https://www.aimspress.com/journal/GF

Research article

Policy implications of ESG-moderated credit risk on bank profitability

Thabo J. Gopane*

Department of Finance and Investment Management, University of Johannesburg, Johannesburg, South Africa

* **Correspondence:** Email: tjgopane@uj.ac.za.

Supplementary

Appendix

Table A1. Model Validation Tests.

No.	Test	Null	Test Statistic	Pvalue	Decision
1	Breusch-Pagan	H_o: POLS appropriate	72.821	0.000***	Reject H_o
2..	Hausman	H_o: RE appropriate	25.435	0.000***	Reject H_o
3.	Breusch-Pegan	H_o: No dependence	14.428	0.493	Fail to reject H_o
4.	Likelihood Ratio	H_o: Homoscedastic	12.959	0.044**	Reject H_o
5.	Jarque-Bera	H_o: Normal distribution	0.138	0.933	Fail to reject H_o

Numbers 1 & 2 are model selection tests for panel data. No.3 is a cross-sectional dependence test. No.4 is a heteroscedasticity test. No.4 is a residual normality test. POLS is Pooled Ordinary Least Squares, RE is Random Effects model. *Statistical Significance: *** 1%, **5%. **Source:** Author's computation.*

Table A2. Stationarity or Unit Root Tests.

H₀: Unit root

H₁: No unit root

Details	Statisticˢ	p-value
Return on Equity (ROE)	−4.319	0.000***
Bad-performing loans (BPL)	−7.985	0.000***
Environment, social and governance (ESG)	−3.979	0.000***
Capital adequacy ratio (CAR)	−6.166	0.000***
Loan-to-deposit ratio (LDR)	−4.450	0.007***
Market power (MPR)	−1.712	0.044**
Exchange rate (EXR)	−1.637	0.051**
Inflation (INF)	−3.840	0.000***

Notes: statistically significant at *** 1%, ** 5%. Statistics: Applied the Levin-Lin-Chu and Breitung Tests.

Source*: Author's computation*

Table A3. Multicollinearity Test applying Variance Inflation Factors (VIF).

Variable	VIF Value
Bad- performing loans (BPL)	1.426
Environment, Governance, and Social (ESG)	2.398
Capital Adequacy Ratio (CAR)	1.113
Loan-to-deposit ratio (LDR)	1.124
Market power (MPR)	2.544
Financial Crisis (FCR)	1.117
Exchange Rate (EXC)	1.818
Inflation (INF)	1.251
Constant (C)	NA

Source*: Authors' computation*

Table A4. List of variables.

Variables	Formula
Return on equity	$ROE = \dfrac{Net\ income}{total\ shareholders\ equity}$
Bad performing loans	$BPL = \dfrac{bad\ performing\ loans}{total\ loans}$
Environmental, social, governance	*ESG Index*
Capital adequacy ratio	$CAR = \dfrac{core\ capital}{risk\ weighted\ assets}$
Lending to deposit ratio	$LDR = \dfrac{total\ debt}{total\ assets}$
Market power	$MPR = \dfrac{market\ capitalisation}{total\ assets}$
Exchange rate	*EXC*
Inflation rate	*INF*
Financial Crisis	*FCR*

Source: *Author's analysis*

Table A5. Results of panel data model (Eq 2) with an expanded sample.

Variable Name	Short names	Coeff.	Std. Error	P-value	
Constant	C	−0.104	0.236	0.660	
Bad performance loans	BPL	0.444	0.218	0.043	**
Interaction	BPL_sq	−0.437	0.170	0.011	***
Interaction	BPL_cube	0.116	0.036	0.001	***
Capital adequacy ratio	CAR	−0.003	0.003	0.293	
Loan to deposit ratio	LDR	0.707	0.088	0.000	***
Market power	MPR	0.402	0.047	0.000	***
Financial crisis	FCR	−0.077	0.077	0.314	
Exchange rate	EXC	0.573	0.146	0.000	***
Inflation rate	INF	−0.042	0.186	0.824	
Cross−sectional effects	CE	Yes	Yes	Yes	
Adjusted R−squared		0.66			
F−statistic		42.06			
Prob(F−statistic)		0.000	***		
Number of panels		10			
Number of periods		18			
Number of observations		180			
Statistical significance:		*** 1%	** 5%	* 10%	

Source: *Authors' computation*

Table A6. Results of risk-moderated impact on bank profitability (Equation 2) for pre- and post-2015 era.

Variable Name	Short names	Coeff.	Std. Error	P-value	
Constant	C	−0.129	0.289	0.657	
Bad performance loans	BPL	0.178	0.045	0.000	***
Interaction	BPL×ESG	0.009	0.154	0.956	
Interaction	BPL_sq×ESG	0.212	0.121	0.081	*
Interaction	BPL_cube×ESG	−0.071	0.028	0.011	***
Environmental, Soc., Gov.	ESG	−0.115	0.199	0.563	
Capital adequacy ratio	CAR	−0.005	0.003	0.095	*
Loan to deposit ratio	LDR	0.577	0.090	0.000	***
Market power	MPR	0.417	0.046	0.000	***
Financial crisis	FCR	−0.089	0.075	0.235	
Exchange rate	EXC	0.626	0.142	0.000	***
Inflation rate	INF	0.023	0.181	0.900	
Cross-sectional effects	CE	yes	yes	yes	
Adjusted R-squared		0.55			
F-statistic		35.58			
Prob(F-statistic)		0.000	***		
Number of panels		10			
Number of periods		18			
Number of observations		180			
Statistical significance:		*** 1%	** 5%	* 10%	

Source: Authors' computation