

## APPENDIX 3.1

### The Unbalanced Panel Data for the Parametric Methods

Unit: billion VND and million USD

Year 2004										
Output Quantities	C		$\pi$		Sdep		Credit		Feeincome	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	3,279.93	208.86	986.77	62.84	53,340.68	3,396.63	13,273.21	845.21	488.10	31.08
Min	16.53	1.05	1.14	0.07	33.04	2.10	343.96	21.90	0.63	0.04
Average	226.09	14.40	100.51	6.40	3,989.98	254.07	2,110.56	134.40	42.90	2.73
SD	627.73	39.97	224.44	14.29	10,825.58	689.35	3,027.71	192.80	114.33	7.28
Input Quantities & Prices	Equity		Fixassets		priceEQU		PriceCAP			
	VND	USD	VND	USD						
Max	6,268.71	399.18	371.54	23.66	0.309		0.18			
Min	5.22	0.33	5.80	0.37	0.0507		0.06			
Average	395.16	25.16	38.46	2.45	0.0919		0.12			
SD	1,227.82	78.19	73.54	4.68	0.0613		0.03			
Year 2005										
Output Quantities	C		$\pi$		Sdep		Credit		Feeincome	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	4,112.07	259.99	748.69	47.34	57,017.10	3,605.03	13,794.82	872.21	593.21	37.51
Min	23.38	1.48	1.20	0.08	33.66	2.13	376.53	23.81	0.04	0.00
Average	309.75	19.58	67.23	4.25	4,086.51	258.38	2,150.57	135.97	48.64	3.08
SD	793.77	50.19	176.86	11.18	11,452.40	724.10	3,092.36	195.52	133.55	8.44
Input Quantities & Prices	Equity		Fixassets		priceEQU		priceCAP			
	VND	USD	VND	USD						
Max	6,319.84	399.59	398.31	25.18	0.3348		0.2			
Min	6.40	0.40	8.57	0.54	0.0694		0.08			
Average	371.88	23.51	42.85	2.71	0.1034		0.15			
SD	1,234.91	78.08	78.35	4.95	0.0602		0.03			
Year 2006										
Output Quantities	C		$\pi$		Sdep		Credit		Feeincome	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	6,915.05	430.36	740.87	46.11	33,254.19	2,069.59	10,865.83	676.24	718.03	44.69
Min	1.14	0.07	-103.65	-6.45	14.55	0.91	59.47	3.70	0.02	0.00
Average	292.95	18.23	50.41	3.14	2,545.30	158.41	1,374.61	85.55	38.26	2.38
SD	1,019.64	63.46	150.41	9.36	6,799.08	423.14	2,111.53	131.41	126.57	7.88
Input Quantities & Prices	Equity		Fixassets		priceEQU		priceCAP			
	VND	USD	VND	USD						
Max	8,108.14	504.61	313.52	19.51	0.7528		0.37			
Min	-103.65	-6.45	0.99	0.06	0.0071		0.06			
Average	230.51	14.35	30.25	1.88	0.0977		0.16			
SD	1,167.93	72.69	51.60	3.21	0.1303		0.06			
Year 2007										

<i>Output Quantities</i>	<i>C</i>		$\pi$		<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	9,664.60	603.40	197.25	12.32	38,603.81	2,410.18	20,088.13	1,254.18	1,051.20	65.63
Min	7.89	0.49	-3.61	-0.23	29.66	1.85	138.30	8.63	0.24	0.01
Average	309.46	19.32	13.80	0.86	2,421.08	151.16	1,751.82	109.37	38.90	2.43
SD	1,263.02	78.85	35.51	2.22	7,118.21	444.42	3,140.89	196.10	153.17	9.56
<i>Input Quantities &amp; Prices</i>	<i>Equity</i>		<i>Fixassets</i>		<i>priceEQU</i>		<i>priceCAP</i>			
	VND	USD	VND	USD						
Max	8,401.49	524.54	346.39	21.63	0.561		0.26			
Min	-79.33	-4.95	2.97	0.19	0.0383		0.07			
Average	195.16	12.18	27.31	1.70	0.1015		0.17			
SD	1,077.92	67.30	50.25	3.14	0.0776		0.05			
Year 2008										
<i>Output Quantities</i>	<i>C</i>		$\pi$		<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	2,728.82	156.08	285.44	16.33	40,237.71	2,301.53	16,027.45	916.74	776.59	44.42
Min	3.14	0.18	-152.64	-8.73	27.92	1.60	129.70	7.42	0.12	0.01
Average	96.62	5.53	15.36	0.88	2,479.97	141.85	1,714.88	98.09	34.15	1.95
SD	368.14	21.06	53.93	3.08	7,265.65	415.58	2,804.12	160.39	135.21	7.73
<i>Input Quantities &amp; Prices</i>	<i>Equity</i>		<i>Fixassets</i>		<i>priceEQU</i>		<i>priceCAP</i>			
	VND	USD	VND	USD						
Max	10,101.06	577.76	338.47	19.36	0.1331		0.08			
Min	-76.89	-4.40	2.97	0.17	0.0142		0.02			
Average	229.27	13.11	27.20	1.56	0.0302		0.05			
SD	1,295.08	74.08	49.41	2.83	0.0198		0.01			
The entire period (2004-2008)										
<i>Output Quantities</i>	<i>C</i>		$\pi$		<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>	
	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
Max	106,906.14	603.40	986.77	62.84	57,017.10	3,605.03	20,088.13	1,254.18	1,051.20	65.63
Min	101.93	0.07	-152.64	-8.73	14.55	0.91	59.47	3.70	0.02	0.00
Average	4,607.95	15.41	39.01	3.11	2,852.22	192.77	1,750.56	112.68	39.12	2.51
SD	14,651.99	22.08	127.86	5.22	8,178.82	153.68	2,818.55	28.71	134.98	0.88
<i>Input Quantities &amp; Prices</i>	<i>Equity</i>		<i>Fixassets</i>		<i>priceEQU</i>		<i>priceCAP</i>			
	VND	USD	VND	USD						
Max	10,101.06	577.76	398.31	25.18	0.7528		0.37			
Min	-103.65	-6.45	0.99	0.06	0.0071		0.02			
Average	257.31	17.66	31.12	2.06	0.0804		0.13			
SD	1,187.46	4.49	57.20	0.98	0.0846		0.06			

## APPENDIX 3.2

### The Balanced Panel Data for the Non-Parametric Methods (ADEA)

Unit: *billion VND and million USD*

Year 2004								
<i>Output Quantities</i>	<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>		<i>Interest</i>	
	VND	USD	VND	USD	VND	USD	VND	USD
Max	53,340.68	3,396.63	13,273.21	845.21	488.10	31.08	3,214.62	204.70
Min	33.04	2.10	343.96	21.90	0.63	0.04	21.05	1.34
Average	3,989.98	254.07	2,110.56	134.40	42.90	2.73	258.69	16.47
SD	10,825.58	689.35	3,027.71	192.80	114.33	7.28	627.23	39.94
<i>Input Quantities</i>	<i>Equity</i>		<i>LAB</i>		<i>Intexp</i>			
	VND	USD	VND	USD	VND	USD		
Max	6,268.71	399.18	113.89	7.25	2,040.00	129.90		
Min	5.22	0.33	1.29	0.08	12.34	0.79		
Average	395.16	25.16	9.38	0.60	150.30	9.57		
SD	1,227.82	78.19	22.21	1.41	385.84	24.57		
<i>Input Prices</i>	<i>priceDEP</i>		<i>priceLAB</i>		<i>priceCAP</i>		<i>Price EQU</i>	
Max	0.6438		0.1237		0.1799		0.3090	
Min	0.0079		0.0219		0.0616		0.0507	
Average	0.1260		0.0508		0.1237		0.0919	
SD	0.1326		0.0205		0.0320		0.0613	
Year 2005								
<i>Output Quantities</i>	<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>		<i>Interest</i>	
	VND	USD	VND	USD	VND	USD	VND	USD
Max	57,017.10	3,605.03	13,794.82	872.21	593.21	37.51	3,731.09	235.91
Min	33.66	2.13	376.53	23.81	0.04	0.00	34.14	2.16
Average	4,086.51	258.38	2,150.57	135.97	48.64	3.08	300.84	19.02
SD	11,452.40	724.10	3,092.36	195.52	133.55	8.44	728.87	46.08
<i>Input Quantities</i>	<i>Equity</i>		<i>LAB</i>		<i>Intexp</i>			
	VND	USD	VND	USD	VND	USD		
Max	6,319.84	399.59	204.00	12.90	2,178.80	137.76		
Min	6.40	0.40	1.79	0.11	15.95	1.01		
Average	371.88	23.51	14.49	0.92	176.97	11.19		
SD	1,234.91	78.08	39.16	2.48	419.00	26.49		
<i>Input Prices</i>	<i>priceDEP</i>		<i>priceLAB</i>		<i>priceCAP</i>		<i>Price EQU</i>	
Max	0.6050		0.0982		0.2017		0.3348	
Min	0.0145		0.0211		0.0792		0.0694	
Average	0.1303		0.0470		0.1476		0.1034	
SD	0.1256		0.0163		0.0313		0.0602	
Year 2006								
<i>Output Quantities</i>	<i>Sdep</i>		<i>Credit</i>		<i>Feeincome</i>		<i>Interest</i>	
	VND	USD	VND	USD	VND	USD	VND	USD

	VND	USD	VND	USD	VND	USD	VND	USD
Max	33,254.19	2,069.59	10,865.83	676.24	485.44	30.21	1,878.26	116.89
Min	48.72	3.03	487.23	30.32	0.18	0.01	43.58	2.71
Average	3,219.55	200.37	1,827.76	113.75	42.51	2.65	284.80	17.72
SD	7,301.06	454.39	2,001.22	124.55	103.08	6.42	456.81	28.43
<b>Input Quantities</b>	<b>Equity</b>		<b>LAB</b>		<b>Intexp</b>			
	VND	USD	VND	USD	VND	USD		
Max	1,338.95	83.33	60.21	3.75	1,217.67	75.78		
Min	3.92	0.24	1.96	0.12	23.93	1.49		
Average	122.99	7.65	8.87	0.55	167.51	10.43		
SD	271.51	16.90	11.72	0.73	263.61	16.41		
<b>Input Prices</b>	<b>priceDEP</b>		<b>priceLAB</b>		<b>priceCAP</b>		<b>Price EQU</b>	
Max	0.2823		0.0713		0.2675		0.7528	
Min	0.0219		0.0181		0.0807		0.0710	
Average	0.1215		0.0399		0.1407		0.1428	
SD	0.0800		0.0125		0.0384		0.1319	
<b>Year 2007</b>								
<b>Output Quantities</b>	<b>Sdep</b>		<b>Credit</b>		<b>Feeincome</b>		<b>Interest</b>	
	VND	USD	VND	USD	VND	USD	VND	USD
Max	34,794.21	2,172.33	15,149.95	945.87	530.05	33.09	2,215.56	138.33
Min	47.21	2.95	843.28	52.65	0.24	0.01	56.45	3.52
Average	3,452.73	215.57	2,492.56	155.62	44.03	2.75	313.15	19.55
SD	7,769.96	485.11	2,728.22	170.33	114.64	7.16	495.48	30.93
<b>Input Quantities</b>	<b>Equity</b>		<b>LAB</b>		<b>Intexp</b>			
	VND	USD	VND	USD	VND	USD		
Max	815.68	50.93	56.28	3.51	1,518.69	94.82		
Min	-79.33	-4.95	3.09	0.19	29.19	1.82		
Average	116.76	7.29	10.15	0.63	191.05	11.93		
SD	203.50	12.71	11.78	0.74	319.59	19.95		
<b>Input Prices</b>	<b>priceDEP</b>		<b>priceLAB</b>		<b>priceCAP</b>		<b>Price EQU</b>	
Max	0.3031		0.0754		0.2466		0.5610	
Min	0.0385		0.0150		0.1047		0.0620	
Average	0.1066		0.0485		0.1822		0.1149	
SD	0.0719		0.0170		0.0325		0.0983	
<b>Year 2008</b>								
<b>Output Quantities</b>	<b>Sdep</b>		<b>Credit</b>		<b>Feeincome</b>		<b>Interest</b>	
	VND	USD	VND	USD	VND	USD	VND	USD
Max	35,006.74	2,002.33	15,616.59	893.24	710.89	40.66	536.59	30.69
Min	276.39	15.81	820.79	46.95	0.87	0.05	14.02	0.80
Average	3,488.96	199.56	2,537.36	145.13	44.88	2.57	86.02	4.92
SD	7,788.00	445.46	2,809.43	160.70	140.08	8.01	126.46	7.23
<b>Input Quantities</b>	<b>Equity</b>		<b>LAB</b>		<b>Intexp</b>			

	VND	USD	VND	USD	VND	USD		
Max	918.77	52.55	18.59	1.06	327.37	18.72		
Min	-76.89	-4.40	0.97	0.06	9.68	0.55		
Average	128.79	7.37	3.16	0.18	54.96	3.14		
SD	227.96	13.04	3.75	0.21	72.31	4.14		
<b><i>Input Prices</i></b>	<b><i>priceDEP</i></b>		<b><i>priceLAB</i></b>		<b><i>priceCAP</i></b>		<b><i>Price EQU</i></b>	
Max	0.1136		0.0817		0.0566		0.1331	
Min	0.0094		0.0199		0.0244		0.0170	
Average	0.0348		0.0472		0.0414		0.0315	
SD	0.0263		0.0169		0.0070		0.0229	
<b>The entire period (2004-2008)</b>								
<b><i>Output Quantities</i></b>	<b><i>Sdep</i></b>		<b><i>Credit</i></b>		<b><i>Feeincome</i></b>		<b><i>Interest</i></b>	
	VND	USD	VND	USD	VND	USD	VND	USD
Max	57,017.10	3,605.03	15,616.59	945.87	710.89	40.66	3,731.09	235.91
Min	33.04	2.10	343.96	21.90	0.04	0.00	14.02	0.80
Average	3,647.55	225.59	2,223.76	136.97	44.59	2.76	248.70	15.54
SD	1,950.10	135.59	435.13	28.79	15.23	0.79	228.66	14.81
<b><i>Input Quantities</i></b>	<b><i>Equity</i></b>		<b><i>LAB</i></b>		<b><i>Intexp</i></b>			
	VND	USD	VND	USD	VND	USD		
Max	6,319.84	399.59	204.00	12.90	2,178.80	137.76		
Min	-79.33	-4.95	0.97	0.06	9.68	0.55		
Average	227.12	14.20	9.21	0.58	148.16	9.25		
SD	546.65	35.05	13.66	0.87	136.72	8.85		
<b><i>Input Prices</i></b>	<b><i>priceDEP</i></b>		<b><i>priceLAB</i></b>		<b><i>priceCAP</i></b>		<b><i>Price EQU</i></b>	
Max	0.6438		0.1237		0.2675		0.7528	
Min	0.0079		0.0150		0.0244		0.0170	
Average	0.1038		0.0467		0.1271		0.0969	
SD	0.1006		0.0170		0.0557		0.0903	

## APPENDIX 3.3

### The Endogenous and Exogenous Variables Used in the Parametric Basic Model

Year 2004							
Endogenous Variables	Size <sup>38</sup>	quality	leverage	<i>profit</i>			Risk
				ROA	ROE	NIM	
Max	1	0.016633	0.187662639	0.9868721	0.0375613	0.0336416	0.974981
Min	0.006464	0	0.009078	0.043502	0.0010758	0.0030072	0.0653366
Average	0.071033	0.0016283	0.058167955	0.4252903	0.0198362	0.0214204	0.7868012
SD	0.194808	0.0041915	0.04023166	0.2047143	0.0084355	0.0075949	0.2460779
Exogenous Variables	CAR	Location					
Max	0.16587970	1					
Min	0.00919197	0					
Average	0.05583732	0.40740741					
SD	0.03561009	0.50071174					
Year 2005							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				ROA	ROE	NIM	
Max	1	0.0533358	0.175027167	0.9943579	0.0239649	0.0389124	0.9768643
Min	0.005966	0	0.007908258	0.0215381	0.0006865	0.0122403	0.1220057
Average	0.069328	0.0180879	0.044665988	0.2632748	0.0090888	0.0240657	0.7839909
SD	0.194352	0.0118845	0.038687871	0.2506796	0.0075046	0.0068865	0.2377624
Exogenous Variables	CAR	location					
Max	0.15765856	1					
Min	0.00824010	0					
Average	0.04344249	0.42857143					
SD	0.03506416	0.50395263					
Year 2006							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				ROA	ROE	NIM	
Max	1	0.0461468	0.128526135	1.3141511	0.0318779	0.123034	0.9839859
Min	0.001026	0	-0.04398907	0.0622105	-0.048138	-0.032154	0.069334
Average	0.045672	0.0050065	0.014321773	0.749409	0.0055971	0.0179797	0.7726641
SD	0.152169	0.0097036	0.027325856	0.2926507	0.0144335	0.025028	0.265338
Exogenous Variables	CAR	location					
Max	0.12125783	1					
Min	-0.0481379	0					
Average	0.01420759	0.34693878					
SD	0.02692961	0.48092881					
Year 2007							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				ROA	ROE	NIM	
Max	1	0.0587014	0.120565449	1.0220056	0.0108088	0.054809	0.9914307

<sup>38</sup> The *size* variable is the total asset score of each branch. This rule is applied for both parametric and non-parametric approaches.

Min	0.001369	1.574E-05	-0.06255112	-2.204057	-0.0041968	-0.003696	0.1074372
Average	0.038721	0.0020409	0.020602216	0.1586771	0.0039231	0.0257406	0.8393447
SD	0.135711	0.0093518	0.023371048	0.4905894	0.0031819	0.010221	0.2160509
<b>Exogenous Variables</b>	<b>CAR</b>	<b>location</b>					
Max	0.11654522	1					
Min	-0.0716922	0					
Average	0.02059134	0.36065574					
SD	0.02352123	0.48417582					
<b>Year 2008</b>							
<b>Endogenous Variables</b>	<b>Size</b>	<b>quality</b>	<b>leverage</b>	<b>profit</b>			<b>Risk</b>
				<b>ROA</b>	<b>ROE</b>	<b>NIM</b>	
Max	1	0	0.115361712	0.9868735	0.00	0.015913	0.9913667
Min	0.001459	0	-0.06113065	-3.12881	0.00	0.0011922	0.108258
Average	0.041706	0	0.022589553	0.1818055	0.00	0.0072861	0.8275388
SD	0.137956	0	0.022651097	0.6251203	0.00	0.0032151	0.2230809
<b>Exogenous Variables</b>	<b>CAR</b>	<b>location</b>					
Max	0.10493238	1					
Min	-0.0663458	0					
Average	0.02191708	0.36065574					
SD	0.02183587	0.48417582					
<b>The entire period (2004-2008)</b>							
<b>Endogenous Variables</b>	<b>Size</b>	<b>quality</b>	<b>leverage</b>	<b>profit</b>			<b>Risk</b>
				<b>ROA</b>	<b>ROE</b>	<b>NIM</b>	
Max	1	0.0587014	0.187662639	1.3141511	0.0375613	0.123034	0.9914307
Min	0.001026	0	-0.06255112	-3.12881	-0.048138	-0.032154	0.0653366
Average	0.048594	0.0040899	0.027326974	0.3349251	0.0057536	0.0183666	0.8094659
SD	0.154713	0.0096798	0.031909161	0.5020792	0.0098782	0.0151925	0.2352632
<b>Exogenous Variables</b>	<b>CAR</b>	<b>location</b>					
Max	0.16587970	1					
Min	-0.0716922	0					
Average	0.02668441	0.36888889					
SD	0.03021964	0.48357958					

## APPENDIX 3.4

### The Endogenous and Exogenous Variables Used in the Non-Parametric Basic Model

Year 2004							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0166	0.1877	0.9869	0.0376	0.0336	0.9750
Min	0.006464	0.0000	0.0091	0.0435	0.0011	0.0030	0.0653
Average	0.071033	0.0028	0.0582	0.4253	0.0198	0.0214	0.7868
SD	0.194808	0.0038	0.0402	0.2047	0.0084	0.0076	0.2461
Exogenous Variables	<i>CAR</i>	<i>location</i>					
Max	0.1659	1.0000					
Min	0.0092	0.0000					
Average	0.0558	0.4074					
SD	0.0356	0.5007					
Year 2005							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0533	0.1750	0.9944	0.0240	0.0389	0.9769
Min	0.005966	0.0048	0.0079	0.0215	0.0007	0.0122	0.1220
Average	0.069328	0.0188	0.0460	0.2365	0.0091	0.0244	0.7906
SD	0.194352	0.0116	0.0388	0.2106	0.0076	0.0068	0.2397
Exogenous Variables	<i>CAR</i>	<i>location</i>					
Max	0.1577	1.0000					
Min	0.0082	0.0000					
Average	0.0447	0.4074					
SD	0.0351	0.5007					
Year 2006							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk
				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0461	0.1285	0.9978	0.0319	0.1230	0.9614
Min	0.015076	0.0008	0.0026	0.0957	0.0007	0.0061	0.0693
Average	0.114857	0.0095	0.0268	0.5849	0.0143	0.0339	0.7882
SD	0.220547	0.0110	0.0248	0.2375	0.0089	0.0205	0.2445
Exogenous Variables	<i>CAR</i>	<i>location</i>					
Max	0.1213	1.0000					
Min	0.0027	0.0000					
Average	0.0270	0.4074					
SD	0.0236	0.5007					
Year 2007							
Endogenous Variables	Size	quality	leverage	<i>profit</i>			Risk



<b>Variables</b>				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0452	0.1206	1.0220	0.0106	0.0548	0.9720
Min	0.024057	0.0001	(0.0626)	(1.5474)	(0.0037)	0.0190	0.1074
Average	0.122277	0.0020	0.0269	0.1302	0.0046	0.0312	0.8397
SD	0.218408	0.0086	0.0292	0.3851	0.0034	0.0084	0.2210
<b>Exogenous Variables</b>	<i>CAR</i>	<i>location</i>					
Max	0.1165	1.0000					
Min	(0.0717)	0.0000					
Average	0.0266	0.4074					
SD	0.0297	0.5007					
<b>Year 2008</b>							
<b>Endogenous Variables</b>	<i>Size</i>	<i>quality</i>	<i>leverage</i>	<i>profit</i>			<i>Risk</i>
				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0075	0.0765	0.9869	0.0000	0.0134	0.9664
Min	0.022964	0.0008	(0.0611)	(0.0295)	0.0000	0.0014	0.1083
Average	0.122561	0.0017	0.0277	0.2388	0.0000	0.0067	0.8263
SD	0.217583	0.0013	0.0240	0.1802	0.0000	0.0028	0.2336
<b>Exogenous Variables</b>	<i>CAR</i>	<i>location</i>					
Max	0.0721	1.0000					
Min	(0.0663)	0.0000					
Average	0.0267	0.4074					
SD	0.0241	0.5007					
<b>The entire period (2004-2008)</b>							
<b>Endogenous Variables</b>	<i>Size</i>	<i>quality</i>	<i>leverage</i>	<i>profit</i>			<i>Risk</i>
				<i>ROA</i>	<i>ROE</i>	<i>NIM</i>	
Max	1	0.0533	0.1877	1.0220	0.0376	0.1230	0.9769
Min	0.005966	0.0000	(0.0626)	(1.5474)	(0.0037)	0.0014	0.0653
Average	0.100011	0.0070	0.0371	0.3231	0.0096	0.0235	0.8063
SD	0.207792	0.0105	0.0342	0.2985	0.0096	0.0144	0.2346
<b>Exogenous Variables</b>	<i>CAR</i>	<i>location</i>					
Max	0.1659	1.0000					
Min	(0.0717)	0.0000					
Average	0.0362	0.4074					
SD	0.0320	0.4932					

## APPENDIX 3.5

### Multicollinearity Tests for Pilot Study

#### 1. Variance Inflation Factors for production efficiency frontier equation (6.1)

Variance Inflation Factors (ROE)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	0.067416	2.617278	1.467744***
CREDIT	0.000782	2103.049	7.347233*
FEEINCOME	0.000762	1625.574	6.669371*
FIXASSETS	0.000977	2449.304	4.259684**
LOCATION	0.000202	1.785694	1.126972***
QUALITY	0.598946	1.631890	1.422351***
RISK	0.001888	32.10823	2.490719***
SDEP	0.000484	1620.749	4.962303***
SIZE	0.004146	2.600263	2.365821***
TIME	3.26E-05	10.67723	1.366352***

#### 2. Variance Inflation Factors for production efficiency frontier equation (6.2)

Variance Inflation Factors (ROA)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	1.104465	3.953705	1.679545***
CREDIT	0.003395	1.808183	1.178313***
FEEINCOME	0.027360	4150.028	9.56780*
FIXASSETS	0.026697	4713.547	7.267614*
LOCATION	0.016951	3204.451	10.10609
QUALITY	13.99575	1.566989	1.407874***
RISK	0.041489	50.47499	2.924699***
SDEP	0.008035	1891.763	5.998228*
SIZE	0.078056	3.298925	2.879445***
TIME	0.000518	12.34637	1.618307***

(Location variable is not passed for the multicollinearity tests)

#### 3. Variance Inflation Factors for production efficiency frontier equation (6.3)

Variance Inflation Factors (NIM)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	1.959247	2001.120	9.729080*
CREDIT	8.65E-05	1.947824	1.219754***
EQUITY	0.000230	1524.965	9.516047*
FEEINCOME	0.000484	2633.843	8.674596*
FIXASSETS	0.000457	2902.798	4.707533***
LOCATION	0.000459	3132.985	10.39403
QUALITY	1.525825	1760.568	8.537787*
RISK	0.000818	35.27173	2.650360***
SDEP	0.000261	2204.018	6.972735*
SIZE	0.001542	2.655524	2.400328***
TIME	1.29E-05	10.63351	1.438508***

(Location variable is not passed for the multicollinearity tests)

#### 4. Variance Inflation Factors for cost efficiency frontier equation (6.5) for

##### Topex

Variance Inflation Factors (Topex)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	0.031976	3.936872	2.207760***
Credit	0.286045	3131922.	3881.652
Credit^2	0.000502	796241.9	3979.902
Credit*PriceCAP	0.004850	14317.48	7730.802
Credit*PriceDEP	0.004099	14122.50	13644.74
Feeincome*PriceCAP	0.001191	2273.353	1212.666
Feeincome*PriceDEP	0.000256	556.1381	537.4272
Feeincome	0.026453	190415.4	1414.880
Feeincome^2	7.46E-05	52392.00	1503.666
Location	7.96E-05	2.230169	1.407485***
PriceCAP	0.315361	6467.096	3532.334
PriceCAP^2	0.002938	13.52232	9.454462*
PriceDEP	0.211515	5111.839	4952.983
PriceDEP^2	0.005529	19.77548	12.80089
PriceDEP*PriceCAP	0.001988	12.27957	8.457798*
Quality	0.189130	1.634178	1.424345***
Risk	0.001735	93.59666	7.260538*
Sdep	0.170211	1806845.	5532.078
Sdep^2	0.000327	491894.1	6164.239
Sdep*PriceCAP	0.003756	10955.98	5991.243
Sdep*PriceDEP	0.002417	7728.273	7510.756
Size	0.003808	7.575107	6.892128*

(CAR, Location, Quality, Risk and Size are among variables that are passed for the multicollinearity tests. Hence, to remedy for the multicollinearity problem, the cost efficiency frontier equation (6.5) are run by the maximum likelihood estimation (MLE) rather than the OLS method)

#### 5. Variance Inflation Factors for cost efficiency frontier equation (6.5) for Opex

Variance Inflation Factors (Opex)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	0.031734	3.941144	2.210156***
Credit	0.283884	3135356.	3885.908
Credit^2	0.000498	797517.6	3986.278
Credit*PriceCAP	0.004808	14315.24	7729.591
Credit*PriceDEP	0.004063	14121.21	13643.49
Feeincome*PriceCAP	0.001178	2267.550	1209.571
Feeincome*PriceDEP	0.000253	554.7534	536.0890
Feeincome	0.026180	190089.9	1412.462
Feeincome^2	7.38E-05	52322.83	1501.681
Location	7.89E-05	2.230145	1.407469***
PriceCAP	0.312549	6465.293	3531.350
PriceCAP^2	0.002913	13.52407	9.455686*
PriceDEP	0.209680	5111.650	4952.800
PriceDEP^2	0.005476	19.75672	12.78874
PriceDEP*PriceCAP	0.001970	12.27518	8.454778*
Quality	0.199228	1.678926	1.423634***

Risk	0.001720	93.57951	7.259207*
Sdep	0.168624	1805602.	5528.271
Sdep^2	0.000324	491546.9	6159.888
Sdep*PriceCAP	0.003723	10951.90	5989.012
Sdep*PriceDEP	0.002395	7725.622	7508.179
Size	0.003772	7.567166	6.884904*

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(*CAR*, *Location*, *PriceCAP*<sup>2</sup>, *PriceDEP*\**PriceCAP*, *Quality*, *Risk* and *Size* are among variables that are passed for the multicollinearity tests. To remedy for the multicollinearity problem, the cost efficiency frontier equation (6.5) are run by the maximum likelihood estimation (MLE) rather than the OLS method)