0.16	0.14	0.18
server.windows _{t-1}	2.17	0.04	2.15	0.04	2.14	0.04	2.11	0.04	3.86	0.07	0.49	0.10	0.18	0.21
server.other _{t-1}	-0.56	0.03	-0.58	0.04	-0.59	0.03	-0.61	0.03	-0.13	0.08	-0.41	0.13	-0.18	0.09
D. Linux Use Estimation: 2000-2003 Balanced Panel														
server.linux _{t-1}	2.41	0.03	2.30	0.03	2.36	0.03	2.24	0.03	4.09	0.06	-0.32	0.10	-0.32	0.27
server.windows _{t-1}	-0.03	0.04	-0.03	0.04	-0.51	0.03	-0.56	0.04	-0.08	0.08	0.26	0.19	0.02	0.13
server.other _{t-1}	0.28	0.03	0.20	0.03	0.06	0.03	-0.03	0.03	0.38	0.06	0.06	0.14	0.18	0.10
E. Linux Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	2.32	0.03	2.24	0.03	2.29	0.03	2.20	0.03	3.98	0.05	-0.13	0.08	0.18	0.21
server.windows _{t-1}	0.07	0.04	0.07	0.04	-0.24	0.03	-0.29	0.04	0.13	0.07	-0.19	0.15	-0.30	0.08
server.other _{t-1}	0.30	0.02	0.23	0.03	0.14	0.02	0.07	0.03	0.44	0.05	0.03	0.12	0.06	0.10
F. Linux Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	2.33	0.03	2.23	0.03	2.29	0.03	2.16	0.03	3.96	0.06	0.30	0.08	-0.66	0.21
server.windows _{t-1}	-0.01	0.04	-0.01	0.05	-0.44	0.04	-0.49	0.04	-0.02	0.09	0.08	0.16	0.22	0.14
server.other _{t-1}	0.28	0.03	0.21	0.03	0.10	0.03	0.03	0.03	0.41	0.06	0.09	0.12	-0.14	0.08
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 18: Robustness Check III: Include Only Firms That Made Decisions in Any Segment for At Least Two Years^a

	Probit			Random Effects Probit			Logit			Logit			AC Method	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
	A. Windows Use Estimation: 2000-2003 Balanced Panel													
server.linux _{t-1}	-0.42	0.04	-0.39	0.04	-0.43	0.04	-0.41	0.04	-0.85	0.09	-0.23	0.18	0.66	0.19
server.windows _{t-1}	2.05	0.04	2.03	0.04	2.03	0.04	2.00	0.04	3.66	0.07	-0.20	0.11	0.17	0.18
server.other _{t-1}	-0.49	0.03	-0.50	0.03	-0.51	0.03	-0.53	0.03	-1.08	0.07	-0.45	0.16	-0.78	0.08
B. Windows Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	-0.37	0.04	-0.37	0.04	-0.38	0.04	-0.39	0.04	-0.80	0.08	-0.49	0.17	0.35	0.16
server.windows _{t-1}	1.93	0.03	1.92	0.03	1.93	0.03	1.91	0.04	3.51	0.07	-0.11	0.11	0.39	0.13
server.other _{t-1}	-0.53	0.03	-0.55	0.03	-0.54	0.03	-0.56	0.03	-1.17	0.07	-0.50	0.15	-0.66	0.09
C. Windows Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	-0.38	0.04	-0.39	0.04	-0.39	0.04	-0.40	0.04	-0.83	0.09	-0.29	0.16	-0.19	0.20
server.windows _{t-1}	2.10	0.04	2.08	0.04	2.08	0.04	2.05	0.04	3.74	0.07	0.48	0.10	0.15	0.22
server.other _{t-1}	-0.54	0.04	-0.55	0.04	-0.56	0.03	-0.58	0.03	-1.22	0.08	-0.39	0.13	-0.35	0.09
D. Linux Use Estimation: 2000-2003 Balanced Panel														
server.linux _{t-1}	2.33	0.03	2.22	0.03	2.27	0.03	2.16	0.03	3.91	0.06	-0.35	0.10	0.25	0.26
server.windows _{t-1}	-0.06	0.04	-0.05	0.05	-0.51	0.04	-0.55	0.04	-0.10	0.09	0.28	0.20	-0.10	0.11
server.other _{t-1}	0.26	0.03	0.18	0.03	0.07	0.03	-0.02	0.03	0.34	0.06	0.06	0.14	0.07	0.09
E. Linux Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	2.24	0.03	2.17	0.03	2.21	0.03	2.13	0.03	3.82	0.05	-0.16	0.08	0.21	0.22
server.windows _{t-1}	0.06	0.04	0.07	0.04	-0.25	0.04	-0.28	0.04	0.14	0.08	-0.15	0.16	-0.31	0.08
server.other _{t-1}	0.28	0.03	0.22	0.03	0.15	0.02	0.08	0.03	0.41	0.05	0.04	0.12	0.01	0.10
F. Linux Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	2.29	0.03	2.20	0.03	2.26	0.03	2.13	0.03	3.89	0.06	0.30	0.08	-0.17	0.20
server.windows _{t-1}	-0.03	0.05	-0.02	0.05	-0.44	0.04	-0.48	0.04	-0.04	0.09	0.08	0.16	0.12	0.12
server.other _{t-1}	0.28	0.03	0.21	0.03	0.11	0.03	0.04	0.03	0.40	0.06	0.09	0.12	0.10	0.07
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 19: Robustness Check IV: Include Only Firms That Made Decisions in the Server Segment for At Least Two Years^a

	Probit			Random Effects Probit			Logit			Conditional			AC Method			
	Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.		
	Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.		Est.	S.E.		
A. Windows Use Estimation: 2000-2003 Balanced Panel																
server.linux _{t-1}	-0.36	0.05	-0.33	0.05	-0.36	0.05	-0.32	0.05	-0.68	0.10	-0.25	0.19	-0.10	0.18		
server.windows _{t-1}	1.60	0.05	1.57	0.05	1.61	0.04	1.58	0.04	2.84	0.08	-0.57	0.13	-0.61	0.20		
server.other _{t-1}	-0.40	0.04	-0.41	0.04	-0.39	0.04	-0.41	0.04	-0.87	0.08	-0.54	0.16	-0.26	0.08		
B. Windows Use Estimation: 2001-2004 Balanced Panel																
server.linux _{t-1}	-0.36	0.04	-0.36	0.04	-0.37	0.04	-0.38	0.04	-0.75	0.08	-0.44	0.18	0.01	0.13		
server.windows _{t-1}	1.53	0.04	1.52	0.04	1.52	0.04	1.51	0.05	2.82	0.08	-0.45	0.12	0.51	0.13		
server.other _{t-1}	-0.42	0.04	-0.43	0.04	-0.41	0.04	-0.43	0.04	-0.90	0.08	-0.49	0.16	-0.59	0.08		
C. Windows Use Estimation: 2000-2004 Balanced Panel																
server.linux _{t-1}	-0.40	0.04	-0.39	0.05	-0.41	0.04	-0.39	0.05	-0.81	0.09	-0.25	0.16	0.49	0.19		
server.windows _{t-1}	1.79	0.04	1.77	0.04	1.78	0.04	1.75	0.04	3.19	0.08	0.25	0.11	0.69	0.21		
server.other _{t-1}	-0.45	0.04	-0.47	0.04	-0.46	0.04	-0.48	0.04	-0.99	0.08	-0.42	0.14	-0.89	0.09		
D. Linux Use Estimation: 2000-2003 Balanced Panel																
server.linux _{t-1}	2.04	0.03	1.94	0.04	1.99	0.03	1.90	0.04	3.36	0.06	-0.54	0.11	0.24	0.22		
server.windows _{t-1}	-0.06	0.05	-0.03	0.05	-0.43	0.04	-0.44	0.05	-0.04	0.10	0.39	0.20	-0.53	0.11		
server.other _{t-1}	0.25	0.03	0.17	0.03	0.12	0.03	0.03	0.03	0.32	0.06	0.04	0.14	0.15	0.08		
E. Linux Use Estimation: 2001-2004 Balanced Panel																
server.linux _{t-1}	2.00	0.03	1.94	0.03	1.98	0.03	1.90	0.03	3.36	0.05	-0.30	0.08	-0.09	0.21		
server.windows _{t-1}	0.03	0.05	0.04	0.05	-0.23	0.04	-0.25	0.04	0.09	0.09	-0.10	0.16	-0.03	0.09		
server.other _{t-1}	0.25	0.03	0.20	0.03	0.16	0.03	0.10	0.03	0.36	0.05	0.04	0.13	-0.02	0.10		
F. Linux Use Estimation: 2000-2004 Balanced Panel																
server.linux _{t-1}	2.12	0.03	2.03	0.03	2.08	0.03	1.97	0.04	3.54	0.06	0.21	0.08	-0.20	0.22		
server.windows _{t-1}	-0.06	0.05	-0.03	0.05	-0.39	0.04	-0.41	0.05	-0.05	0.10	0.17	0.16	-0.25	0.14		
server.other _{t-1}	0.24	0.03	0.19	0.03	0.13	0.03	0.06	0.03	0.35	0.06	0.10	0.12	0.08	0.08		
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no		

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 20: Robustness Check V: Include Only Firms That Made Decisions in Any Segment for All Years^a

	Probit			Random Effects Probit			Logit			Conditional			AC Method	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
	A. Windows Use Estimation: 2000-2003 Balanced Panel													
server.linux _{t-1}	-0.38	0.05	-0.34	0.05	-0.38	0.05	-0.35	0.05	-0.73	0.10	-0.20	0.21	-0.09	0.22
server.windows _{t-1}	1.86	0.05	1.83	0.05	1.86	0.04	1.81	0.05	3.29	0.09	-0.43	0.14	0.26	0.21
server.other _{t-1}	-0.41	0.04	-0.42	0.04	-0.42	0.04	-0.43	0.04	-0.89	0.09	-0.45	0.18	-0.76	0.09
B. Windows Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	-0.33	0.04	-0.36	0.04	-0.35	0.04	-0.37	0.05	-0.73	0.09	-0.48	0.19	-0.39	0.16
server.windows _{t-1}	1.75	0.04	1.73	0.04	1.74	0.04	1.71	0.04	3.15	0.08	-0.28	0.13	0.95	0.16
server.other _{t-1}	-0.49	0.04	-0.51	0.04	-0.50	0.04	-0.52	0.04	-1.06	0.08	-0.47	0.18	-1.17	0.10
C. Windows Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	-0.32	0.05	-0.32	0.05	-0.33	0.05	-0.33	0.05	-0.65	0.11	-0.21	0.19	0.42	0.20
server.windows _{t-1}	1.86	0.05	1.83	0.05	1.84	0.05	1.80	0.05	3.27	0.10	0.17	0.13	-0.62	0.33
server.other _{t-1}	-0.43	0.05	-0.44	0.05	-0.45	0.05	-0.47	0.05	-0.93	0.10	-0.38	0.17	-1.31	0.12
D. Linux Use Estimation: 2000-2003 Balanced Panel														
server.linux _{t-1}	2.17	0.04	2.07	0.04	2.13	0.04	2.02	0.04	3.60	0.07	-0.44	0.12	0.15	0.31
server.windows _{t-1}	-0.10	0.05	-0.09	0.06	-0.51	0.04	-0.54	0.05	-0.15	0.10	0.30	0.22	-0.38	0.17
server.other _{t-1}	0.24	0.03	0.16	0.03	0.09	0.03	0.00	0.03	0.30	0.06	0.08	0.15	0.05	0.10
E. Linux Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	2.07	0.03	2.01	0.03	2.04	0.03	1.97	0.03	3.47	0.06	-0.25	0.09	0.10	0.22
server.windows _{t-1}	0.08	0.05	0.08	0.05	-0.20	0.04	-0.23	0.05	0.16	0.09	-0.11	0.17	-0.01	0.11
server.other _{t-1}	0.27	0.03	0.21	0.03	0.16	0.03	0.10	0.03	0.39	0.06	0.03	0.13	0.06	0.11
F. Linux Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	2.06	0.04	1.98	0.04	2.03	0.04	1.93	0.04	3.42	0.07	0.16	0.10	-0.27	0.27
server.windows _{t-1}	-0.05	0.06	-0.04	0.06	-0.38	0.05	-0.40	0.06	-0.06	0.11	0.10	0.19	-0.20	0.23
server.other _{t-1}	0.22	0.04	0.16	0.04	0.11	0.03	0.04	0.04	0.28	0.07	0.09	0.14	0.61	0.11
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 21: Robustness Check VI: Include Only Firms That Made Decisions in the Server Segment for All Years^a

	Probit			Random Effects Probit			Logit			Conditional			AC Method	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
	A. Windows Use Estimation: 2000-2003 Balanced Panel													
server.linux _{t-1}	-0.35	0.07	-0.31	0.07	-0.32	0.07	-0.29	0.07	-0.62	0.15	-0.31	0.27	-0.17	0.23
server.windows _{t-1}	1.19	0.08	1.12	0.08	1.25	0.07	1.17	0.07	2.02	0.14	-1.13	0.22	0.36	0.24
server.other _{t-1}	-0.39	0.06	-0.40	0.06	-0.35	0.06	-0.36	0.06	-0.83	0.13	-0.59	0.25	-0.02	0.13
B. Windows Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	-0.34	0.06	-0.33	0.06	-0.34	0.07	-0.34	0.07	-0.67	0.13	-0.34	0.27	-0.61	0.17
server.windows _{t-1}	1.12	0.07	1.09	0.07	1.09	0.08	1.04	0.08	2.04	0.13	-0.97	0.20	1.04	0.18
server.other _{t-1}	-0.38	0.06	-0.39	0.06	-0.36	0.06	-0.38	0.06	-0.83	0.12	-0.41	0.26	-0.26	0.11
C. Windows Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	-0.23	0.08	-0.23	0.09	-0.23	0.08	-0.23	0.09	-0.44	0.17	-0.20	0.28	0.16	0.32
server.windows _{t-1}	1.16	0.10	1.11	0.10	1.15	0.11	1.08	0.11	2.02	0.18	-0.59	0.24	0.01	0.46
server.other _{t-1}	-0.36	0.08	-0.36	0.08	-0.34	0.08	-0.35	0.08	-0.75	0.16	-0.07	0.26	-0.61	0.21
D. Linux Use Estimation: 2000-2003 Balanced Panel														
server.linux _{t-1}	1.70	0.05	1.61	0.05	1.66	0.05	1.57	0.05	2.75	0.09	-0.83	0.16	-0.38	0.25
server.windows _{t-1}	-0.06	0.08	0.02	0.08	-0.34	0.07	-0.32	0.07	0.04	0.15	0.44	0.27	-0.87	0.18
server.other _{t-1}	0.17	0.05	0.13	0.05	0.08	0.05	0.02	0.05	0.22	0.09	-0.16	0.18	-0.18	0.11
E. Linux Use Estimation: 2001-2004 Balanced Panel														
server.linux _{t-1}	1.69	0.04	1.65	0.04	1.67	0.04	1.61	0.05	2.79	0.08	-0.54	0.12	0.00	0.22
server.windows _{t-1}	0.03	0.07	0.06	0.07	-0.21	0.07	-0.21	0.07	0.10	0.13	0.07	0.22	0.06	0.14
server.other _{t-1}	0.23	0.04	0.17	0.04	0.17	0.04	0.11	0.04	0.32	0.07	0.09	0.17	0.00	0.12
F. Linux Use Estimation: 2000-2004 Balanced Panel														
server.linux _{t-1}	1.57	0.06	1.52	0.06	1.52	0.08	1.44	0.08	2.56	0.11	-0.14	0.14	-0.14	0.28
server.windows _{t-1}	-0.07	0.10	-0.02	0.11	-0.32	0.09	-0.32	0.10	-0.03	0.18	-0.21	0.28	-0.01	0.33
server.other _{t-1}	0.15	0.06	0.10	0.06	0.10	0.06	0.05	0.06	0.18	0.10	-0.13	0.19	-0.07	0.17
additional control	no	yes	no	yes	no	yes	no	yes	yes	yes	yes	yes	no	no

^aAll estimations use the full samples from the balanced panel data. The estimations with additional controls include the variables revenues, IT employees, programmers, desk workers, Apache, total PC, total non-PC, total Internet server, total network server, and total PC server. All coefficients, except for the main coefficient estimates reported in the table, are suppressed. The random effect probit models assume a normal distribution for the random effects, and calculate the likelihood functions using adaptive Gauss-Hermite quadrature. The conditional logit model assumes that all regressors are strictly exogenous. The AC method reports the estimation results using the sample orthogonality conditions with cells containing at least 4 observations.

Table 22: Estimation Results for Subgroups^a

Industry	Balanced Panel 2000-2003		Balanced Panel 2001-2004		Balanced Panel 2000-2004							
	AC Method		AC Method		AC Method							
	Est.	S.E.	Est.	S.E.	Est.	S.E.						
	A. Dependent Variable: Windows Use											
agri/utility: 1-2	2.12	0.21	0.14	1.19	2.03	0.21	0.11	0.58	1.95	0.23	-0.67	1.77
manufacture: 31-32	2.18	0.12	0.36	0.65	2.21	0.12	-0.18	0.39	2.22	0.14	-0.50	1.08
manufacture: 33	2.16	0.10	0.15	0.51	2.08	0.09	-0.31	0.35	2.21	0.10	0.25	0.55
retail: 4	2.33	0.15	1.34	0.93	2.25	0.12	1.30	0.39	2.45	0.16	0.52	1.00
information: 51	2.21	0.10	0.68	0.58	2.23	0.10	0.23	0.58	2.21	0.12	-0.33	1.22
financial: 52-53	2.17	0.19	0.41	0.89	2.20	0.16	0.84	0.54	2.13	0.23	0.17	0.83
professional: 54-56	2.14	0.13	1.72	0.78	2.06	0.11	0.48	0.36	2.09	0.14	0.79	0.63
education: 61	2.12	0.08	0.56	0.38	1.89	0.07	-0.05	0.34	2.02	0.08	1.29	0.61
medical: 62	2.36	0.15	0.31	1.37	2.12	0.12	1.15	0.46	2.23	0.15	-0.68	1.56
public: 9	2.28	0.09	-0.90	0.49	2.14	0.09	-0.03	0.44	2.28	0.09	0.50	0.54
	B. Dependent Variable: Linux Use											
agri/utility: 1-2	2.44	0.17	-0.81	1.62	2.33	0.14	-0.45	0.59	2.42	0.16	-1.12	1.31
manufacture: 31-32	2.37	0.13	-0.61	0.86	2.22	0.11	1.07	1.18	2.06	0.13	0.68	0.77
manufacture: 33	2.31	0.08	-0.09	0.43	2.45	0.07	-0.83	0.44	2.40	0.08	-0.30	0.34
retail: 4	2.19	0.13	0.33	0.68	2.25	0.11	-0.16	0.60	2.35	0.14	0.70	0.91
information: 51	2.43	0.10	-0.18	0.70	2.14	0.09	-0.21	0.44	2.19	0.11	-0.06	0.66
financial: 52-53	2.60	0.18	0.28	1.12	2.36	0.12	-0.19	0.69	2.41	0.17	-1.02	2.31
professional: 54-56	2.37	0.10	-0.87	0.52	2.29	0.08	-0.79	0.57	2.26	0.10	-0.34	0.56
education: 61	2.22	0.06	0.07	0.32	2.07	0.05	-0.10	0.26	2.11	0.06	0.00	0.30
medical: 62	2.30	0.12	0.25	0.52	2.26	0.10	-0.84	0.51	2.21	0.12	-1.15	0.58
public: 9	2.34	0.07	0.02	0.53	2.25	0.06	0.02	0.37	2.31	0.07	0.22	0.42

^aThe table reports the coefficient estimates on `server.windowst-1` for the Windows estimation, and the estimates on `server.linuxt-1` for the Linux estimation. The estimates in each row are obtained by using the given subsample. The number after the name of the industry denotes the first digit (or the first two digits) of the NAICS. The probit model includes the same regressors as before. The AC method reports the results using the sample orthogonality conditions with cells containing at least 4 observations.