IMPACT OF DIGITAL TECHNOLOGY INVESTMENT ON BANK PERFORMANCE IN VIETNAM

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Appendix 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	132	0.0149305	0.0096604	-0.0069249	0.04086
ROE	132	0.1653711	0.0879191	-0.1308267	0.329797
SOFT1	132	0.0020175	0.001006	0.0005937	0.0053537
SOFT2	132	0.0892352	0.0487565	0.0250209	0.2653649
NPL	132	0.0267925	0.0647053	0.0046669	0.6792443
SIZE	132	19.19195	0.9557518	1682975	2155655
AGE	132	3.285066	0.3167098	2302585	4189655
LOAN	132	0.6267753	0.0770717	0.3467286	0.7880604
DEPO	132	0.6589173	0.1034511	0.4417845	0.8837326
LODE	132	0.9663749	0.1464712	0.5528904	1428194
LEV	132	0.9116115	0.0319074	0.8290103	0.958454
INF	132	0.0298216	0.0054616	0.0183472	0.0353963

Appendix 2. Correlation matrix

	ROA	ROE	SOFT1	SOFT2	NPL	SIZE	AGE	LOAN	DEPO	LODE	LEV
ROA	1.0000										
ROE	**0.8369**	1.0000									
SOFT1	0.1909	-0.0860	1.0000								
SOFT2	-0.0165	-0.2232	**0.8505**	1.0000							
NPL	-0.1662	-0.2147	-0.0127	-0.0065	1.0000						
SIZE	0.4810	0.5604	-0.0582	-0.1939	-0.0849	1.0000					

AGE	-0.1249	-0.1518	0.0418	0.0586	0.0056	0.2506	1.0000				
LOAN	-0.0592	0.1049	-0.1468	-0.1662	-0.0691	0.3028	0.2486	1.0000			
DEPO	-0.5823	-0.4201	-0.1831	-0.0386	0.0038	-0.1143	0.2379	0.4528	1.0000		
LODE	0.5704	0.4953	0.0846	-0.1049	-0.0402	0.3752	-0.0386	0.3435	-0.6641	1.0000	
LEV	-0.5655	-0.1126	-0.4365	-0.2047	0.0719	0.0309	-0.0416	0.1320	0.4245	-0.3748	1.0000
INF	-0.1117	-0.1394	0.0061	0.0090	0.0098	-0.1113	-0.0172	0.0474	0.1065	-0.1009	-0.0386

Appendix 3. Role of COVID-19 Pandemic

Panel 3.1. Effect of SOFT1

	ROA	z	ROE	z
SOFT1*COV	-0.9043619**	-2.34	-15.73543***	-3.03
SOFT1*(1-COV)	-0.58932	-1.46	-13.28113**	-2.25
NPL	-0.0048993	-1.20	-0.0202012	-0.37
SIZE	0.0050841***	10.50	0.0508821***	9.03
AGE	-0.0060334***	-3.59	-0.0452093**	-2.22
LOAN	0.0088321	0.42	0.348578	1.22
DEPO	-0.0323348	-1.63	-0.5614967**	-2.13
LODE	-0.0061566	-0.42	-0.2274836	-1.25
LEV	-0.18371***	-9.52	-0.3393353*	-1.89
INF	-0.062568	-1.55	-0.9002102*	-1.71
Constant	0.1296051***	5.35	0.0689466	0.28
N	132		132	
Wald Chi2	323.54***		145.42***	

Panel 3.2. Effect of SOFT2

	ROA	z	ROE	z
SOFT2*COV	-0.0180788**	-2.13	-0.3746609***	-4.07
SOFT2*(1-COV)	-0.0143838	-1.57	-0.3661838***	-3.22
NPL	-0.0045778	-1.17	-0.0370569	-0.72

SIZE	0.0048509***	9.73	0.0501762***	9.83
AGE	-0.0060991***	-3.54	-0.0447783**	-2.24
LOAN	0.0069488	0.32	0.2906061	1.03
DEPO	-0.0301803	-1.51	-0.5344019**	-2.06
LODE	-0.0053349	-0.36	-0.2134681	-1.20
LEV	-0.1791253***	-9.28	-0.2666577*	-1.77
INF	-0.0583155	-1.46	-0.8243442	-1.61
Constant	0.1289691***	5.25	0.0231056	0.10
N	132		132	
Wald Chi2	304.65***		179.13***	

Panel 3.3. Lagged effect of SOFT1

	ROA	z	ROE	z
SOFT1(t-1) *COV	-0.8585722**	-2.49	-18.39356***	-3.30
SOFT1(t-1)*(1-COV)	-0.442684	-1.09	-15.61712**	-2.37
NPL	-0.0077781*	-1.85	-0.0648396	-1.15
SIZE	0.0053723***	12.02	0.0479406***	8.47
AGE	-0.0059693***	-3.51	-0.0500354**	-2.36
LOAN	0.0161469	0.79	0.4603471	1.52
DEPO	-0.0438087**	-2.24	-0.6952462**	-2.45
LODE	-0.0121723	-0.84	-0.311178	-1.61
LEV	-0.1754127	-9.77	-0.2814702	-1.52
INF	-0.0692781	-1.46	-0.9122558	-1.51
Constant	0.1252674***	5.39	0.1962297	0.73
N	110		110	
Wald Chi2	411.28***		145.16***	

Panel 3.4. Lagged effect of SOFT2

	ROA	z	ROE	z
SOFT2(t-1) *COV	-0.0158566*	-1.76	-0.429765***	-3.87
SOFT2(t-1)*(1-COV)	-0.0089338	-0.90	-0.3811355***	-2.89
NPL	-0.0068549*	-1.64	-0.0448872	-0.77
SIZE	0.0050653***	10.82	0.046859***	8.88

AGE	-0.0065299***	-3.74	-0.0508158**	-2.39
LOAN	0.0114687	0.54	0.455595	1.56
DEPO	-0.0376273*	-1.86	-0.693358**	-2.51
LODE	-0.0082817	-0.55	-0.309423	-1.63
LEV	-0.1714213***	-9.13	-0.2316803	-1.39
INF	-0.0689258	-1.57	-0.9008929	-1.58
Constant	0.1241473***	5.18	0.1743534	0.69
N	110		110	
Wald Chi2	340.75***		166.80***	

Note: symbol *, **, and *** indicate significance levels at 10%, 5%, and 1%, respectively.