Bank Credit Cycles*

Abstract

1. Introduction

PDI

PDI

2. The Lending Market Game

N

p_g p_b p_g
p_b

λ

X ∞

X

c n_i
i

F

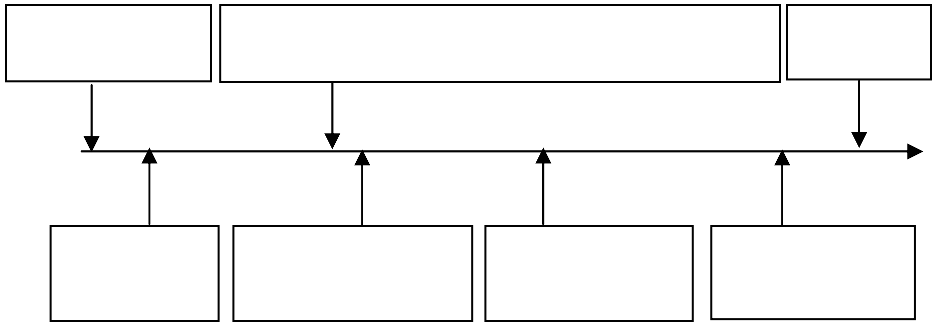
$\lambda p_b F +$ λ p F

- $p_g X$ $p_b X$ $\lambda p_b X$ λ $p_g X$

X

F
F

λ
λ



2.1 Stage Nash Equilibrium

Proposition 1 *If and only if* $c \geq \frac{\lambda \quad -\lambda \quad p_g - p_b}{\lambda p_b + \quad -\lambda \;\; p_g}$, *does there exists a symmetric Nash equilibrium in which no bank conducts credit worthiness testing and both banks earn zero profits.*

$$c \geq \frac{\lambda \quad -\lambda \quad p_g - p_b}{\lambda p_b + \quad -\lambda \;\; p_g}$$

- $c \geq \frac{\lambda \quad -\lambda \quad p_g - p_b}{\lambda p_b + \quad -\lambda \;\; p_g}$.

Proposition 2 *There is no symmetric Nash equilibrium in which both banks test at least some of the applicants.*

$\pi = \lambda p_b F + \quad - \lambda \;\; p_g F -$ $\quad F \quad X$

$\pi = \quad - \lambda \;\; p_g F - \;\; - c$ $\quad F \quad X$

$\pi \quad \pi \quad F \quad X$

2.2 Repeated Competition

$F \quad X$

$F \quad X$

$\pi = \lambda p_b F + \quad - \lambda \;\; p_g F -$

$\pi \;\; = \lambda \;\lambda p_b F + \quad - \lambda_g F \;\; - \quad + \quad - \lambda \;\;\; p_g F - \quad - c$ $\quad \pi \quad \pi$

$\lambda \quad - \lambda \quad p_g - p_b \;\; F - c$

1

2

F

$$u \quad - u \quad = u \quad - u$$

$$u \quad + \quad u \quad + \quad u \quad = u$$

N

s F

s F_{α}^{-}

F_{α}^{-}

D D

$$q = \lambda \quad - p_b \quad + \quad - \lambda \quad - p_g$$

s

$$q = \lambda \quad - p_b \quad + \quad - \lambda \quad \lambda \quad - p_b \quad + \quad - \lambda \quad - p_g$$

$$\Delta q = q - q = \lambda \quad - \lambda \quad p_g - p_b \quad <$$

D D

$$q_r = \lambda \quad - p_b \quad + \quad - \lambda \quad - p_g \quad \lambda p_b + \quad - \lambda \quad p_g \quad < q$$

s

$$q_r = \lambda \quad - p_b \quad \lambda p_b + \quad - \lambda \quad p_g \quad + \quad - \lambda \quad \lambda \quad - p_b \quad + \quad - \lambda \quad - p_g \quad p_g$$

$$\Delta q_r = q_r - q_r = \lambda \quad - \lambda \quad p_g - p_b \quad = \Delta q$$

q q

q q

n N

$$\theta \equiv \qquad = \frac{\frac{n}{N}\lambda + \quad - \frac{n}{N} \quad - \lambda}{\frac{n}{N}\lambda + \quad - \frac{n}{N} \quad -}$$

n N θ

3. Empirical Tests

RV *TL*

LL *CO-RV* *LS*

LR *LS* *TL*

UMP

DPI

FFR

3.1.2 Pairwise Tests of Rival Banks

$$y_{it} = \alpha_{ij} x_{it} + \beta_{ij} z_{ijt} + \varepsilon_{ijt} \qquad j \neq i \,,$$

$_{it} =$ $_{it}$ $_{it}$ $x_{it} = Const \quad DPI_t \quad UMP_t \quad LL_{it-} \quad LL_{it-} \quad LL_{it-} \quad LL_{it-}$

$z_{ijt} = \quad \Delta LL_{ijt-} \quad \Delta LL_{ijt-} \quad \Delta LL_{ijt-} \quad \Delta LL_{ijt-}$

LL_{ij} LL_{ij}

LL_{ij}

I I

j

γ

Step u_{it} LL_{it} LR_{it}

$y_{it} = \alpha_i x_{it} + u_{it}$ x_{it} z_{ijt} LL_{it}

LL_{jt}

Step y_{it} x_{it} z_{it} H

Step

Step p SI SI SI

LL_{ij}

LL

i x_{it} x_{ijt}

$$x_{ijt} = C \;\; DPI \;\; UMP \;\; LL_{it-} \;\; LL_{it-} \;\; LL_{it-} \;\; LL_{it-} \;\; LL_{jt-} \;\; LL_{jt-} \;\; LL_{jt-} \;\; LL_{jt-}$$

z_{ijt}

p

3.1.3 An Aggregate Performance Difference Index

PDI

$$PDI_t = \frac{\sum_{i>j} LL_{it} - LL_{jt}}{}$$

PDI
LL_i *I*

$$y_{it} = \alpha_i x_{it} + \beta_i z_t + \varepsilon_{it} \quad i =$$

y_{it} x_{it} z_t PDI_{t-} PDI_{t-} PDI_{t-} PDI_{t-}
z_t t

β_i
β *I*

y_{it} LL_{it}

y_{it} LR_{it}

PDI y_{it} LL_{it} y_{it} LR_{it}
LL *LR*
PDI *PDI* *LL*
LR

PDI *LL* *LR* *LL* *LR*
PDI *LL* *LR*

3.1.4. Bank Stock Returns and Performance Differences

PDI

β_i β I

PDI

PDI

3.1.5 Rajan's Reputation Hypothesis

$$AGLL_t = \frac{\sum_i CO_{it} - RV_{it}}{\sum_i LS_{it}}$$

$AGLL$ PDI

z_t $AGLL_{t-}$ $AGLL_{t-}$ $AGLL_{t-}$ $AGLL_{t-}$ z_t $AGLL_{t-}$ $AGLL_{t-}$

$AGLL_{t-}$ $AGLL_{t-}$ PDI_{t-} PDI_{t-} PDI_{t-} PDI_{t-}

z_t t

z_t

$AGLL$

PDI $AGLL$

PDI

$AGLL$

3.2 An Aggregate Performance Difference Index for Commercial and Industrial Loans

3.2.1 VAR Analysis of the Fed's Lending Standards Index

PDI

STAND

PDI

r_m r_f

SMB

HML

PDI

PDI *PDI*

PDI

	Coefficient on	-statistics
	-238.90	-0.90
	-49.79	-0.29
	-6.98	-0.03

PDI

PDI

PDI

$$PDI_t = \lambda \ + \sum_{i=} \lambda_i R_{it} + \varepsilon_t$$

R_{it} I t

$$w_i = \frac{\lambda_i}{\sum_{i=} \lambda_i}$$

$$R_{PDI\ t} = \sum_{i=} w_i R_{it}$$

R_{PDI}

R_{PDI} R_{PDI}

R_{PDI} SML HML

PDI PDI

SML HML

4. Conclusion

Appendix

A. Formalization of the Stage Strategy

n_i i

$N_{\alpha i}$ N n_i

$F_{\alpha i}$

i

N_{gi} n_i $N_{\beta i}$ N_{gi}

$F_{\beta i}$ i

$N_{\gamma i}$ n_i N_{gi}

$F_{\gamma i}$ $F_{\alpha i}$

$F_{\beta i}$ $F_{\gamma i}$

$F_{\alpha i}$ $F_{\beta i}$ $F_{\gamma i}$

$$s_i = n_i \ N_\alpha \ n_i \ N_{gi} \ N_\beta \ n_i \ N_{gi} \ N_{\gamma i} \ n_i \ N_{gi} \ F_{\alpha i} \ n_i \ N_{gi} \ F_{\beta i} \ n_i \ N_{gi} \ F_{\gamma i} \ n_i \ N_{gi}$$

n_i i

N_{gi} i

$N_{\alpha i}$ i

$N_{\beta i}$ i

$N_{\gamma i}$ i

$F_{\alpha i}$ i

$F_{\beta i}$ i

$F_{\gamma i}$ i

B. Proof of Proposition 1

Lemma 1 *If it exists, in any symmetric stage Nash equilibrium in which neither bank conducts credit worthiness testing, each bank offers loans to all the loan applicants at the same interest rate.*

Proof. $s_i = n_i = N_{\alpha i} < N \ F_{\alpha i}$ -i

$s_{-i} = n_{-i} = N_{\alpha -i} = N \ F_{\alpha -i}$ s_{-i}

$F'_{\alpha\text{-}i}$ $F_{\alpha i}$ $N_{\alpha i}$ $N_{\alpha i}$

i X F^*

$$E\pi_i = \frac{N}{} \lambda p_b F + -\lambda \ p_g F - =$$

$$F = \frac{}{\lambda p_b + -\lambda \ p_g} < X$$

$s_i = n_i = N_{\alpha i} < N \ F_{\alpha i}$ $F_{\alpha i} = F \ F$ F_N F_j

F^* j N j k F_j F_k

F_k F^* -i

$s_{-i} = \; n_{-i} = \quad N_{\alpha - i} = N \; F_{\alpha - i}$ $\qquad F_{\alpha i} = \; F \qquad F_{k-} \;\; F_k^{\,-} \;\; F_{k+} \qquad F_N \qquad\qquad F_k$

F_k

F^*

Proof Proposition

$$F \quad = \frac{}{\lambda p_b + \quad - \lambda \;\; p_g} < X$$

$$c < \frac{-\lambda \;\; \lambda \;\; p_g - p_b}{\lambda p_b + \quad - \lambda \;\; p_g}$$

$F \qquad\qquad\qquad F$

$$E\pi_i^d = \quad - \lambda \quad p_g F \quad - \quad - c$$

$$E\pi_i^d > \qquad c < \quad - \lambda \quad p_g F \quad - \quad = \frac{-\lambda \;\; \lambda \;\; p_g - p_b}{\lambda p_b + \quad - \lambda \;\; p_g}$$

$$c \geq \frac{-\lambda \;\; \lambda \;\; p_g - p_b}{\lambda p_b + \quad - \lambda \;\; p_g} \qquad F$$

C. Proof of Proposition 2

Lemma 2 *In any symmetric stage Nash equilibrium in which both banks test all the applicants, each bank offers loans to all the applicants that pass the test at the same interest rate.*

Lemma 1

Lemma 3 *If it exists, in any symmetric stage Nash equilibrium in which both banks test n<N applicants, each bank offers loans to all applicants that pass the test (good types) at* $F \quad = \frac{}{p_g}$.

Lemma 1

Lemma 4 *If it exits, in any symmetric stage Nash equilibrium in which both banks test n<N applicants, each bank either offers loans to all non-tested applicants at the same interest rate or offers loans to none of them.*

Proof. $F \quad X$

F

F

F

Proof Proposition 2

N_β N_g N_g
N_γ

$F_\beta\ N\ N_g$ N_g
$E\pi$ N_g
N_g p_k

$$E\pi_i = E\sum_{k=}^{N} -kp_k\ p_g F_\beta\ N\ k\ -\ -Nc \geq$$

i F_β $F_\beta^d\ N_g\ = F_\beta^-\ N_g$
N_g N_g

$$E\pi_i^d = E\sum_{k=}^{N} kp_k\ p_g F_\beta^-\ N\ k\ -\ -Nc \geq E\pi_i$$

F_β F^{**} F_α $F\ n$

n
$F\ n$ F^{**} F_α $F\ n$ F_β F^{**} F_α
$F\ n$ F_β F^{**}

F^{**}

D. Formalization of the Repeated Game

i
ii
iii
iv
v

i
$s_{it}\ {}_{t=}^{\infty}$ i

i
i

$$K_{it} = D_{\alpha it}\ D_{\beta it}\ D_{\gamma it}\ \chi_{\alpha it}\ \chi_{\beta it}\ \chi_{\gamma it}$$

F
F

D χ

α β γ α

β γ

$$D_{it} = D_{\alpha it} + D_{\beta it} + D_{\gamma it}$$

$$\chi_{it} = \chi_{\alpha it} + \chi_{\beta it} + \chi_{\gamma it}$$

t κ_t κ_t κ_t κ_{it} D_{it} χ_{it} i

T i

i

i

Lemma 5 *In a Symmetric Perfect Public Equilibrium, if on the equilibrium path, banks make offers to all loan applicants without credit worthiness test at an interest rate higher than* $F \quad = \frac{}{\lambda p_b + \quad - \lambda \; p_g}$*, and the continuation payoffs only depend on loan portfolio distribution* *(D_1, D_2), then for any value of D we have:*

$$\delta u_i \; D \; N - D \; - \delta u_i \; D + \quad N - D - \quad = \lambda p_b + \quad - \lambda \; p_g \; F_\alpha -$$

Proof: $s = \; n = \quad N_\alpha = N \; F_\alpha$

F_α $F \quad = \frac{}{\lambda p_b + \quad - \lambda \; p_g}$

$\chi \quad \chi$

i

$s \quad D \; = \; n = \quad N_\alpha = D \; F_\alpha^-$ $D \quad N$ $D \quad D'$

$$\pi_i \; s \quad D \quad s \; + \delta u_i \; D \; N - D \; = \pi_i \; s \quad D \quad s \; + \delta u_i \; D \quad N - D$$

$$\delta u_i \; D \; N - D \; - \delta u_i \; D + \quad N - D - \quad = \pi_i \; s \quad D + \quad s \; - \pi_i \; s \quad D \quad s$$

$s' \, D$

$s' \, D$

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Journal of Money, Credit & Banking

Economic

Policy Review

Economic Policy Review

Journal of Money, Credit & Banking

The Quarterly Journal of Economics

Hand

Table I y_{it} $\alpha_{ij}x_{it}+\beta_{ij}z_{ijt}+\varepsilon_{ijt}$ y_{it} =
LL_{it} LR_{it} x_{it} C UMP DPI LL_{it-} LL_{it-} LL_{it-} LL_{it-} z_{ijt} LL_{it-} LL_{it-} LL_{it-} LL_{it-}
y_{it} $\alpha_{ij}x_{ijt}+\beta_{ij}z_{ijt}+\varepsilon_{ijt}$ $y_{it} = LL_{it}$ LR_{it} x_{it} C UMP DPI LL_{it-} LL_{it-} LL_{it-} LL_{it-} LL_{jt-} LL_{jt-} LL_{jt-} LL_{jt-} z_{ijt} LL_{it-} LL_{it-} LL_{it-}
LL_{it-} z_{ijt}

p-

	Panel A						Panel B					
	CHAS	CITI	BONE	BOAM	MBNA	WACH	CHAS	CITI	BONE	BOAM	MBNA	WACH
CHAS		-0.583 ***	0.064	0.044	-0.061 **	-0.446 ****		-0.641 ***	0.030	0.029	0.010	-0.231
CITI	-0.175		-0.066	0.063	-0.010	-0.209 ****	-0.278 **		-0.122 *	0.064	0.009	-0.195 ***
BONE	-0.036	-0.246 ***		-0.228	-0.387 **	-0.302 ***	-0.119 *	-0.299 ***		-0.183	-0.519 ***	-0.380 **
BOAM	0.307 ##	-0.127	-0.081		-0.173	0.022 ##	0.248 #	-0.113 ***	-0.087		-0.268	0.062
MBNA	0.117	-0.023	0.043	-0.054		-0.161 ***	0.153 ##	-0.053 **	-0.046 ***	-0.183 **		-0.090 **
WACH	-0.051	-0.115 ***	-0.185 *	0.096	-0.241 ***		-0.061	-0.111 ***	-0.155 ***	0.029	-0.195	
	Significance Index: 39			Bootstrap P-Value: 0.00079			Significance Index: 45			Bootstrap P-Value: 0.00001		

	Panel C						Panel D					
	CHAS	CITI	BONE	BOAM	MBNA	WACH	CHAS	CITI	BONE	BOAM	MBNA	WACH
CHAS		-0.574 **	-0.077	-0.259 **	0.419	-0.010 ***		-0.522	-0.078	-0.405 ***	0.496	-0.186
CITI	0.646		-0.590 ***	-0.572 ***	-0.224	-0.327 ***	-0.074		-0.630 ***	-0.615 ***	-0.075	-0.351 *
BONE	-0.375	-0.652 ***		-1.187 ***	-0.875	-1.316 **	-0.379	-0.885 ***		-1.184 ***	-1.117	-1.355
BOAM	-0.228	-0.497 ***	-0.184		-0.959 ***	-0.115 ***	-0.201	-0.350 ***	0.139		-0.742 ***	-0.080
MBNA	-0.131	0.440	0.956	0.990 ##		0.900 ###	-1.515	-0.750	1.392 ###	1.324 ##		0.961 #
WACH												

Table II PDI y_{it}
$\alpha_i x_{it}+\beta_i z_t+\varepsilon_{it}$ $y_{it} = LL_{it}$ LR_{it} x_{it} C UMP DPI LL_{it-} LL_{it-} LL_{it-} LL_{it-} z_t PDI_{t-} PDI_{t-} PDI_{t-} PDI_{t-}
β_i y_{it} $\alpha_i x_{it}+\beta z_t+\varepsilon_{it}$ $y_{it} = LL_{it}$ LR_{it} x_{it} C UMP DPI LL_{it-}
LL_{it-} LL_{it-} LL_{it-} z_t PDI_{t-} PDI_{t-} PDI_{t-} PDI_{t-} i
z_t t

	Panel A												Panel B: Pooled			
	CHAS		CITI		BONE		BOAM		MBNA		WACH		OLS		SUR	
	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat
1	-0.942	-2.10	-0.279	-0.50	-1.392	-1.42	-1.380	-2.48	-0.089	-0.47	-0.679	-3.13	-0.818	-4.30	-0.563	-4.38
2	0.039	0.09	0.140	0.27	-0.786	-0.81	-0.040	-0.07	0.080	0.41	-0.393	-1.65	-0.169	-0.88	-0.202	-1.51
3	0.161	0.35	0.161	0.31	0.135	0.14	0.099	0.17	-0.005	-0.03	-0.048	-0.20	-0.028	-0.14	-0.017	-0.13
4	-0.098	-0.22	-0.117	-0.24	-1.100	-1.19	-0.453	-0.75	0.095	0.53	-0.546	-2.31	-0.341	-1.81	-0.036	-0.27
2	0.77		0.75		0.83		0.71		0.88		0.83					
	Panel C												Panel D: Pooled			
	CHAS		CITI		BONE		BOAM		MBNA		WACH		OLS		SUR	
	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat
1	0.144	0.30	-1.746	-2.48	-1.880	-0.78	-0.710	-2.45	0.616	0.52	0.933	0.12	-0.535	-1.32	-0.403	-2.23
2	-0.068	-0.14	-1.407	-2.16	-3.784	-1.58	-0.386	-1.33	-0.353	-0.29	-0.498	-0.58	-0.823	-2.02	-0.578	-3.19
3	-0.214	-0.44	-1.557	-2.40	-3.826	-1.61	-0.315	-1.04	-0.697	-0.57	-0.727	-0.83	-1.149	-2.79	-0.665	-3.57
4	0.187	0.39	-1.579	-2.60	-5.909	-2.61	-0.862	-2.74	1.030	0.92	-0.578	-0.67	-0.932	-2.32	-0.741	-4.02
2	0.74		0.89		0.75		0.92		0.88		0.83					

Table III

PDI

r_{it} $\alpha_i x_{it}+\beta_i z_t+\varepsilon_{it}$ x_{it} C C $Dividend\ Yield_{it-}$ z_{it} PDI_{t-} PDI_{t-} PDI_{t-} PDI_{t-}

β_i r_{it} $\alpha_i x_{it}+\beta z_t+\varepsilon_{it}$ i

z_t t

Without Dividend Yield	Panel A												Panel B: Pooling			
	CHAS		CITI		BONE		BOAM		MBNA		WACH		OLS		SUR	
	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat
1	-3.66	-0.75	3.53	0.66	1.46	0.39	1.35	0.36	-8.28	-1.60	-1.66	-0.48	-1.21	-0.68	-0.82	-0.32
2	-2.56	-0.53	-1.73	-0.32	-2.53	-0.67	-3.09	-0.82	1.56	0.30	-6.76	-1.95	-2.50	-1.40	-3.77	-1.48
3	-9.78	-2.02	-4.80	-0.90	-8.91	-2.37	-9.97	-2.63	-6.87	-1.33	2.00	0.57	-6.45	-3.59	-4.66	-1.83
4	-1.60	-0.32	-4.97	-0.91	-7.13	-1.86	-5.91	-1.53	-4.71	-0.90	-5.80	-1.65	-5.04	-2.77	-6.24	-2.41
2	0.13		0.07		0.14		0.25		0.13		0.16					
With Dividend Yield	**Panel C**												**Panel D: Pooling**			
	CHAS		CITI		BONE		BOAM		MBNA		WACH		OLS		SUR	
	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat	Coeff.	-stat
1	-2.72	-0.54	4.62	0.80	4.38	1.28	1.13	0.29	-8.20	-1.56	-2.71	-0.74	-0.83	-0.45	-0.69	-0.28
2	-1.65	-0.33	-1.97	-0.36	-0.66	-0.20	-3.20	-0.84	1.65	0.31	-6.96	-2.00	-2.15	-1.20	-3.48	-1.41

Table IV

y_{it} $\alpha_i x_{it}+\beta z_t+\varepsilon_{it}$ $y_{it} = LL_{it}$ LR_{it} x_{it}

C UMP DPI LL_{it-} LL_{it-} LL_{it-} LL_{it-} z_t $AGLL_{t-}$ $AGLL_{t-}$ $AGLL_{t-}$ $AGLL_{t-}$ i

y_{it} $\alpha_i x_{it}+\beta z_t+\varepsilon_{it}$

Table VI

Variance Decomposition of :

Period	St. Error				
1	6.64	100.0	0.0	0.0	0.0
3	8.03	89.5	2.9	6.9	0.8
5	9.53	65.6	2.7	27.7	4.0
10	11.13	50.0	13.6	32.6	3.8
15	12.49	45.4	18.0	33.3	3.3

Variance Decomposition of :

Period	St. Error				
1	0.00094	0.2	99.8	0.0	0.0
3	0.00101	6.0	86.2	4.8	3.0
5	0.00134	14.5	76.6	6.5	2.4
10	0.00170	14.7	57.5	24.2	3.6
15	0.00188	14.1	58.6	23.2	4.1

Variance Decomposition of :

Period	St. Error				
1	0.231	10.7	4.7	84.6	0.0
3	0.527	10.6	12.5	76.1	0.8
5	0.692	13.9	21.3	64.2	0.5
10	0.869	12.9	27.2	57.6	2.3
15	1.017	11.6	20.7	65.2	2.6

Variance Decomposition of :

Period	St. Error				
1	0.0050	23.8	0.5	8.1	67.7
3	0.0131	6.6	17.9	51.8	23.7
5	0.0212	14.1	34.6	40.8	10.5
10	0.0363	23.5	50.7	21.7	4.1
15	0.0519	25.1	32.4	39.0	3.5

Table VII

$$r_i - r_f = \alpha + \beta \;\; r_m - r_f \;\; + \beta \; SMB + \beta \; HML + \beta \; R_{PDI} + \varepsilon$$

R_{PDI} t

	α						α					
	Commercial Banks (using equal weighted)						Commercial Banks (using value weighted)					
Coefficient	1.556	1.163	-0.070	0.464	0.021	0.72	1.628	1.173	-0.041	0.488	0.000	0.72
(t-stat)	(2.54)	(13.27)	(-0.54)	(4.67)	(0.95)		(2.65)	(12.52)	(-0.33)	(4.88)	(0.01)	
	Non-Finanical Firms (using equal weighted)						Non-Finanical Firms (using value weighted)					
Decile 1	4.940	0.629	1.657	-0.042	0.192	0.65	5.146	0.518	1.983	0.020	0.208	0.61
(Small)	(4.08)	(3.63)	(6.53)	(-0.21)	(4.37)		(4.04)	(2.67)	(7.60)	(0.10)	(2.96)	
Decile 2	-0.398	0.766	1.517	0.108	0.126	0.79	-0.256	0.696	1.731	0.151	0.134	0.76
	(-0.50)	(6.76)	(9.15)	(0.84)	(4.41)		(-0.31)	(5.47)	(10.13)	(1.11)	(2.90)	
Decile 3	-0.534	0.867	1.445	0.093	0.078	0.86	-0.495	0.802	1.585	0.103	0.105	0.85
	(-0.89)	(10.04)	(11.44)	(0.95)	(3.57)		(-0.81)	(8.59)	(12.64)	(1.03)	(3.11)	
Decile 4	-0.702	0.946	1.370	0.160	0.065	0.88	-0.649	0.901	1.483	0.175	0.078	0.88
	(-1.31)	(12.28)	(12.15)	(1.83)	(3.34)		(-1.18)	(10.74)	(13.16)	(1.96)	(2.58)	
Decile 5	-0.120	1.014	1.284	0.126	0.049	0.91	-0.049	0.994	1.364	0.148	0.044	0.91
	(-0.27)	(15.80)	(13.68)	(1.73)	(3.01)		(-0.11)	(14.10)	(14.41)	(1.97)	(1.75)	
Decile 6	0.287	1.005	1.322	0.054	0.011	0.95	0.270	0.985	1.346	0.047	0.026	0.95
	(0.90)	(20.90)	(19.68)	(1.03)	(0.97)		(0.85)	(20.33)	(20.66)	(0.91)	(1.46)	
Decile 7	0.604	1.081	1.063	0.033	-0.004	0.97	0.588	1.077	1.059	0.027	0.001	0.97
	(2.57)	(32.08)	(21.57)	(0.86)	(-0.43)		(2.50)	(30.05)	(21.99			

Table VIII