

THE EFFECTS OF CORPORATE RESTRUCTURING STRATEGIES AND INDUSTRY UNCERTAINTY ON FIRM PERFORMANCE: EVIDENCE FROM LISTED NON-FINANCIAL FIRMS IN VIETNAM

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Appendix 1. Description and Measurement

Variable	Symbol	Measurement	Expected sign	Source
Dependent variable:				
Firm performance	ROA	Accounting-based performance of the firm		Kumaraswamy et al. (2019); Cascio et al. (2021); Forcadell et al. (2024); Girod and Whittington (2017)
Independent variable				
Asset retrenchment	CRA	$\text{Max}[0, (TA_{i,t-1} - TA_{it}) / TA_{i,t-1}]$	-	Robbins and Pearce (1992); Morrow et al. (2004); Cascio et al. (2021); Lim et al. (2013).
	CRA5	Takes the value of 1 if total assets decrease by at least 5%, and 0 otherwise		
Financial retrenchment	CRD	$\text{Max}[0, (Debt_{i,t-1} - Debt_{it}) / TA_{i,t-1}]$		Leary and Roberts (2005) Mansour et al. (2022); Koh et al. (2015); Flannery and Rangan (2006); Faulkender et al. (2012)
	CRD5	Takes the value of 1 if total debt decreases by at least 5%, and 0 otherwise		
Cost retrenchment	CRC	$\text{Max}[0, (SGA_{i,t-1} - SGA_{it}) / TA_{i,t-1}]$		Robbins and Pearce (1992); Morrow et al. (2004); Anderson et al. (2003); Banker & Byzalov (2014) Lim et al. (2013).
	CRC5	Takes the value of 1 if SG&A expenses decrease by at least 5%, and 0 otherwise		
Industry uncertainty Index	UI	$\Delta \ln(X_{it}) = \alpha_i + \beta_t + \varepsilon_{it}$ X_{it} = revenue (sale), cash flow (cf), and profit (pf) $UI_{\text{sale}} = SD(\varepsilon_{it})$ $UI_{\text{cf}} = SD(\varepsilon_{it})$ $UI_{\text{pf}} = SD(\varepsilon_{it})$ $UI = \text{PCA}(UI_{\text{sale}}, UI_{\text{cf}}, UI_{\text{pf}})$	+/-	Alfaro et al. (2024); Aprisma and Sudaryati (2020); Bloom (2009); Dan and Chung (2022).
Control variables:				
Lagged performance	ROA _{t-1}	Firm performance in the previous year	+	Girod and Whittington (2017); Cascio et al. (2021)

Variable	Symbol	Measurement	Expected sign	Source
Firm size	Size	Natural logarithm of total assets	-	Morrow et al. (2004); Cascio et al. (2021); Mansour et al. (2022) ; Koroma and Bein (2024)
Firm age	AGE	Number of years since listing	+/-	Mansour et al. (2022); Girod and Whittington (2017)
Capital structure	DE	Total debt to total equity	-	Koroma and Bein (2024); Forcadell et al. (2024); Girod and Whittington (2017)
Leverage	LevA	Total debt to total assets	+/-	Cascio et al. (2021) Denis and Kruse (2000); Girod and Whittington (2017)
Liquidity	Liq	Current assets to current liabilities	+	Morrow et al. (2004);
Sales growth	GSALE	$(Sales_t - Sales_{t-1})/Sales_{t-1}$	+	Mansour et al. (2022); Koroma and Bein (2024)
GDP	GDP	ln(annual GDP growth rate, %)	+/-	Cascio et al. (2021)

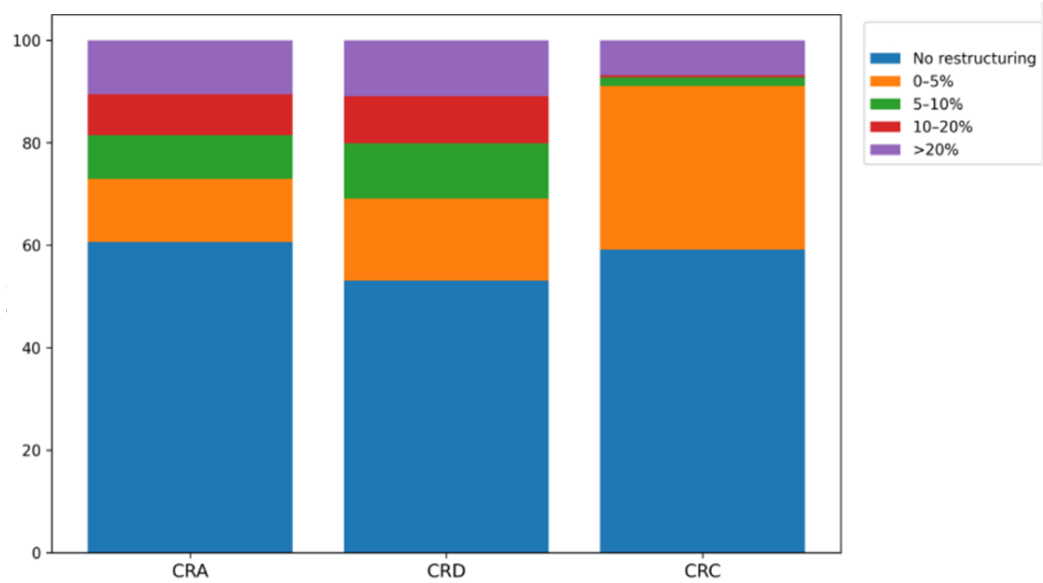
Appendix 2. Descriptive statistics, correlation matrix, multicollinearity test, and stationarity test

Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	VIF	Fisher-ADF
1.ROA	0.07	0.08	1.00													0.00
2.CRA	0.03	0.07	-0.20	1.00											3.97	0.00
3.CRD	0.04	0.07	-0.05	0.86	1.00										3.90	0.00
4.CRC	0.006	0.01	-0.03	0.13	0.11	1.00									1.04	0.00
5.UI*	0.008	1.69	-0.05	0.02	0.01	-0.01	1.00								1.03	0.00
6.sizeTA	27.50	1.56	-0.08	-0.13	-0.12	-0.11	0.07	1.00							1.17	0.00
7.DE	1.63	3.33	-0.20	0.01	-0.02	-0.02	0.03	0.11	1.00						1.30	0.00
8.LevA	0.48	0.21	-0.39	-0.03	-0.06	-0.04	0.03	0.30	0.46	1.00					2.01	0.00
9.Liq	2.91	28.66	0.17	0.008	0.01	0.02	0.02	-0.18	-0.17	-0.57	1.00				1.53	0.00
10.GSALE	0.12	1.34	0.05	-0.08	-0.06	-0.06	0.11	0.01	0.02	0.04	-0.01	1.00			1.03	0.00
11.AGE	7.24	5.19	-0.08	0.05	0.01	0.07	-0.09	0.10	-0.03	-0.07	0.04	-0.05	1.00		1.06	0.00
12.GDP	1.76	0.33	0.02	-0.02	-0.01	-0.05	0.001	-0.03	0.003	0.005	0.001	0.02	-0.10	1.00	1.02	0.00
Mean VIF															1.73	

Note: UI* is constructed using PCA from three UI components, including $SD(UI_{sale})$, $SD(UI_{cf})$, and $SD(UI_{pp})$. The first principal component is retained because its eigenvalue is 2.104 and it explains 70.13% of the total variance (Jolliffe, 2002);

Liq is winsorized at the 1st–99th percentiles due to its high dispersion, reducing outlier effects and improving

Appendix 3. Distribution of restructuring intensity under incremental adjustment patterns



Appendix 3. Results from stata

Appendix A.1

Fisher-type unit-root test for ROA
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots	Number of panels = 484
Ha: At least one panel is stationary	Avg. number of periods = 14.18
AR parameter: Panel-specific	Asymptotics: T -> Infinity
Panel means: Included	
Time trend: Not included	
Drift term: Not included	ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	2370.3450	0.0000
Inverse normal	Z	-16.9415	0.0000
Inverse logit t(2404)	L*	-22.2941	0.0000
Modified inv. chi-squared	Pm	31.8715	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for CRA
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 13.22

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	2947.8602	0.0000
Inverse normal	Z	-27.8840	0.0000
Inverse logit t(2254)	L*	-34.4981	0.0000
Modified inv. chi-squared	Pm	44.9968	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for CRD
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 13.22

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	3063.8174	0.0000
Inverse normal	Z	-29.6697	0.0000
Inverse logit t(2374)	L*	-35.2291	0.0000
Modified inv. chi-squared	Pm	47.6322	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for CRC
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 13.22

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	3343.1682	0.0000
Inverse normal	Z	-29.9110	0.0000
Inverse logit t(2339)	L*	-38.6979	0.0000
Modified inv. chi-squared	Pm	53.9811	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for UI_index
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 13.42

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	2992.3729	0.0000
Inverse normal	Z	-32.2426	0.0000
Inverse logit t(2404)	L*	-36.0969	0.0000
Modified inv. chi-squared	Pm	46.0085	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for sizeTA
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	1390.7768	0.0000
Inverse normal	Z	0.0894	0.5356
Inverse logit t(2389)	L*	-2.6284	0.0043
Modified inv. chi-squared	Pm	9.6086	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for DE
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	2538.7807	0.0000
Inverse normal	Z	-16.6733	0.0000
Inverse logit t(2389)	L*	-24.0989	0.0000
Modified inv. chi-squared	Pm	35.6996	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for LevA
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	1699.1496	0.0000
Inverse normal	Z	-8.3414	0.0000
Inverse logit t(2404)	L*	-10.9911	0.0000
Modified inv. chi-squared	Pm	16.6170	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for Liq_w
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	1533.4807	0.0000
Inverse normal	Z	-6.1212	0.0000
Inverse logit t(2389)	L*	-7.9228	0.0000
Modified inv. chi-squared	Pm	12.8518	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for GSALE
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 13.22

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	3734.5921	0.0000
Inverse normal	Z	-36.3965	0.0000
Inverse logit t(2394)	L*	-44.3072	0.0000
Modified inv. chi-squared	Pm	62.8771	0.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for AGE
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	10.8034	1.0000
Inverse normal	Z	20.1628	1.0000
Inverse logit t(659)	L*	20.2932	1.0000
Modified inv. chi-squared	Pm	-21.7545	1.0000

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for GDP
Based on augmented Dickey-Fuller tests

H0: All panels contain unit roots Number of panels = 484
Ha: At least one panel is stationary Avg. number of periods = 14.18

AR parameter: Panel-specific Asymptotics: T -> Infinity

Panel means: Included

Time trend: Not included

Drift term: Not included ADF regressions: 1 lag

		Statistic	p-value
Inverse chi-squared(968)	P	2266.9974	0.0000
Inverse normal	Z	-28.3056	0.0000
Inverse logit t(2404)	L*	-27.0518	0.0000
Modified inv. chi-squared	Pm	29.5227	0.0000

P statistic requires number of panels to be finite.

Other statistics are suitable for finite or infinite number of panels.

Appendix A.2

Source	SS	df	MS	Number of obs	=	6,399
Model	7.67535679	11	.697759708	F(11, 6387)	=	104.56
Residual	42.621688	6,387	.006673194	Prob > F	=	0.0000
				R-squared	=	0.1526
				Adj R-squared	=	0.1511
Total	50.2970448	6,398	.00786137	Root MSE	=	.08169

ROA	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
CRA	-.69247	.0270243	-25.62	0.000	-.7454467	-.6394933
CRD	.5163141	.0264632	19.51	0.000	.4644373	.5681909
CRC	-.0735895	.0598195	-1.23	0.219	-.1908557	.0436767
UI_index	-.0025878	.0006216	-4.16	0.000	-.0038063	-.0013692
sizeTA	-.0045803	.0006875	-6.66	0.000	-.005928	-.0032326
DE	-.004388	.0003968	-11.06	0.000	-.0051659	-.00361
LevE	-.0016042	.0011931	-1.34	0.179	-.003943	.0007346
Liq	-.0001573	.0000807	-1.95	0.051	-.0003155	8.82e-07
GSALE	.0024599	.0007683	3.20	0.001	.0009538	.003966
AGE	-.0009947	.0002065	-4.82	0.000	-.0013994	-.00059
GDP	.0018403	.002964	0.62	0.535	-.0039701	.0076507
_cons	.2173969	.0197531	11.01	0.000	.1786743	.2561195

```
. vif
```

Variable	VIF	1/VIF
CRA	4.06	0.246255
CRD	4.02	0.248604
LevE	1.74	0.573325
DE	1.68	0.595571
sizeTA	1.10	0.910942
AGE	1.06	0.942399
UI_index	1.04	0.957063
Liq	1.04	0.961047
CRC	1.04	0.962016
GSALE	1.03	0.971760
GDP	1.02	0.984697
Mean VIF	1.71	

```
. xtserial ROA CRA CRD CRC UI_index sizeTA DE LevE Liq GSALE AGE GDP
```

Wooldridge test for autocorrelation in panel data

H0: no first order autocorrelation

```
F( 1, 483) = 67.229
Prob > F = 0.0000
```

Appendix A.3 :

	ROA	CRA	CRD	CRC	UI_index	sizeTA	DE	LevE	Liq	GSALE	AGE	GDP
ROA	1.0000											
CRA	-0.2081***	1.0000										
CRD	-0.0546***	0.8555***	1.0000									
CRC	-0.0343***	0.1313***	0.1109***	1.0000								
UI_index	-0.0600***	0.0233*	0.0174	-0.0142	1.0000							
sizeTA	-0.0902***	-0.1376***	-0.1182***	-0.1183***	0.0685***	1.0000						
DE	-0.2117***	0.0175	-0.0259**	-0.0219*	0.0341***	0.1121***	1.0000					
LevE	-0.1455***	-0.0232*	-0.0474***	-0.0354***	0.1052***	0.1611***	0.6283***	1.0000				
Liq	0.0031	-0.0038	0.0908***	0.0009	0.1143***	-0.0558***	-0.0255**	-0.0121	1.0000			
GSALE	0.0521***	-0.0875***	-0.0650***	-0.0631***	0.1116***	0.0190	0.0261**	-0.0032	0.0257**	1.0000		
AGE	-0.0951***	0.0555***	0.0160	0.0702***	-0.0922***	0.1325***	-0.0436***	-0.0861***	-0.0185	-0.0537***	1.0000	
GDP	0.0277**	-0.0229*	-0.0166	-0.0578***	0.0004	-0.0374***	0.0016	0.0059	0.0012	0.0239*	-0.1213***	1.0000

Appendix A.4 :

```
. estpost summarize ROA CRA CRD CRC UI_index sizeTA DE LevE Liq GSALE AGE GDP
```

	e(count)	e(sum_w)	e(mean)	e(Var)	e(sd)	e(min)	e(max)	e(sum)
ROA	6862	6862	.0767418	.0079298	.0890494	-.8225222	.9937825	526.6025
CRA	6400	6400	.0348653	.005799	.076151	0	.875528	223.1381
CRD	6400	6400	.0402162	.0060647	.0778762	0	.8935491	257.3835
CRC	6400	6400	.005869	.0003029	.0174053	0	.4405787	37.56139
UI_index	6493	6493	.0080018	2.87434	1.695388	-.5492254	17.30069	51.95594
sizeTA	6862	6862	27.50203	2.435016	1.560454	22.58688	34.36037	188718.9
DE	6861	6861	1.630726	11.10141	3.331877	-4.831419	140.0325	11188.41
LevE	6861	6861	.3774915	1.652206	1.285382	-1.171001	58.3005	2589.969
Liq	6861	6861	2.910196	821.4672	28.66125	.0971288	2121.488	19966.85
GSALE	6400	6400	.1223885	1.818036	1.348346	-5.997035	91.63306	783.2862
AGE	6862	6862	7.246138	26.99188	5.195371	0	24	49723
GDP	6862	6862	1.763534	.1134501	.3368235	.9375545	2.470325	12101.37

Appendix A.5 :

Code Level-2 Industry Name according to FiinPro

L2_2 Real Estate

L2_5 Electricity, Water & Oil and Gas

L2_7 Industrial Goods and Services

L2_8 Personal and Household Goods

L2_9 Chemicals

L2_11 Basic Resources

L2_12 Food and Beverages

L2_15 Construction and Materials

tab year sector if inrange(year,2010,2024)

Nam	sector								Total
	L2_11	L2_12	L2_15	L2_2	L2_5	L2_7	L2_8	L2_9	
2010	41	38	100	50	38	78	24	0	369
2011	43	39	103	50	41	81	24	26	407
2012	43	41	103	56	42	83	24	29	421
2013	44	42	105	58	45	84	24	30	432
2014	46	42	111	60	49	87	26	32	453
2015	48	44	111	63	49	87	27	33	462
2016	50	45	112	64	49	89	28	34	471
2017	51	45	112	65	51	89	28	34	475
2018	51	45	113	66	51	90	28	34	478
2019	51	45	114	66	52	90	28	34	480
2020	51	44	114	66	52	91	29	36	483
2021	51	44	114	66	52	91	29	36	483
2022	51	44	114	66	52	91	29	36	483
2023	51	44	114	66	52	91	29	36	483
2024	50	44	114	66	52	91	29	36	482
Total	722	646	1,654	928	727	1,313	406	466	6,862

Appendix A.6: Industry-level uncertainty index

Nam	sector								Total
	L2_11	L2_12	L2_15	L2_2	L2_5	L2_7	L2_8	L2_9	
2010	.	.	.	.	.	.	.	.	.
2011	.5535259	-.084956	-.4309193	.2156989	-.2854515	-.4362605	-.4353567	.0079827	-.1729558
2012	-.0069026	-.2912915	-.4299633	-.4201445	-.1365184	-.4060257	-.1534246	.0537831	-.2888609
2013	-.3818907	-.2516321	-.4452029	17.30069	-.4016125	-.4807644	-.5488148	-.1703392	1.973572
2014	-.3203507	-.4119636	-.366204	.7764389	-.4247184	-.3577532	-.4961039	-.247318	-.2182109
2015	-.2248284	-.3508992	-.2800163	.9814541	-.0530145	-.3238642	-.3131184	-.2932111	-.0960727
2016	-.1994356	-.2132058	.0583329	.807106	-.4264802	-.174461	-.1778858	-.2893053	-.0267934
2017	-.133307	-.3756461	-.3663718	.8477124	-.4747591	1.318911	-.2495319	-.2688039	.1419138
2018	-.2680781	-.3882598	-.4183804	.7734269	-.4910706	-.4560841	-.3168892	-.0061427	-.2145364
2019	-.1260755	-.4003385	-.3458235	.7310517	-.5202267	-.4444498	-.4941442	-.3147971	-.2233562
2020	-.3522883	-.415976	-.3201733	.722467	-.3669781	-.2188172	-.3472026	-.473757	-.1888321
2021	.2164473	-.3156084	-.3415098	.7116777	-.254933	-.3371993	-.4723879	.1394286	-.0982005
2022	.8057562	-.1624022	-.3271623	.7460792	.1052552	-.096605	-.4451766	-.2255115	.0446093
2023	.1783466	-.5028599	-.4616359	.6941078	-.5010097	-.1273964	-.4563576	-.188598	-.1604866
2024	-.191614	-.5128279	-.4625279	.7120166	-.5492254	-.2766652	-.4133066	-.3391917	-.2402765
Total	-.0323317	-.3364766	-.3516293	1.756111	-.344853	-.1976294	-.3801842	-.1930802	.0080018

Appendix A.7:

. *PCA trên biến bất định chưa chuẩn hóa

. pca UC_sale_ind UC_cf_ind UC_pf_ind

Principal components/correlation Number of obs = 6,493
 Number of comp. = 3
 Trace = 3
 Rho = 1.0000
 Rotation: (unrotated = principal)

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	2.10392	1.2308	0.7013	0.7013
Comp2	.873119	.850154	0.2910	0.9923
Comp3	.0229646	.	0.0077	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Unexplained
UC_sale_ind	0.3221	0.9462	0.0306	0
UC_cf_ind	0.6725	-0.2059	-0.7109	0
UC_pf_ind	0.6664	-0.2496	0.7026	0

. pca Z_UC_sale_ind Z_UC_cf_ind Z_UC_pf_ind

Principal components/correlation Number of obs = 6,493
 Number of comp. = 3
 Trace = 3
 Rho = 1.0000
 Rotation: (unrotated = principal)

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	2.10392	1.2308	0.7013	0.7013
Comp2	.873119	.850154	0.2910	0.9923
Comp3	.0229646	.	0.0077	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Unexplained
Z_UC_sale_ind	0.3221	0.9462	0.0306	0
Z_UC_cf_ind	0.6725	-0.2059	-0.7109	0
Z_UC_pf_ind	0.6664	-0.2496	0.7026	0

Appendix A.8:

tab UI_high			
UI_high	Freq.	Percent	Cum.
0	3,346	48.76	48.76
1	3,516	51.24	100.00
Total	6,862	100.00	

CRA_group	UI_high_ind		Total
	0	1	
No restructuring	2,086 63.12	2,074 65.06	4,160 64.07
0-5%	443 13.40	398 12.48	841 12.95
5-10%	325 9.83	263 8.25	588 9.06
10-20%	276 8.35	271 8.50	547 8.42
>20%	175 5.30	182 5.71	357 5.50
Total	3,305 100.00	3,188 100.00	6,493 100.00

CRA_group	UI_high		Total
	0	1	
No restructuring	2,069 61.84	2,091 59.47	4,160 60.62
0-5%	461 13.78	380 10.81	841 12.26
5-10%	337 10.07	251 7.14	588 8.57
10-20%	301 9.00	246 7.00	547 7.97
>20%	178 5.32	548 15.59	726 10.58
Total	3,346 100.00	3,516 100.00	6,862 100.00

CRD_group	UI_high_ind		Total
	0	1	
No restructuring	1,814 54.89	1,828 57.34	3,642 56.09
0-5%	586 17.73	512 16.06	1,098 16.91
5-10%	417 12.62	324 10.16	741 11.41
10-20%	298 9.02	333 10.45	631 9.72
>20%	190 5.75	191 5.99	381 5.87
Total	3,305 100.00	3,188 100.00	6,493 100.00

CRD_group	UI_high		Total
	0	1	
No restructuring	1,817 54.30	1,825 51.91	3,642 53.07
0-5%	591 17.66	507 14.42	1,098 16.00
5-10%	425 12.70	316 8.99	741 10.80
10-20%	322 9.62	309 8.79	631 9.20
>20%	191 5.71	559 15.90	750 10.93
Total	3,346 100.00	3,516 100.00	6,862 100.00

CRC_group	UI_high_ind		Total
	0	1	
No restructuring	2,048 61.97	2,011 63.08	4,059 62.51
0-5%	1,127 34.10	1,063 33.34	2,190 33.73
5-10%	60 1.82	55 1.73	115 1.77
10-20%	15 0.45	14 0.44	29 0.45
>20%	55 1.66	45 1.41	100 1.54
Total	3,305 100.00	3,188 100.00	6,493 100.00

CRC_group	UI_high		Total
	0	1	
No restructuring	2,063 61.66	1,996 56.77	4,059 59.15
0-5%	1,160 34.67	1,030 29.29	2,190 31.91
5-10%	55 1.64	60 1.71	115 1.68
10-20%	16 0.48	13 0.37	29 0.42
>20%	52 1.55	417 11.86	469 6.83
Total	3,346 100.00	3,516 100.00	6,862 100.00

Appendix B.1: CRA

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	6376
Time variable : year	Number of groups	=	484
Number of instruments = 38	Obs per group: min	=	4
F(23, 483)	avg	=	13.17
Prob > F	max	=	14

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA L1.	.6339673	.1245267	5.09	0.000	.3892863	.8786483
CRA	-.5282022	.2625156	-2.01	0.045	-1.044016	-.0123885
UI_index	.0149229	.0083588	1.79	0.075	-.0015012	.0313471
sizeTA	-.0110761	.00585	-1.89	0.059	-.0225707	.0004185
DE	-.0067417	.0039944	-1.69	0.092	-.0145903	.0011069
LevA	.1373328	.0752103	1.83	0.068	-.010447	.2851126
Liq_w	.0009445	.0021866	0.43	0.666	-.0033519	.0052409
GSALE	.0073081	.010579	0.69	0.490	-.0134783	.0280946
AGE	.0015213	.0016901	0.90	0.369	-.0017996	.0048421
GDP	.7230232	.8631171	0.84	0.403	-.972905	2.418951
year						
2011	.1907376	.2578239	0.74	0.460	-.3158573	.6973326
2012	.318165	.3885945	0.82	0.413	-.4453796	1.08171
2013	.286151	.3810535	0.75	0.453	-.4625764	1.034878
2014	.214668	.2542944	0.84	0.399	-.284992	.7143279
2015	.1581691	.1809872	0.87	0.383	-.1974504	.5137886
2016	.178694	.2164255	0.83	0.409	-.2465579	.6039458
2017	.1479506	.1837443	0.81	0.421	-.2130862	.5089875
2018	.1002629	.1199868	0.84	0.404	-.1354977	.3360236
2019	.1143182	.1310963	0.87	0.384	-.1432713	.3719078
2020	.7898575	.9431594	0.84	0.403	-1.063345	2.64306
2021	.8816895	1.041669	0.85	0.398	-1.165073	2.928452
2023	.3739119	.4493647	0.83	0.406	-.5090391	1.256863
2024	.1333553	.1553213	0.86	0.391	-.1718337	.4385443
_cons	-1.272512	1.933553	-0.66	0.511	-5.071727	2.526702

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(2/5).(LevA L.Liq_w) collapsed

L(2/3).(L2.ROA L.CRA UI_index L2.sizeTA) collapsed

Instruments for levels equation

Standard

DE GDP 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year

2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year

2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(LevA L.Liq_w) collapsed

DL.(L2.ROA L.CRA UI_index L2.sizeTA) collapsed

Arellano-Bond test for AR(1) in first differences: z = -5.13 Pr > z = 0.000

Arellano-Bond test for AR(2) in first differences: z = 0.83 Pr > z = 0.407

Sargan test of overid. restrictions: chi2(14) = 9.56 Prob > chi2 = 0.794
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(14) = 9.99 Prob > chi2 = 0.763
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(8) = 6.78 Prob > chi2 = 0.560

Difference (null H = exogenous): chi2(6) = 3.21 Prob > chi2 = 0.783

gmm(L2.ROA L.CRA UI_index L2.sizeTA, collapse lag(2 3))

Hansen test excluding group: chi2(2) = 1.32 Prob > chi2 = 0.518

Difference (null H = exogenous): chi2(12) = 8.67 Prob > chi2 = 0.731

gmm(LevA L.Liq_w, collapse lag(2 5))

Hansen test excluding group: chi2(4) = 0.42 Prob > chi2 = 0.981

Difference (null H = exogenous): chi2(10) = 9.57 Prob > chi2 = 0.479

Appendix B.2: CRD

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	5891
Time variable : year	Number of groups	=	484
Number of instruments = 37	Obs per group: min	=	3
F(22, 483)	avg	=	12.17
Prob > F	max	=	13

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA						
L1.	.8204621	.1485843	5.52	0.000	.5285106	1.112413
CRD	.1037743	.0516695	2.01	0.045	.0022495	.205299
UI_index	.0110761	.0060968	1.82	0.070	-.0009035	.0230557
sizeTA	-.0051631	.0024968	-2.07	0.039	-.0100691	-.0002571
DE	-.0028865	.0023335	-1.24	0.217	-.0074715	.0016985
LevA	.0662452	.0454378	1.46	0.146	-.023035	.1555254
Liq_w	.0033427	.0020774	1.61	0.108	-.0007392	.0074246
GSALE	-.0129913	.0195751	-0.66	0.507	-.0514542	.0254715
AGE	-.0000295	.0003732	-0.08	0.937	-.0007628	.0007037
GDP	1.157766	1.18921	0.97	0.331	-1.178899	3.49443
year						
2011	0	(omitted)				
2012	.4945024	.52055	0.95	0.343	-.5283199	1.517325
2013	.4748367	.5123319	0.93	0.354	-.5318379	1.481511
2014	.3349095	.3372327	0.99	0.321	-.3277149	.9975338
2015	.2406265	.2375351	1.01	0.312	-.2261032	.7073563
2016	.2800748	.2891975	0.97	0.333	-.2881658	.8483154
2017	.2405306	.2457455	0.98	0.328	-.2423316	.7233929
2018	.1577612	.1585507	1.00	0.320	-.1537731	.4692955
2019	.1686552	.1758815	0.96	0.338	-.1769321	.5142425
2020	1.2601	1.296681	0.97	0.332	-1.287733	3.807932
2021	1.407191	1.434015	0.98	0.327	-1.410488	4.22487
2023	.5927062	.6206776	0.95	0.340	-.6268556	1.812268
2024	.2185775	.2193701	1.00	0.320	-.2124602	.6496151
_cons	-2.364712	2.552788	-0.93	0.355	-7.380653	2.65123

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(2/4).(L.LevA L2.GSALE L2.sizeTA) collapsed

L(2/4).(L2.ROA UI_index) collapsed

Instruments for levels equation

Standard

DE L2.Liq_w L.AGE L.GDP 2010b.year 2011.year 2012.year 2013.year 2014.year

2015.year 2016.year 2017.year 2018.year 2019.year 2020.year 2021.year

2022.year 2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(L.LevA L2.GSALE L2.sizeTA) collapsed

DL.(L2.ROA UI_index) collapsed

Arellano-Bond test for AR(1) in first differences: z = -4.62 Pr > z = 0.000

Arellano-Bond test for AR(2) in first differences: z = 0.78 Pr > z = 0.432

Sargan test of overid. restrictions: chi2(13) = 12.01 Prob > chi2 = 0.526
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(13) = 11.61 Prob > chi2 = 0.560
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(9) = 8.00 Prob > chi2 = 0.535

Difference (null H = exogenous): chi2(4) = 3.61 Prob > chi2 = 0.461

gmm(L2.ROA UI_index, collapse lag(2 4))

Hansen test excluding group: chi2(6) = 4.04 Prob > chi2 = 0.671

Difference (null H = exogenous): chi2(7) = 7.56 Prob > chi2 = 0.373

gmm(L.LevA L2.GSALE L2.sizeTA, collapse lag(2 4))

Hansen test excluding group: chi2(2) = 2.88 Prob > chi2 = 0.237

Difference (null H = exogenous): chi2(11) = 8.72 Prob > chi2 = 0.648

Appendix B.3: CRC

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	5914
Time variable : year	Number of groups	=	484
Number of instruments = 39	Obs per group: min	=	3
F(22, 483) = 97.30	avg	=	12.22
Prob > F = 0.000	max	=	13

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA						
L1.	.3919882	.2056193	1.91	0.057	-.0120307	.7960071
CRC	-1.183435	.7167357	-1.65	0.099	-2.59174	.2248705
UI_index	-.0099777	.0044495	-2.24	0.025	-.0187204	-.0012349
sizeTA	.0091652	.0107315	0.85	0.394	-.011921	.0302513
DE	.0133602	.0062987	2.12	0.034	.000984	.0257365
LevA	-.3331974	.1065745	-3.13	0.002	-.5426042	-.1237905
Liq_w	-.0089022	.0042936	-2.07	0.039	-.0173387	-.0004657
GSALE	.0041498	.013713	0.30	0.762	-.0227947	.0310944
AGE	-.0019116	.0010629	-1.80	0.073	-.004	.0001768
GDP	-2.807315	4.111087	-0.68	0.495	-10.88514	5.27051
year						
2011	-.7981437	1.175921	-0.68	0.498	-3.108697	1.51241
2012	-1.230882	1.80399	-0.68	0.495	-4.77552	2.313755
2013	-1.179929	1.767162	-0.67	0.505	-4.652205	2.292346
2014	-.7868739	1.170794	-0.67	0.502	-3.087353	1.513606
2015	-.5420157	.8239747	-0.66	0.511	-2.161033	1.077002
2016	-.6741656	1.001804	-0.67	0.501	-2.642598	1.294266
2017	-.5650452	.8513655	-0.66	0.507	-2.237883	1.107792
2018	-.3692159	.551701	-0.67	0.504	-1.453246	.7148144
2019	-.4112973	.6098992	-0.67	0.500	-1.609681	.7870862
2020	-3.055229	4.486387	-0.68	0.496	-11.87048	5.760018
2021	-3.369971	4.960512	-0.68	0.497	-13.11682	6.376877
2023	-1.467309	2.145758	-0.68	0.494	-5.683483	2.748865
2024	-.5153771	.7618083	-0.68	0.499	-2.012245	.9814905
_cons	5.984555	8.798033	0.68	0.497	-11.30259	23.2717

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(2/4).(sizeTA AGE L.DE) collapsed

L(2/4).(L2.ROA L.CRC UI_index) collapsed

Instruments for levels equation

Standard

L.GSALE Liq_w 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year

2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year

2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(sizeTA AGE L.DE) collapsed

DL.(L2.ROA L.CRC UI_index) collapsed

Arellano-Bond test for AR(1) in first differences: z = -2.87 Pr > z = 0.004

Arellano-Bond test for AR(2) in first differences: z = -0.89 Pr > z = 0.371

Sargan test of overid. restrictions: chi2(15) = 11.51 Prob > chi2 = 0.716
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(15) = 11.19 Prob > chi2 = 0.739
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(9) = 8.40 Prob > chi2 = 0.494

Difference (null H = exogenous): chi2(6) = 2.79 Prob > chi2 = 0.835

gmm(L2.ROA L.CRC UI_index, collapse lag(2 4))

Hansen test excluding group: chi2(3) = 1.79 Prob > chi2 = 0.618

Difference (null H = exogenous): chi2(12) = 9.40 Prob > chi2 = 0.668

iv(L.GSALE Liq_w 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year 2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year 2023.year 2024.year, eq(level))

Hansen test excluding group: chi2(1) = 0.17 Prob > chi2 = 0.677

Difference (null H = exogenous): chi2(14) = 11.02 Prob > chi2 = 0.685

Group variable: fid	Number of obs	=	5914
Time variable : year	Number of groups	=	484
Number of instruments = 39	Obs per group: min	=	3
F(22, 483) = 97.30		avg =	12.22
Prob > F = 0.000		max =	13

```
Instruments for first differences equation
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    L(2/4).(sizeTA AGE L.DE) collapsed
    L(2/4).(L2.ROA L.CRC UI index) collapsed
Instruments for levels equation
  Standard
    L.GSALE Liq_w 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year
    2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year
    2023.year 2024.year
    _cons
  GMM-type (missing=0, separate instruments for each period unless collapsed)
    DL.(sizeTA AGE L.DE) collapsed
    DL.(L2.ROA L.CRC UI index) collapsed
```

Sargan test of overid. restrictions: $\chi^2(15) = 11.51$ Prob > $\chi^2 = 0.716$
(Not robust, but not weakened by many instruments.)
Hansen test of overid. restrictions: $\chi^2(15) = 11.19$ Prob > $\chi^2 = 0.739$
(Robust, but weakened by many instruments.)

```
GMM instruments for levels
  Hansen test excluding group:   chi2(9)   =   8.40   Prob > chi2 =   0.494
  Difference (null H = exogenous): chi2(6)   =   2.79   Prob > chi2 =   0.835
gmm(L2.ROA L.CRC UI_index, collapse lag(2 4))
  Hansen test excluding group:   chi2(3)   =   1.79   Prob > chi2 =   0.618
  Difference (null H = exogenous): chi2(12) =   9.40   Prob > chi2 =   0.668
iv(L.SALE Liq_w 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year 2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year 2023.year 2024.year, eq(level))
  Hansen test excluding group:   chi2(1)   =   0.17   Prob > chi2 =   0.677
  Difference (null H = exogenous): chi2(14) =  11.02   Prob > chi2 =   0.685
```

Appendix B.4: CRA-CRD-CRC

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	6376
Time variable : year	Number of groups	=	484
Number of instruments = 57	Obs per group: min	=	4
F(25, 483) = 128.43	avg	=	13.17
Prob > F = 0.000	max	=	14

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA						
L1.	.6005813	.0842866	7.13	0.000	.4349676	.7661949
CRA	-.5102495	.2311837	-2.21	0.028	-.9644995	-.0559995
CRD	.327211	.1490034	2.20	0.029	.0344362	.6199859
CRC	1.211428	.7001916	1.73	0.084	-.16437	2.587226
UI_index	.0110807	.0051604	2.15	0.032	.0009411	.0212202
sizeTA	.0029329	.0043847	0.67	0.504	-.0056824	.0115483
DE	.0069957	.0040373	1.73	0.084	-.0009372	.0149286
LevA	-.0778397	.0459671	-1.69	0.091	-.1681599	.0124806
Liq_w	-.0002625	.002073	-0.13	0.899	-.0043357	.0038108
GSALE	-.0101299	.0113162	-0.90	0.371	-.032365	.0121052
AGE	-.0003504	.0004474	-0.78	0.434	-.0012294	.0005286
GDP	-.0507151	.3637321	-0.14	0.889	-.7654079	.6639776
year						
2011	-.0160655	.1068032	-0.15	0.880	-.2259219	.1937908
2012	-.0226757	.1609893	-0.14	0.888	-.3390016	.2936503
2013	-.0409664	.1550978	-0.26	0.792	-.3457162	.2637834
2014	-.0080004	.1053566	-0.08	0.940	-.2150144	.1990135
2015	-.0024791	.0744236	-0.03	0.973	-.1487131	.1437549
2016	-.010171	.0897663	-0.11	0.910	-.1865518	.1662097
2017	-.0126249	.0762869	-0.17	0.869	-.1625202	.1372703
2018	-.0041448	.0492864	-0.08	0.933	-.1009871	.0926975
2019	-.0041847	.0544496	-0.08	0.939	-.1111172	.1028026
2020	-.0588208	.3962872	-0.15	0.882	-.8374807	.719839
2021	-.0594316	.4377497	-0.14	0.892	-.9195606	.8006975
2023	-.0407731	.1887825	-0.22	0.829	-.4117095	.3301634
2024	-.0068266	.0668119	-0.10	0.919	-.1381044	.1244513
_cons	.0858005	.826425	0.10	0.917	-1.538032	1.709633

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)
L(2/5).(L.CRD L.GSALE L.DE L.LevA) collapsed

L(2/4).(L.ROA CRC CRA sizeTA UI_index) collapsed

Instruments for levels equation

Standard

Liq_w AGE GDP 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year
2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year
2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(L.CRD L.GSALE L.DE L.LevA) collapsed

DL.(L.ROA CRC CRA sizeTA UI_index) collapsed

Arellano-Bond test for AR(1) in first differences: z = -5.03 Pr > z = 0.000

Arellano-Bond test for AR(2) in first differences: z = 0.30 Pr > z = 0.764

Sargan test of overid. restrictions: chi2(31) = 31.02 Prob > chi2 = 0.465
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(31) = 27.65 Prob > chi2 = 0.639
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(22) = 21.30 Prob > chi2 = 0.502

Difference (null H = exogenous): chi2(9) = 6.35 Prob > chi2 = 0.704

gmm(L.ROA CRC CRA sizeTA UI_index, collapse lag(2 4))

Hansen test excluding group: chi2(11) = 8.00 Prob > chi2 = 0.713

Difference (null H = exogenous): chi2(20) = 19.65 Prob > chi2 = 0.480

gmm(L.CRD L.GSALE L.DE L.LevA, collapse lag(2 5))

Hansen test excluding group: chi2(11) = 6.15 Prob > chi2 = 0.863

Difference (null H = exogenous): chi2(20) = 21.50 Prob > chi2 = 0.368

iv(Liq_w AGE GDP 2010b.year 2011.year 2012.year 2013.year 2014.year 2015.year 2016.year 2017.year 2018.year 2019.year 2020.year 2021.year 2022.year 2023.year 2024.year, eq(level))

Hansen test excluding group: chi2(14) = 10.09 Prob > chi2 = 0.756

Difference (null H = exogenous): chi2(17) = 17.57 Prob > chi2 = 0.417

Appendix B.5 : ROA_UI_high

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	2894
Time variable : year	Number of groups	=	481
Number of instruments = 40	Obs per group: min	=	1
F(11, 480) = 106.82	avg	=	6.02
Prob > F = 0.000	max	=	13

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA L1.	.3174108	.1235142	2.57	0.010	.0747155	.5601061
CRA	-.1038751	.1988845	-0.52	0.602	-.4946669	.2869168
CRD	.0834042	.0775817	1.08	0.283	-.0690375	.235846
CRC	.1446981	.5181445	0.28	0.780	-.8734135	1.16281
sizeTA	-.0034987	.0045997	-0.76	0.447	-.0125369	.0055394
DE	.0031826	.0033244	0.96	0.339	-.0033496	.0097147
LevA	-.0040152	.0362135	-0.11	0.912	-.0751719	.0671414
Liq_w	.0041329	.0026363	1.57	0.118	-.0010472	.009313
GSALE	.011976	.0073197	1.64	0.102	-.0024067	.0263586
AGE	-.0004604	.0005173	-0.89	0.374	-.0014769	.0005561
GDP	-.0104837	.004924	-2.13	0.034	-.020159	-.0008085
_cons	.1537899	.1285191	1.20	0.232	-.0987396	.4063194

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(3/6).(CRD GSALE DE LevA) collapsed

L(2/4).(L.ROA CRC CRA sizeTA) collapsed

Instruments for levels equation

Standard

Liq_w AGE GDP

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL2.(CRD GSALE DE LevA) collapsed

DL.(L.ROA CRC CRA sizeTA) collapsed

Arellano-Bond test for AR(1) in first differences: z = -3.29 Pr > z = 0.001

Arellano-Bond test for AR(2) in first differences: z = 0.63 Pr > z = 0.531

Sargan test of overid. restrictions: chi2(28) = 20.65 Prob > chi2 = 0.840
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(28) = 23.07 Prob > chi2 = 0.729
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(20) = 20.21 Prob > chi2 = 0.445

Difference (null H = exogenous): chi2(8) = 2.86 Prob > chi2 = 0.943

gmm(L.ROA CRC CRA sizeTA, collapse lag(2 4))

Hansen test excluding group: chi2(12) = 10.09 Prob > chi2 = 0.608

Difference (null H = exogenous): chi2(16) = 12.98 Prob > chi2 = 0.674

gmm(CRD GSALE DE LevA, collapse lag(3 6))

Hansen test excluding group: chi2(8) = 4.48 Prob > chi2 = 0.811

Difference (null H = exogenous): chi2(20) = 18.59 Prob > chi2 = 0.549

iv(Liq_w AGE GDP, eq(level))

Hansen test excluding group: chi2(25) = 19.60 Prob > chi2 = 0.768

Difference (null H = exogenous): chi2(3) = 3.47 Prob > chi2 = 0.324

.

Appendix B.6: ROA_UI_low

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	3482
Time variable : year	Number of groups	=	468
Number of instruments = 40	Obs per group: min	=	1
F(11, 467) = 157.45	avg	=	7.44
Prob > F = 0.000	max	=	12

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA L1.	.2906629	.0824289	3.53	0.000	.1286854	.4526405
CRA	-.7524118	.297601	-2.53	0.012	-1.337215	-.167609
CRD	.7387631	.2644905	2.79	0.005	.2190242	1.258502
CRC	.7462404	.462539	1.61	0.107	-.1626751	1.655156
sizeTA	.0016096	.0076565	0.21	0.834	-.0134358	.0166549
DE	-.0060326	.0055666	-1.08	0.279	-.0169714	.0049061
LevA	-.0227813	.0755079	-0.30	0.763	-.1711586	.1255959
Liq_w	.0018256	.002821	0.65	0.518	-.0037179	.0073691
GSALE	.0096436	.0072847	1.32	0.186	-.0046712	.0239584
AGE	-.0004841	.0006383	-0.76	0.449	-.0017383	.0007701
GDP	.008568	.00329	2.60	0.010	.002103	.015033
_cons	.004848	.1932991	0.03	0.980	-.3749958	.3846917

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(3/6).(CRD GSALE DE LevA) collapsed

L(2/4).(L.ROA CRC CRA sizeTA) collapsed

Instruments for levels equation

Standard

Liq_w AGE GDP

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL2.(CRD GSALE DE LevA) collapsed

DL.(L.ROA CRC CRA sizeTA) collapsed

Arellano-Bond test for AR(1) in first differences: z = -2.94 Pr > z = 0.003

Arellano-Bond test for AR(2) in first differences: z = -0.31 Pr > z = 0.758

Sargan test of overid. restrictions: chi2(28) = 51.77 Prob > chi2 = 0.004
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(28) = 35.91 Prob > chi2 = 0.145
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(20) = 24.85 Prob > chi2 = 0.207

Difference (null H = exogenous): chi2(8) = 11.06 Prob > chi2 = 0.198

gmm(L.ROA CRC CRA sizeTA, collapse lag(2 4))

Hansen test excluding group: chi2(12) = 21.63 Prob > chi2 = 0.042

Difference (null H = exogenous): chi2(16) = 14.28 Prob > chi2 = 0.578

gmm(CRD GSALE DE LevA, collapse lag(3 6))

Hansen test excluding group: chi2(8) = 3.03 Prob > chi2 = 0.932

Difference (null H = exogenous): chi2(20) = 32.88 Prob > chi2 = 0.035

iv(Liq_w AGE GDP, eq(level))

Hansen test excluding group: chi2(25) = 26.82 Prob > chi2 = 0.365

Difference (null H = exogenous): chi2(3) = 9.09 Prob > chi2 = 0.028

Appendix C.1: ROA threshold 5%

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	6376
Time variable : year	Number of groups	=	484
Number of instruments = 41	Obs per group: min	=	4
F(25, 483) = 118.17	avg	=	13.17
Prob > F = 0.000	max	=	14

ROA	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROA L1.	.5920038	.085678	6.91	0.000	.4236561	.7603515
CRA5	-.1392204	.0504681	-2.76	0.006	-.2383844	-.0400563
CRD5	.0898898	.0326247	2.76	0.006	.0257859	.1539936
CRC5	.0160625	.0096897	1.66	0.098	-.0029766	.0351016
UI_index	.015811	.0068842	2.30	0.022	.0022842	.0293377
sizeTA	-.005451	.0076149	-0.72	0.474	-.0204135	.0095115
DE	.0156382	.0058757	2.66	0.008	.0040932	.0271833
LevA	-.2432296	.0928189	-2.62	0.009	-.4256082	-.0608509
Liq_w	-.0078378	.0037218	-2.11	0.036	-.0151507	-.0005248
GSALE	-.0190296	.0148054	-1.29	0.199	-.0481206	.0100615
AGE	-.0001137	.0004399	-0.26	0.796	-.0009782	.0007507
GDP	-.8598279	2.791365	-0.31	0.758	-6.344546	4.62489
year						
2011	-.248534	.8005037	-0.31	0.756	-1.821434	1.324366
2012	-.3757185	1.227014	-0.31	0.760	-2.786662	2.035225
2013	-.3994162	1.192397	-0.33	0.738	-2.742342	1.94351
2014	-.2378673	.7957183	-0.30	0.765	-1.801364	1.32563
2015	-.1590497	.5602787	-0.28	0.777	-1.259934	.941835
2016	-.2069184	.6801862	-0.30	0.761	-1.543408	1.129571
2017	-.1752868	.5775256	-0.30	0.762	-1.31006	.9594862
2018	-.1075849	.3750608	-0.29	0.774	-.8445373	.6293674
2019	-.1218771	.4149154	-0.29	0.769	-.9371392	.693385
2020	-.9367287	3.045493	-0.31	0.759	-6.92078	5.047323
2021	-1.029553	3.366639	-0.31	0.760	-7.64462	5.585515
2023	-.4540287	1.457449	-0.31	0.756	-3.317753	2.409696
2024	-.1526825	.51668	-0.30	0.768	-1.167901	.8625356
_cons	2.142129	6.003476	0.36	0.721	-9.654027	13.93829

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(2/5).(L.GSALE L.DE) collapsed

L(2/4).(L.ROA sizeTA UI_index) collapsed

Instruments for levels equation

Standard

CRC5 CRD5 Liq_w AGE L.GDP 2010b.year 2011.year 2012.year 2013.year

2014.year 2015.year 2016.year 2017.year 2018.year 2019.year 2020.year

2021.year 2022.year 2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(L.GSALE L.DE) collapsed

DL.(L.ROA sizeTA UI_index) collapsed

Arellano-Bond test for AR(1) in first differences: z =	-4.03	Pr > z =	0.000
Arellano-Bond test for AR(2) in first differences: z =	-0.49	Pr > z =	0.621

Sargan test of overid. restrictions: chi2(15) =	9.16	Prob > chi2 =	0.869
(Not robust, but not weakened by many instruments.)			

Hansen test of overid. restrictions: chi2(15) =	11.95	Prob > chi2 =	0.683
(Robust, but weakened by many instruments.)			

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group:	chi2(10) =	6.29	Prob > chi2 =	0.791
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Difference (null H = exogenous):	chi2(5) =	5.66	Prob > chi2 =	0.341
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gmm(L.ROA sizeTA UI_index, collapse lag(2 4))

Hansen test excluding group:	chi2(3) =	2.13	Prob > chi2 =	0.546
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Difference (null H = exogenous):	chi2(12) =	9.82	Prob > chi2 =	0.632
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gmm(L.GSALE L.DE, collapse lag(2 5))

Hansen test excluding group:	chi2(5) =	3.79	Prob > chi2 =	0.580
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Difference (null H = exogenous):	chi2(10) =	8.16	Prob > chi2 =	0.614
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Appendix C.2: ROE

Dynamic panel-data estimation, two-step system GMM

Group variable: fid	Number of obs	=	6376
Time variable : year	Number of groups	=	484
Number of instruments = 39	Obs per group: min	=	4
F(25, 483)	avg	=	13.17
Prob > F	max	=	14

ROE_w	Coefficient	Corrected std. err.	t	P> t	[95% conf. interval]	
ROE_w						
L1.	.4196381	.0651475	6.44	0.000	.2916305	.5476456
CRA	-1.946157	1.031937	-1.89	0.060	-3.973797	.0814827
CRD	1.461018	.7702791	1.90	0.058	-.0524937	2.97453
CRC	1.931853	.8970255	2.15	0.032	.1692988	3.694407
UI_index	.0270589	.0142012	1.91	0.057	-.0008447	.0549626
sizeTA	-.0077068	.0106461	-0.72	0.469	-.0286252	.0132117
DE	-.0016081	.0024746	-0.65	0.516	-.0064704	.0032541
LevA	.0872919	.0931153	0.94	0.349	-.0956692	.2702531
Liq_w	.0017839	.004121	0.43	0.665	-.0063134	.0098812
GSALE	.0029641	.0078757	0.38	0.707	-.0125108	.0184389
AGE	.0001155	.001026	0.11	0.910	-.0019004	.0021314
GDP	-2.05059	2.936877	-0.70	0.485	-7.821223	3.720044
year						
2011	-.5789237	.8396253	-0.69	0.491	-2.228693	1.070846
2012	-.8906159	1.289021	-0.69	0.490	-3.423398	1.642166
2013	-.9209751	1.256271	-0.73	0.464	-3.389407	1.547457
2014	-.5606147	.8353532	-0.67	0.502	-2.20199	1.08076
2015	-.3950636	.5870437	-0.67	0.501	-1.548538	.7584112
2016	-.4798844	.7152724	-0.67	0.503	-1.885314	.9255456
2017	-.4106308	.6062875	-0.68	0.499	-1.601918	.7806561
2018	-.2540437	.3939532	-0.64	0.519	-1.028117	.5200299
2019	-.2769764	.4363053	-0.63	0.526	-1.134267	.5803144
2020	-2.229733	3.204062	-0.70	0.487	-8.525355	4.065888
2021	-2.456623	3.542284	-0.69	0.488	-9.416814	4.503567
2022	-1.084931	1.533809	-0.71	0.480	-4.098694	1.928831
2023	-1.365596	.5442488	-0.67	0.502	-1.434984	.7037917
2024						
_cons	4.632398	6.291584	0.74	0.462	-7.729857	16.99465

Instruments for first differences equation

GMM-type (missing=0, separate instruments for each period unless collapsed)

L(2/4).(L.sizeTA L.LevA) collapsed

L(2/3).(L.ROE_w UI_index CRA CRC) collapsed

Instruments for levels equation

Standard

GSALE DE Liq_w AGE L.GDP 2010b.year 2011.year 2012.year 2013.year

2014.year 2015.year 2016.year 2017.year 2018.year 2019.year 2020.year

2021.year 2022.year 2023.year 2024.year

_cons

GMM-type (missing=0, separate instruments for each period unless collapsed)

DL.(L.sizeTA L.LevA) collapsed

DL.(L.ROE_w UI_index CRA CRC) collapsed

Arellano-Bond test for AR(1) in first differences: z =	-3.54	Pr > z =	0.000
Arellano-Bond test for AR(2) in first differences: z =	-0.77	Pr > z =	0.439

Sargan test of overid. restrictions: chi2(13) = 7.90 Prob > chi2 = 0.850
(Not robust, but not weakened by many instruments.)

Hansen test of overid. restrictions: chi2(13) = 8.78 Prob > chi2 = 0.789
(Robust, but weakened by many instruments.)

Difference-in-Hansen tests of exogeneity of instrument subsets:

GMM instruments for levels

Hansen test excluding group: chi2(7) = 4.26 Prob > chi2 = 0.750

Difference (null H = exogenous): chi2(6) = 4.52 Prob > chi2 = 0.606

gmm(L.ROE_w UI_index CRA CRC, collapse lag(2 3))

Hansen test excluding group: chi2(1) = 1.99 Prob > chi2 = 0.159

Difference (null H = exogenous): chi2(12) = 6.79 Prob > chi2 = 0.871

gmm(L.sizeTA L.LevA, collapse lag(2 4))

Hansen test excluding group: chi2(5) = 1.29 Prob > chi2 = 0.936

Difference (null H = exogenous): chi2(8) = 7.49 Prob > chi2 = 0.484

