“Does transitioning away from GHG emitting companies hinder the capacity of banks to create shareholder value?”

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DOES TRANSITIONING AWAY FROM GHG EMITTING COMPANIES HINDER THE CAPACITY OF BANKS TO CREATE SHAREHOLDER VALUE?

Abstract

This article investigates the capacity of banks to create shareholder value amidst regulators and stakeholders' growing demands for reductions in financing to greenhouse gas emitting companies. The purpose of the study is to evaluate the shareholder value creation capacity of banks amidst transition risks resulting from reductions in loans from high greenhouse gas emitters. The study compares reductions in balance sheet corporate loans to returns on equity from income statements. The comparison is done for periods during which interest rates move downwards as a way of stress testing banks' capabilities to generate shareholder value. A risk-return analysis is conducted to determine the rate of change in risk compared to shareholder value. A hypothesis-testing focus is used to test a value-creation proposition concerning the rate of change in corporate loans and return on equity. The results of the study strongly suggest that banks can create shareholder value when faced with loan reductions to high greenhouse gas emitting companies, even within constrained repricing conditions such as negative interest rate movements. Of the cases analyzed 88% have a similar outcome of value creation, which is supported by a rejection of the null hypothesis at p-value ≤ 0.05, justifying statistical significance. Furthermore, 53% of the changes in return on equity is explained by the changes in loans to greenhouse gas emitting companies. The study concludes that banks could still create shareholder value if they reduce funding towards high greenhouse gas emitting companies, provided they devise prudent strategic portfolio tilts in assets.

Keywords transitional risks, portfolio tilt, shareholder value, loans, greenhouse gas emitters

JEL Classification G21, G28, G32

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INTRODUCTION

The growing concern around climate-related risks can be discerned around the globe. In some cases, there have been outright public outcries to the negative consequences of such risks to the economic well-being of organizations. For a progressive green financing to occur, Gabor et al. (2019) recommended amongst others, the institution of risk-weighted capital adequacy rules, the extension of the mandatory climate related financial disclosures to non-bank financial institutions, and the introduction of a penalizing brown factor for Global Systemically Important Banks. Buranatrakul and Swierczek (2017) posited, as cited by Kilic and Kuzey (2019), that some non-governmental organizations (NGOs) assess the banking industry to ensure that banking processes can contribute to the ecological sustainability of the planet.

The researchers contend that banks can play a significant role by reallocating capital to green initiatives. However, in an attempt to do so, banks may suffer losses due to transition risks. Results from a study by

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Nguyen et al. (2023) reveal differential degrees in exposure to climate transition risk among the lending activities of U.S. banks, due to their considerable exposure to the energy sector and by the varied carbon emission profiles of their borrowers. A severe devaluation of carbon-based assets and lower revenues for debtors due to demand shifts implies that banks face a higher probability of default on some of their loans (Battiston et al., 2020). In addition, non-performing loan risk can be transferred to the bank, revising capital ratios and worsening lending conditions (Monasterolo, 2020). Banks may attempt to execute portfolio tilts to limit exposures to highly dependent carbon emission businesses, which may manifest in reduced income and, by so doing, may see a reduction in return on equity (ROE).

Upon investigating the fluctuation in exposure to transition risks in United States of America, Nguyen et al. (2023) established that most banks reduced their energy exposure in 2015–2016. However, some banks maintained that reduction, whilst others gradually increased their exposure in the later years, 2017–2018 (Nguyen et al., 2023). The challenge is that portfolio tilts may manifest in reduced income and, by so doing, may see a reduction in return on equity (ROE). This metric reflects the efficiency of shareholder capital in generating bank profits. The objective of this research is to assess the feasibility of banks to create shareholder value whilst concurrently shifting away from lending activities that are GHG concentrated.

The remaining sections are as follows: Section 2 reviews related literature. Section 3 presents the methods used to assess shareholder value creation alternatives. Section 4 displays the results. Section 5 discusses the results and section 6 offers conclusions.

1. LITERATURE REVIEW

Literature on risk reduction by way of reduced exposures to GHG emitters and commensurate shareholder dynamics is not conclusive. The agility of banks in reconfiguring their loan portfolios is key in dealing with transitional risks and to sustain shareholder value creation. Configurations are critical. Kedward et al. (2020) argued that private finance is vital in speeding the mitigation of environmental impacts.

1.1. Portfolio tilt imperatives

Carney (2015) argued that risks to financial stability will be mitigated if the Paris Agreement call for a 2 degreed world is heeded through an early transition. Like-wise the Bank of England (2018) reiterated the need to reallocate tens of trillions of dollars to achieve the low carbon transition. A portfolio tilt is needed to reallocate loans from high GHG emission industries. Banks contribute to reducing risks associated with climate change and sustainability, mitigate the impact of these risks, adapt to climate change and support recovery by reallocating financing to climate-sensitive sectors (Park & Kim, 2020). Strands of literature can be located, which also justify the need for portfolio tilts. Non-performing loan risk as a result of transition risks can spawn unwelcome credit conditions through adjusted capital requirements (Monasterolo, 2020). The possibility of oil reserve write-downs, as well as discontinuance of fossil fuel power plants, highlights the pertinence of transition risks in the energy sector. Still, they are also relevant for transportation, construction, manufacturing, and other industries, stemming from the uncertain pace and scope of the economic transformation required to produce fewer carbon emissions (Rudebusch, 2021). Invariably, these risks can lead to financial losses in sectors dependent on high carbon emissions. It would therefore seem prudent for a bank to reflect a progressive decline in corporate loans since most industrialized loans are categorized under the corporate loans category. Transition risk affects more industries that are large emitters of CO_2 (Nieto, 2019).

It is contended in this study that quantum movements in corporate loans can be used as proxies for the corresponding movements in lending to carbon-emitting industries. Particularly in the absence of detailed loan-level data on bank loans to polluters of GHG. From a reporting and disclosure perspective, even though banks want to

be seen as good corporate citizens, their commitment to fully disclose the levels of their involvement in funding carbon-linked emissions is questionable (Caby et al., 2020). Nevertheless, there are encouraging signs if one considers that thirty-four (34) private global banks have already embarked on coal restrictions (Buckley, 2019). Indeed, commensurate with the rise of socially responsible investing, there has been a remarkable growth in environmentally sensitive lending (Fard et al., 2020; Chava, 2014) as cited by Javadi and Masum (2021), and there is growing evidence reflecting that banks are hugely taking note of environmental issues (Degryse et al., 2020). Therefore, reducing corporate loans linked to carbon emissions without a corresponding interest rate increase may entail an ROE decline. However, according to Ivanov et al. (2021), corporate lending terms adjust quickly when transition risks are high, showing how agile lenders are in mitigating transition risks.

Indeed, a reduction in corporate loans through a decline in credit supply to the corporate sector relative to lesser risk-weighted assets in the household sector is considered a risk-reduction move (Juelsrud & Wold, 2020). Considering that the risk weight on mortgage lending is 0.35, whilst that of corporate loans is 1.0, it therefore means a portfolio tilt designed to take away the credit supply from corporates to households is effectively risk-reducing, considering the different risk weights of the assets involved. This article seeks to add to the literature by exploring the impact of a risk-reducing move (reduction in the level of loans and advances to carbon-emitting corporate companies) on shareholder value. However, Reghezza et al. (2022) established that such risk-reducing moves could be costly when European banks decided not to give credit to polluting companies after the Paris agreement. In this research, emphasis is provided concerning interest rates (pricing) that are assumed not to be raised by banks to the existing highly dependent carbon emission industries in compensating for the reduced corporate loans or escalated climate risks in their clients' portfolios. The argument is that raising interest rates may not deter corporations from GHG emission practices since they may pass those costs to the end user of their products and still pollute the atmosphere. Even though the higher interest rates are consistent with banks requiring direct compensation for exposure to transition risks, Ivanov et al. (2022) established that the total committed credit to companies with higher interest rates does not change significantly.

It is, therefore, imperative to investigate if rates of reduction in corporate loans, which are 100% risk-weighted in terms of Basil rules, could lead to increases in ROE or to lesser rates of reduction in ROE (shareholder value creation moves). It is also equally important to establish if the reductions in corporate loans are accompanied by disproportionate reductions in ROE (a value-destroying alternative). Hence, it is axiomatic that uncovering the consequences of transitional risk management on this investor value becomes critical if sustainability in value creation should be prioritized.

1.2. Shareholder value-creating alternative amidst transition risks

Within business dynamics, stakeholders, such as suppliers, will supply products and receive payments in return, while others, such as customers, will exchange money for the agreed goods and services. Employees are aware of the agreed wage rates provided they render a stipulated number of labor hours, whilst lenders have a right to interest payments, and governments rights are located in tax payments they receive (Bender & Ward, 2009, p. 25). Indeed, shareholders bear the ultimate risk in the sense that company directors are not under any obligation to declare a dividend. It is unknown whether the share price will rise to produce a capital gain (Bender & Ward, 2009). In the wake of risks such as transitional risks, bank management must fully understand the impact on shareholder value creation brought about by such events. Houston and Shan (2019) posited that there is significant attention on environmental issues (particularly for lending decisions) that shareholders and other stakeholders are orchestrating.

Effort and capability by shareholders to influence the levels of climate related disclosures in firms (Flammer et al., 2021) reflects shareholders' discernment of perceived risks associated with transitional risks. The fact that investors have an obligation to hedge against climate risks (Engle et al., 2020) reflects the investors' awareness of how transitional risks can impact shareholder value.

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Transition risks stemming from policy changes, technological changes and regulatory demands can lead to losses on carbon-intensive assets, which can significantly affect investors' portfolios (Monasterolo, 2020). Indeed, there are multiple factors, including risk-return profiles, that preclude scaling of finance towards green initiatives (Prasad et al., 2022).

Investment decisions and the timing of the investments are critical factors in dealing with transition risks, bearing in mind that both factors affect investors. Hence the assertion by Roncoroni et al. (2021) that it is incumbent upon banks to make prompt investment decisions geared towards environmental friendly activities in order to mitigate against transitional risks is profound. To contextualize transition risks in banks, the description by Campiglio et al. (2019) is elucidating. According to Campiglio et al. (2019), transition costs constitute losses of a financial nature and economic instability costs emanating from a realignment to a low-carbon economy. Additionally, pertinent sources of transitional costs include policy changes, technological changes and adjustments in market preferences by households (Campiglio et al., 2019).

Just as in changes in market preferences whereby households can switch toward greener consumption, banks can switch loans and advances to companies and sectors which are pro-green initiatives. Citing the recommendations of the task force on climate-related financial disclosures report (2017), Campiglio et al. (2022) captured this mitigation behavior by describing transition risks as encompassing those created by mitigation and adaptation policy, emerging clean technologies and behavioral changes of consumers and investors emanating from the transition to a low-carbon economy.

Moreover, Cui et al. (2018) posited that green lending reduces risk of credit related exposures. However, in moving to loans and advances related to a greener economy, risks associated with such a switch need to be prudently managed by considering the corresponding returns to shareholders. Prudence in allocating funds, administering portfolios, and managing risk emerge as core to the shift towards a greener economy (Shrivastava et al., 2019). This research proposes that such prudence is also core to shareholder value creation. In particular, the researchers' understanding of transition risks corresponds to that of Aven et al. (2018, p. 4) in that risk is the potential for realizing unwanted, negative consequences of an event. In the case of a bank, such negative consequences may manifest themselves in the form of reduced ROE.

ROE is used in this study ahead of earnings per share (EPS), since Equity investors seem to be aware that EPS growth proffers a better clarity to non-financials' capital market value. At the same time, ROE correlates to market values (Habibniya & Dsouza, 2018; Akbar, 2021; Moussu & Petit-Romec, 2014). Due to various considerations such as risk weights of assets, pricing and regulatory capital, banks need to execute portfolio tilts orderly. However, according to Monasterolo et al. (2017), an orderly transition involving incentives could be ideal to reduce negative effects as well as serve as a catalyst for the readiness to accept the transition to a low carbon economy. In the same vein Roncoroni et al. (2021) suggested that the sudden shifts in investments strategies that are associated with a disorderly transition could jeopardize market returns due to unanticipated price adjustments.

Due to a disorderly transition, banks can review the profitability impact of loans related to fossil fuels and devalue their assets (Semieniuk et al., 2021). Portfolio tilts should therefore be carried in an orderly fashion, entailing prudence. Orderly transitioning is critical, since market players can anticipate price adjustments (Roncoroni et al., 2021). Transparency in climate risk disclosures, as well as regulatory obligations, will induce financial institutions to channel funds towards lower greenhouse gas emitters (Semieniuk et al., 2021).

One way to achieve this strategic and sustainable alternative is to reduce corporate loans with commensurate reductions in maturity terms. Javadi and Masum (2021) highlighted the need for debt restructuring by suggesting to lenders to pay attention to climatic risks which could severely affect long-term loans. It is key for creditors to evaluate climate credit risk in credit decision making because a poor assessment could lead to substantial financial losses (Monnin, 2018). Hence, shareholder value creation can be compromised. Banks' challenge in reducing long-term corporate loans

or other wholesale loans linked to companies with high GHG emissions is an accompanying reduction in revenue accruing to banks in the form of interest income. According to Nkwaira and Kruger (2018), ROE can be achieved as follows:

$$ROE = \left(Net\ interest\ income + \right.$$
$$+Other\ income - Operation\ expenses + \quad (1)$$
$$\left. +Provisions\right) \cdot \frac{leverage}{Total\ assets}$$

Focusing on net interest income and other income, it can be argued that a reduction in loans and advances without a strategic tilt in the portfolio of assets can lead to deteriorated ROE, all else being equal. However, the reduction in earnings can be more pronounced in periods of declining interest rates. However, suppose banks can institute prudent portfolio tilt and leverage on fees and commissions (other income) ROE can be enhanced.

It is therefore prudent for banks to make investment decisions that incorporate the risks emanating from transitioning to lower carbon emissions. Literature reviewed has revealed that through reductions in loans to high emitters of CO_2, banks could strategically plan their asset portfolios and attain shareholder value despite the potential impact of reduced income resulting from transitional risks. Resultantly, the aim of the study is to investigate the feasibility of banks in creating shareholder value as they transition away from GHG financing.

1.3. Study hypothesis

A hypothesis has been developed in predicting the capacity of banks to create shareholder value despite reductions in loans to GHG emitting companies.

H1: The rate of reduction in risk measured by reduced loans to GHG companies is more than the rate of reduction in ROE.

2. METHODS

A quantitative methodology was employed. The study used publicly available data from four banks listed on the Johannesburg Stock Exchange (JSE), the largest stock exchange in Africa, for 21 years from 2001 to 2021. Company websites were used to retrieve loan-level data from the statements of financial position. Reduced segmental loans and advances consisting of corporate and wholesale loans were tracked from segmental balance sheet analyses. Corresponding ROE changes were also tracked from income statements. Consequently, the research matched corporate loan-level data to bank-level ROE.

Furthermore, periods of reductions in corporate loan levels were matched to ROE data during periods in which the official interest rate and the repo rate decreased. Periods in which the repo rates moved downwards were retrieved from the South African banks' websites. Periods during which interest rates moved downwards were utilized to provide a stress test scenario to test banks' capabilities to generate shareholder value without compensating for the reduction in loans and advances to GHG emitters through corresponding price increases. This scenario equates to banks' utilization of financial resources to support climate regulation whilst bolstering profitability. The repo rate is the rate at which central banks, and in this study, the reserve bank of South Africa, lend or discount eligible paper for deposit money banks (Matemilola et al., 2015). Since loans and advances to the corporate and wholesale sectors were used as a proxy of loans to GHG-emitting companies, their year-on-year reductions were perceived as risk reduction. For First Rand group, RMB (which represents a diversified business portfolio of the group's activities in the corporate and investment banking segments), loans and advances to corporate clients were utilized.

ROE was employed as it represents how much net income banks generate per unit of invested currency and therefore reflects whether shareholder value is growing. It is assumed in all the years that ROE increases were due to performance enhancement and not financial engineering, such as reductions in equity resulting from share repurchases. Bearing that a company can reduce profitability and still add value (Bender & Ward, 2009, p. 11), an assessment was done to test the shareholder value creation of banks under different levels of risk and commensurate ROE.

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A descriptive analysis was carried out on the South African banking sector and individual banks to gain insights into the main variables. As a result, rates of change figures pertaining to mean values, median values, minimum values and maximum values in assets and in ROE were obtained and interpreted.

A hypothesis-testing focus was used to test value-creation propositions concerning the variables of interest (rate of change in corporate loans and ROE). The significance level α was denoted as 0.05 to maximize the probability of reaching a correct decision. Since the sample size is small, a t-test with n-1 degrees of freedom was used to test the hypothesis, and the evidence provided was used to conclude the propositions for banks in Africa.

3. RESULTS

This section furnishes the research results and commences with findings on shareholder value alternatives.

3.1. Shareholder value creation alternatives

The research results, as provided in this section, are summarized through tables depicting movements and changes in interest rates, loans and advances (assets) and ROE for different periods and for the four banks under study. The banks are denoted B1, B2, B3 and B4 for convenience.

Table 1 depicts the level of perceived risk in comparison to a change in shareholder return. It reflects a significant reduction in loans and advances accompanied by an equally substantial but opposite move (increase) in ROE despite a substantial drop of 200 basis points in the repo rate. This is a shareholder value-enhancing move.

Table 2 presents the level of perceived risk corresponding to a change in shareholder value. With a 50 basis points drop in the repo rate, the reduction in risk through a –0.038 change was more than the corresponding reduction in ROE. The resulting permutation denotes another value-creating move by B1.

In Table 3, another risk and return scenario is presented. B2's move to reduce risk through a reduction in loans and advances from 2008 to 2009, as depicted in Table 3, represented a challenge in that the corresponding ROE was reduced disproportionately. The outcome is shareholder value destruction.

Table 4 outlines yet another shareholder value move in response to a change in perceived risk. The 2009 to 2010 picture changed for B2, as shown in the table. With a change in assets from R234,505 billion to R214,593 billion, a 0.083 drop, there was a slightly lesser drop in ROE of 0.081. However, despite the smaller difference, the move in risk reduction still resulted in shareholder value enhancement.

Table 5 depicts the alternative value creation move after a 50 basis point drop in the repo rate.

Table 1. Level of perceived risk compared to a change in shareholder return for B1

B1 Tracked movements	Variable	Year 2002–2003		% change	Change in basis points
	Interest	12	10	–	–200 basis points
Risk	Assets	98,000	48,000	–0.541	–
Return	ROE	0.4	0.9	22	–
Outcome	Value creation: Risk reduces and ROE increases				

Table 2. Second shareholder value-enhancing move for B2

B1 Tracked movements	Variable	Year 2016–2017		% change	Change in basis points
	Interest	7	6.5	–	50 basis points
Risk	Assets	370,199	356,029	–0.038	–
Return	ROE	16.5	16.4	–0.01	–
Outcome	Value creation: Risk reduces more than ROE				

Table 3. Risk-Return value destroying move for B2

B2 Tracked movements	Variable	Year 2008–2009		% change	Change in basis points
	Interest	11.5	8.6	–	–290
Risk	Assets	278,243	234,505	–0.157	–
Return	ROE	18.2	13.6	–0.253	–
Outcome	Value destroying: Risk reduces, and ROE reduces more than risk				

Table 4. Risk-Return value creation move for B2

B2 Tracked movements	Variable	Year 2009–2010		% change	Change in basis points
	Interest	8.6	8	–	–60
Risk	Assets	234,505	214,593	–0.083	–
Return	ROE	13.6	12.5	–0.081	–
Outcome	Value creation: Risk reduces more than ROE				

Table 5. Second Risk-Return combination of value creation for B2

B2 Tracked movements	Variable	Year 2016–2017		% change	Change in basis points
	Interest	7	6.50	–	–50
Risk	Assets	355,650	346,471	–0.026	–
Return	ROE	15.3	17.1	0.118	–
Outcome	Value creation: Risk reduces and ROE increases				

Another value enhancement for B2, as depicted in the table, came from 2016 to 2017 when a corresponding loan reduction and advances of 0.026 accompanied a 50-basis drop in interest rates. As a result, a substantial rise in ROE of 11.8% was witnessed, representing an overall value creation for shareholders.

Table 6 reflects shareholder return move in response to a substantial drop in interest rates in a period corresponding to the global financial crisis. B3 value creation came in the transition from 2008 to 2009 when a substantial drop of 290 basis points in interest rates was recorded. There was a reduction in risk of 0.135, which did not induce a movement in ROE. Regardless of the static move in ROE, the overall outcome is shareholder value enhancement by reducing risks.

Table 7 displays a value adding alternative. Despite a moderate reduction in interest rates of 50 basis points, as reflected in Table 7, B3 significantly re-

Table 6. Risk-Return alternatives yielding value enhancement for B3

B3 Tracked movements	Variable	Year 2008–2009		% change	Change in basis points
	Interest	11.5	8.6	–	–290
Risk	Assets	130,591	112,989	–0.135	–
Return	ROE	25	25	0	–
Outcome	Value creation: Risk reduces, and ROE stays the same				

Table 7. Risk-Return moves yielding destruction in value for B3

B3 Tracked movements	Variable	Year 2011–2012		% change	Change in basis points
	Interest	5.5	5	–	–50
Risk	Assets	155,317	87,407	–0.437	–
Return	ROE	28.7	23.2	–0.192	–
Outcome	Value creation: Risk reduces more than ROE				

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Table 8. Alternative Risk-Return combinations for value creation in B4

B4 Tracked movements	Variable	Year 2010–2011		% change	Change in basis points
	Interest	6	5.5	–	–50
Risk	Assets	130,434	124,681	–0.044	–
Return	ROE	15.1	16.4	0.086	–
Outcome	Value creation: Risk reduces and ROE increases				

duced risk by almost 44%. ROE, in turn, was reduced by 19%. Since the risk reduction was substantially more than the corresponding reduction in ROE, shareholder value was created.

In Table 8, an increase in risk and a corresponding shift in return is portrayed. B4 slightly reduced its loans and advances to the corporate world by 4%. However, the slight drop saw a substantial positive increase in ROE, signaling value creation by a bank.

An overwhelming 88% of the above cases prove to be value enhancing.

3.2. Descriptive results

In Tables 9 and 10, the mean reduction in corporate loans between 2001–2021 was 18.2% amongst the studied banks. A maximum reduction of 54% was experienced by B1, and a minimum of 0.026 was experienced by B2. Banks have reduced their loan portfolios to GHG companies in different quantum and periods even though all periods were associated with interest rate declines. In the year that the most significant loan decline was witnessed, the most substantial ROE value was created by B1 (22%).

3.3. Null hypothesis testing results

As depicted in Table 11, there is a negative but strong relationship between a reduction in risk attached to loans advanced to GHG-emitting companies and ROE for the banks based on a Pearson coefficient r of –0.72885 and a significant p-value ≤ 0.05. The R-squared of 0.53 indicates that rates of change in corporate loans explain 53% of the variation in ROE changes. The coefficient of non-determination of 0.47 indicates that 47% of the variability is accounted for by something else. Consequently, a rejection of the null hypothesis occurs and the proposition that banks can still create shareholder value despite reductions in loans and advances earmarked for GHG emitting companies is favored.

Table 9. Descriptive analysis

Variables	Independent variables	Dependent variables
	% change Corporate loans and advances	% change ROE
Mean	–0.182	2.079
Median	–0.109	–0.005
Maximum	–0.541	22
Minimum	–0.026	–0.01

Table 10. Descriptive results by bank

Variables	Independent variables				Dependent variables			
	% change Corporate loans and advances				% change ROE			
Bank	B1	B2	B3	B4	B1	B2	B3	B4
Mean	–0.300	–0.0887	–0.286	–0.044	11	–0.072	–0.096	0.086
Median	–0.300	–0.083	–0.286	–0.044	11	–0.081	–0.096	0.086
Maximum	–0.541	–0.157	–0.437	–0.044	22	–0.253	–0.192	0.086
Minimum	–0.038	–0.026	–0.135	–0.044	–0.01	–0.081	0	0.086

Table 11. Linear regression

Statistic	Value
R	–0.73
t value	1.86
Df	7
Tails	1
R squared	0.53
k^2	0.47
p-value	0.05

4. DISCUSSION

Firstly, the descriptive results reflect a substantial 85% of the cases in which banks created shareholder value despite reductions in corporate loans to ghg emitters. The time series nature of the results provides certainty in that an orderly transition can be achieved thereby addressing the fears of disruptions in market returns which can manifest if a disorderly transition (Roncoroni et al. 202) were allowed to take place. The descriptive results are even more pronounced in pertinence due to the fact that interest rates declined during the studied periods implying that the room for banks to compensate for the reduced loans by raising interest rates was very limited. However, such an overwhelming level of shareholder value enhancement serves to compliment investors efforts such as their ability to hedge against climate risks as was posited by Engle et al. (2020). With the hypothesis-testing focus, the objective was to test the proposition concerning shareholder value creation based on movements in ROE after reductions in GHG risk through a reduction in loans to high GHG-emitting companies. The significance of the rejection is drawn from the rejection of the null hypothesis at $p \leq 0.05$ in support of the alternative hypothesis that stipulates the creation of shareholder value in the wake of a reduction in loans to GHG emitters. The proposition was that banks create shareholder value when they reduce loans and advances to corporate companies, which are large GHG emitters. In most cases, whenever risk was reduced, the corresponding rate of reduction in ROE would be less or in some instances ROE would increase. These scenarios demonstrated the capacity of banks to enhance shareholder value despite reducing high income generating loans. Hence a contradiction to Reghezza et al. (2022), who established that such risk-reducing moves could be costly following European Banks' reallocation of credit away from polluting companies in the wake of the Paris agreement, was established. Moreover, not only is the rejection of the null hypothesis statistically significant, the results present an important finding in that banks can be encouraged to accelerate the transition to green financing in order to sustain profitability with commensurate rewarding of shareholders through adequate shareholder returns. Putting it differently, the statistical significance corresponds to the substantive significance which can be located in the positive implications of the impact of loan reductions to shareholder value creation.

The corresponding lesser rates of reductions in ROE or even outright increases provide evidence of this possibility in value creating alternative. However, the findings align with the assertion by Bender and Ward (2009, p. 11) that a company can reduce returns and still create shareholder value. An alignment is also evident in an argument postulated by Cui et al. (2018) that green lending reduces risk of credit related exposures. Therefore, by implication, banks can still create shareholder value if they were to reduce funding towards high GHG emitting companies provided they devise prudent strategic portfolio tilts in assets. By so doing banks can play a pivotal role in climate risk mitigation and shareholder value creation. However, bearing in mind that the results were obtained in periods of declining interest rates, further studies can be done for periods of varying interest rates in order to determine the pricing effects on shareholder value creation amidst loan reductions to GHG emitters.

CONCLUSION

This study was aimed at investigating the capacity of banks to create shareholder value when faced with reductions in loans to GHG emitting companies. The descriptive results clearly depicted the feasibility in value creation considering an 85% value enhancing capability over the 21-year period. The time series nature of the results gives credence to the views that an orderly transition from GHG emitters to green projects can be achieved with minimum disruptions to market conditions. This is further demonstrated

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by the consistent generation of shareholder value over time despite evident declines in corporate loans to GHG emitters. The hypothesis that banks can still create shareholder value despite reductions in loans and advances earmarked for GHG emitting companies was supported at p-value ≤ 0.05 and with 53% of variation in ROE, being explained by the reduction in loans to GHG emitters. Moreover, the majority of cases showed that risk associated with reductions in loans to GHG emitters reduced more than corresponding reductions in ROE, a scenario described as shareholder value enhancing. The positive outcome of the risk-return relationship is also vivid in the value of the R squared metric which indicates that 53% of the changes in ROE is explained by the rates of change of corporate loans. Accordingly, it is concluded that transitioning away from GHG emitting companies does not hinder the capacity of banks to create shareholder value. Banks can create shareholder value if an orderly transition is carried out despite a reduction in corporate loans to GHG emitting firms. These results serve to encourage banks to be progressive and embrace green projects financing at the expense of the traditional GHG projects.

AUTHOR CONTRIBUTIONS

Conceptualization: Chekani Nkwaira.
Data curation: Chekani Nkwaira.
Formal analysis: Chekani Nkwaira.
Investigation: Chekani Nkwaira.
Methodology: Chekani Nkwaira.
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