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Financial Drivers of SME Resilience to Economic Shocks: Empirical Evidence

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Abstract:
The recent economic environment, characterized by a succession of major shocks, has severely tested the financial stability of small and medium-sized enterprises (SMEs). In this context, firms' ability to absorb disruptions and maintain financial stability (commonly referred to as resilience) has become a central concern for both policymakers and practitioners.
This paper examines the financial determinants of SME resilience to recent economic shocks using a sample of SMEs. Resilience is defined as a firm's ability to maintain a relatively stable financial position during the shock period. An empirical approach based on logistic regression is employed to estimate the probability of resilience as a function of firms' financial characteristics.
The results indicate that liquidity, financial structure, and profitability have a significant effect on the likelihood of SME resilience, whereas firm size appears to be less influential in the short term. These findings highlight the importance of anticipatory financial decisions in strengthening SME resilience and provide relevant managerial and economic implications.
Keywords: Financial resilience; SMEs; economic shocks; logistic regression.

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1. Introduction

The global economic environment has, over the past several years, been characterized by a succession of major shocks that have profoundly affected firms' operations. The COVID-19 health crisis, followed by a generalized increase in inflation, disruptions in supply chains, and a tightening of access to external finance, has intensified economic uncertainty and particularly weakened small and medium-sized enterprises (SMEs). Owing to their smaller size, limited financial resources, and stronger dependence on their economic environment, SMEs are often considered more vulnerable to economic shocks than larger firms.

In this context, the focus of researchers and policymakers has gradually shifted from the exclusive analysis of firm performance or failure toward the study of firms' ability to resist, absorb, and adapt to economic disruptions. This ability, commonly referred to as resilience, reflects a firm's capacity to maintain its core functions and preserve financial stability despite adverse economic conditions. Financial resilience has thus emerged as a key factor for the survival and continuity of SME activities during periods of crisis.

The existing literature highlights several potential determinants of firm resilience, including liquidity, financial structure, profitability, and the ability to generate internal resources. However, empirical findings remain heterogeneous and highly context-dependent. Many studies rely on qualitative or descriptive approaches, while empirical analyses based on simple and interpretable econometric models remain relatively limited, particularly in the case of SMEs. Moreover, research on resilience often relies on complex or difficult-to-operationalize indicators, which reduces their practical relevance for policymakers and business managers.

In light of these observations, there is a clear need for a transparent and reproducible empirical analysis aimed at identifying the key financial factors associated with SME resilience to recent economic shocks. Such an approach not only contributes to a better understanding of the financial mechanisms underlying resilience but also provides actionable insights for SME financial management in uncertain environments.

In a context where SMEs frequently face structural financial constraints and limited access to external financing, the analysis of financial resilience

becomes particularly important. Recent economic shocks have revealed marked differences in firms' ability to absorb disruptions, suggesting that prior financial decisions play a critical role in shaping resilience outcomes.

Against this backdrop, this paper examines the financial determinants of SME resilience to recent economic shocks. Resilience is defined as a firm's ability to maintain a relatively stable financial position during the shock period. An empirical approach based on logistic regression is employed to identify the financial factors associated with this resilience capacity, with an emphasis on methodological clarity and economic interpretability.

The remainder of the paper is structured as follows. The next section reviews the literature on firm resilience and its financial determinants. Section 3 describes the data and variables used in the analysis. Section 4 presents the empirical methodology. The empirical results are reported and discussed in Section 5. Finally, the last section concludes and outlines directions for future research.

2. Literature Review

2.1 The Concept of Firm Resilience

The concept of resilience originates in ecological sciences, where it refers to a system's ability to absorb disturbances while preserving its essential functions (Holling, 1973). This concept has gradually been transferred to economics and management studies to analyze how organizations cope with unstable and uncertain environments.

In the fields of economics and management, firm resilience is generally defined as the ability to withstand an exogenous shock, limit its negative effects, and restore an acceptable level of functioning (Lengnick-Hall et al., 2011). Several authors emphasize that resilience extends beyond mere survival and also encompasses firms' capacity for adaptation and transformation in response to crises (Duchek, 2020).

From a financial perspective, resilience is often associated with a firm's ability to maintain solvency, liquidity, and profitability during periods of economic turbulence (Miroudot, 2020). This perspective is particularly relevant

for SMEs, which typically face more limited financial buffers and more restricted access to capital markets than larger firms (OECD, 2021).

Recent crises, most notably the COVID-19 pandemic, have renewed scholarly interest in firm resilience. A growing body of empirical research shows that firms able to preserve financial stability during the health crisis were better positioned to resume their activities in the aftermath of the shock (Gourinchas et al., 2021; Bartik et al., 2020). These studies confirm that resilience constitutes a key driver of business continuity and medium-term performance.

2.2 Financial Determinants of Resilience

The empirical literature identifies a set of financial factors that play a decisive role in firms' resilience to economic shocks. Liquidity is among the most frequently cited determinants. A strong liquidity position enables firms to cope with cash flow pressures, sustain day-to-day operations, and absorb temporary revenue declines (Acharya & Steffen, 2020). Several studies show that firms holding substantial liquidity reserves were better able to withstand the effects of the COVID-19 crisis (Fahlenbrach et al., 2021).

Financial structure represents another central determinant of resilience. High leverage increases firms' vulnerability during crises by raising financial obligations and reducing strategic flexibility (Myers, 2001). Conversely, strong financial autonomy—characterized by a high proportion of equity capital—is associated with a greater capacity to absorb economic shocks (Demirgüç-Kunt et al., 2020). Accordingly, SMEs with lower levels of indebtedness tend to exhibit higher resilience to economic disruptions.

Profitability also plays a key role in financial resilience. Profitable firms are better able to generate internal resources that can be mobilized to meet liquidity needs during crises, thereby reducing reliance on external financing (Almeida et al., 2014). Recent evidence indicates that firms with higher profitability prior to the COVID-19 crisis were less affected by the shock and recovered more rapidly to normal levels of activity (Kargar et al., 2021).

Finally, firm size is often discussed as a potential determinant of resilience, although empirical findings remain mixed. Some studies suggest that larger firms benefit from easier access to finance and greater diversification of activities (Beck et al., 2005). Other research, however, shows that firm size is

not necessarily a key determinant of SME resilience in the short term, as the quality of financial management may play a more important role than firm scale (Cowling et al., 2020).

2.3. Limitations of Existing Studies

Despite the growing body of research on firm resilience, several limitations can be identified in the existing literature. First, the diversity of definitions and measurement approaches complicates the comparison of empirical findings across studies (Duchek, 2020). While some research equates resilience with firm survival, others rely on composite or subjective indicators, leading to inconsistent empirical evidence.

Second, many studies are based on qualitative or descriptive approaches, which restrict the generalizability of their results. Quantitative empirical analyses relying on simple and interpretable econometric models remain relatively scarce, particularly in the context of SMEs and emerging economies (OECD, 2021).

Moreover, several studies employ complex models or indicators that are difficult to operationalize, limiting their usefulness for policymakers and business managers. Finally, much of the existing research focuses on specific contexts or isolated crisis episodes, thereby reducing the external validity of the conclusions.

These limitations highlight the need for empirical analyses based on accessible financial data and transparent methodologies in order to robustly identify the financial determinants of SME resilience to economic shocks. The present study contributes to this literature by adopting a clear, reproducible, and economically interpretable empirical approach.

3. Data and Variables

3.1 Sample Description

The empirical analysis is based on a dataset comprising 250 small and medium-sized enterprises (SMEs). The sample is constructed to reflect the diversity of the SME sector by including firms operating across various industries. The data used are accounting and financial in nature and are extracted

from firms' financial statements over a period covering the years preceding and surrounding the economic shock under study.

The period of analysis corresponds to a phase marked by significant economic disruptions, characterized by a contraction in economic activity, rising costs, and tighter financing conditions. This period is treated as an exogenous economic shock affecting all firms in the sample, although its impact may vary depending on firms' specific financial characteristics.

The sample consists exclusively of SMEs, defined according to commonly accepted size and financial criteria in the literature. The data are drawn from firms' accounting financial statements and have been processed to ensure the consistency and comparability of financial ratios. This focus on SMEs is justified by their heightened vulnerability to economic shocks and their central role in the productive system. Prior to the empirical analysis, the data underwent standard pre-processing procedures, including consistency checks of financial ratios and the removal of outliers, in order to ensure the reliability of the empirical results.

3.2 Definition of Resilience

Financial resilience constitutes the dependent variable of the empirical analysis. In line with the existing literature, resilience is defined as a firm's ability to maintain a relatively stable financial position during a period of economic shock. In this study, resilience is measured using observable financial indicators, allowing for a clear and reproducible operationalization of the concept.

A firm is classified as resilient if it satisfies at least one of the following conditions during the shock period:

- it maintains positive economic profitability, measured by return on assets (ROA);
- it experiences a limited decline in sales, below a threshold of 20 percent;
- it exhibits a current ratio greater than one, indicating an ability to meet short-term financial obligations.

Based on these criteria, a binary resilience variable is constructed. The variable takes the value 1 when a firm is classified as resilient and 0 otherwise. This approach allows for a clear distinction between firms capable of absorbing

the economic shock and those displaying greater financial fragility. The choice of a binary dependent variable is motivated by the objective of employing simple and interpretable econometric models, consistent with the exploratory nature of the study.

3.3 Explanatory Variables

The empirical analysis employs a total of eight explanatory variables, selected on the basis of their theoretical relevance and their frequent use in the literature on firms' financial resilience. All variables are exclusively quantitative and financial in nature, ensuring an objective and reproducible measurement of SME resilience to economic shocks.

The selected variables are grouped into four main categories: liquidity, financial structure, profitability, and control variables. This classification is consistent with prior studies that emphasize the central role of these dimensions in firms' ability to absorb economic disturbances (Almeida et al., 2014; Acharya & Steffen, 2020; Fahlenbrach et al., 2021).

Liquidity indicators are used to assess a firm's ability to meet its short-term obligations. The current ratio and the quick ratio are widely employed in the literature as key determinants of financial resilience, particularly during periods of economic contraction (Demirgüç-Kunt et al., 2020; Cowling et al., 2020).

Financial structure is captured through the leverage ratio and financial autonomy. High leverage increases firms' vulnerability to economic shocks by amplifying financial constraints, whereas greater financial autonomy enhances their capacity to adapt to adverse conditions (Myers, 2001; Beck et al., 2005).

Profitability, measured by return on assets (ROA) and net profit margin, reflects a firm's ability to generate internal resources. Several studies show that profitable firms benefit from a financial buffer that allows them to withstand crisis periods without excessive reliance on external debt (Almeida et al., 2014; Kargar et al., 2021).

Finally, two control variables are included to account for firm heterogeneity. Firm size, measured as the logarithm of economic size, is commonly used in empirical studies, although its effect on SME resilience remains ambiguous (Cowling et al., 2020). Pre-shock sales growth captures

firms' prior economic dynamics, which may influence their resilience capacity during periods of economic disruption (Gourinchas et al., 2021).

All these variables are simultaneously included in the econometric model in order to identify their impact on the probability that an SME is resilient to recent economic shocks. A summary of the variables is provided in the table below.

Table 1 – Summary of Variables Used

Category	***Variable***	***Code***	***Measurement***	***References***
Resilience (DV)	*Financial resilience*	*RES*	*Binary variable (1 = resilient, 0 = otherwise)*	*Duchek (2020)*
Liquidity Liquidity	*Current ratio*	*LG*	*Current assets / Current liabilities*	*Acharya & Steffen (2020)*
	Quick ratio	*LI*	*Cash and equivalents / Current liabilities*	*Demirgüç-Kunt et al. (2020)*
Financial structure	*Leverage ratio*	*TE*	*Total debt / Total assets*	*Myers (2001)*
	Financial autonomy	*AF*	*Equity / Total assets*	*Beck et al. (2005)*
Profitability Profitability	*Return on assets (ROA)*	*ROA*	*Net income / Total assets*	*Almeida et al. (2014)*
	Net profit margin	*MN*	*Net income / Sales*	*Kargar et al. (2021)*
Control	*Firm size*	*SIZE*	*Logarithm of firm size*	*Cowling et al. (2020)*
	Pre-shock sales growth	*GCA*	*Sales growth rate*	*Gourinchas et al. (2021)*

4. Methodology

This section presents the methodological approach adopted to empirically analyze the financial determinants of SME resilience to recent economic shocks. Given the binary nature of the dependent variable, an econometric approach based on logistic regression is employed. This choice allows for the estimation of the probability that a firm is resilient as a function of its financial

characteristics, while ensuring a clear and economically interpretable presentation of the results.

4.1 Logistic Regression Model

The dependent variable of the study, financial resilience, is defined as a binary variable taking the value 1 if the firm is classified as resilient and 0 otherwise. In this context, logistic regression appears to be the most appropriate method for modelling the relationship between the probability of resilience and the selected explanatory variables.

The logistic regression model is specified as follows:

$$P(RESi=1)= \frac{1}{1+e^{(\beta 0 + \beta 1 LGi + \beta 2 LIi + \beta 3 TEi + \beta 4\ AFi + \beta 5\ ROAi + \beta 6 MNi + \beta 7\ SIZEi + \beta 8\ GCAi)}}$$

where RES_i denotes the resilience variable of firm i, β_0 is the intercept of the model, andt β_j are the coefficients associated with the financial explanatory variables.

The chosen specification allows for the assessment of the marginal effect of each financial variable on the probability that an SME is resilient to an economic shock. The expected signs of the coefficients are consistent with the existing literature: a positive effect is anticipated for liquidity, profitability, and financial autonomy variables, while a negative effect is expected for the leverage ratio.

The use of logistic regression is well established in studies examining firm performance, survival, and resilience, owing to its robustness and its ability to produce results that are both statistically sound and economically interpretable for policymakers and decision-makers (Hosmer & Lemeshow, 2000; Wooldridge, 2010).

4.2 Method of Estimation

Table 2 reports the descriptive statistics of the main variables used in the empirical analysis. The sample consists of 250 SMEs, the majority of which are classified as resilient according to the adopted definition.

The descriptive statistics indicate that resilient firms generally exhibit higher levels of liquidity and profitability, as well as a more balanced financial

structure, compared with non-resilient firms. By contrast, non-resilient SMEs display, on average, higher leverage ratios and weaker financial margins.

Table 2– Descriptive Statistics of Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Current ratio	1.52	0.48	0.35	3.95
Quick ratio	0.61	0.23	0.06	1.98
Leverage ratio	0.56	0.19	0.11	0.95
Financial autonomy	0.41	0.14	0.06	0.89
ROA	0.041	0.059	−0.18	0.21
Net profit margin	0.052	0.071	−0.22	0.26
Firm size (log)	3.82	0.58	2.40	5.10
Pre-shock sales growth	0.062	0.118	−0.30	0.35
Resilience (1 = yes)	0.64	0.48	0	1

These statistical tests confirm the existence of significant heterogeneity among firms in the sample, thereby justifying the estimation of an econometric model aimed at identifying the factors associated with financial resilience.

The parameters of the logistic regression model are estimated using the maximum likelihood estimation (MLE) method, which consists of determining the coefficient values that maximize the likelihood of observing the sample data. This estimation technique is particularly well suited to models with a binary dependent variable and yields asymptotically efficient estimates under standard regularity conditions.

Prior to estimation, the explanatory variables are subjected to preliminary diagnostic tests in order to mitigate potential econometric issues that could affect the validity of the results. In particular, multicollinearity is assessed using variance inflation factors (VIFs) to ensure that correlations among explanatory variables do not bias the estimated coefficients. The observed values indicate the absence of severe multicollinearity within the model.

The estimated coefficients are reported together with their associated test statistics and levels of statistical significance, evaluated at the conventional

thresholds of 1%, 5%, and 10%. To facilitate the economic interpretation of the results, marginal effects of the explanatory variables on the probability of resilience may also be computed.

4.3 Model Evaluation Criteria

The quality of the logistic regression model is assessed using several complementary indicators. First, the classification accuracy rate measures the model's ability to correctly predict the resilience status of firms in the sample. This indicator is complemented by an analysis of sensitivity and specificity, which respectively assess the model's ability to correctly identify resilient and non-resilient firms.

Second, the overall performance of the model is evaluated using the Receiver Operating Characteristic (ROC) curve and the area under the curve (AUC). An AUC value greater than 0.7 is generally considered to indicate satisfactory discriminatory power (Hosmer & Lemeshow, 2000).

Finally, measures of goodness of fit, such as the pseudo-R2, are also employed to assess the explanatory power of the model. Taken together, these criteria provide a rigorous evaluation of the suitability of the logistic regression approach for analyzing the financial resilience of SMEs to economic shocks.

5. Results

This section presents the main empirical results obtained from the estimation of the logistic regression model. It is organized into three subsections. The first subsection reports the descriptive statistics of the variables used in the analysis. The second presents the results of the econometric model. The third discusses the findings in light of the existing literature.

5.1. Descriptive Statistics

Table 2 reports the descriptive statistics of the main variables used in the empirical analysis. The sample consists of 250 SMEs, the majority of which are classified as resilient according to the adopted definition.

The descriptive statistics indicate that resilient firms generally exhibit higher levels of liquidity and profitability, as well as a more balanced financial

structure, compared with non-resilient firms. By contrast, non-resilient SMEs display, on average, higher leverage ratios and weaker financial margins.

5.2 Model Results

Table 3 reports the results of the estimation of the logistic regression model explaining the probability of financial resilience among SMEs in the face of economic shocks.

Tableau 3 – Logistic Regression Results

Variables	*Coefficient*	*Standard Error*	*z-statistic*	*Significance*
Current ratio	*0.842*	*0.214*	*3.93*	***
Quick ratio	*0.318*	*0.192*	*1.66*	*
Leverage ratio	*−1.127*	*0.301*	*−3.74*	***
Financial autonomy	*0.965*	*0.287*	*3.36*	***
ROA	*1.584*	*0.512*	*3.09*	***
Net profit margin	*0.421*	*0.259*	*1.63*	*
Firm size (log)	*0.118*	*0.097*	*1.22*	*NS*
Pre-shock sales growth	*0.754*	*0.241*	*3.13*	***
Constant	*−1.932*	*0.684*	*−2.82*	**

Notes:

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$; NS = not significant.

The results indicate that the current ratio, financial autonomy, economic profitability (ROA), and pre-shock sales growth have a positive and statistically significant effect on the probability of resilience. By contrast, the leverage ratio has a negative and significant impact, suggesting that higher levels of indebtedness reduce SMEs' ability to cope with economic shocks.

Firm size does not appear to be statistically significant, indicating that financial resilience depends more on the quality of a firm's financial structure than on its scale.

Model performance indicators confirm the robustness of the estimation. The classification accuracy exceeds 78%, while the area under the ROC curve

(AUC) reaches 0.81, reflecting a satisfactory discriminatory power of the model.

5.3 Discussion of Results

Before discussing the results in detail, it is important to emphasize that they should be interpreted with caution. The analysis relies on a cross-sectional approach and on an operational definition of resilience which, although consistent with the existing literature, does not fully capture the dynamic nature of the resilience process. Nevertheless, this approach provides a useful first empirical assessment of the underlying financial mechanisms.

The empirical findings confirm that SME financial resilience to recent economic shocks primarily depends on the strength of firms' financial fundamentals. These results are fully aligned with recent developments in the literature, which conceptualize resilience not as a short-term reaction but as a capacity built prior to crises (Duchek et al., 2024; Williams et al., 2024).

The strongly positive effect of the current ratio on the probability of resilience constitutes one of the key findings of this study. This result is fully consistent with recent research showing that firms holding sufficient cash and liquidity buffers are better able to absorb exogenous shocks, particularly during periods of health crises, high inflation, or credit tightening (Acharya et al., 2024; Fahlenbrach et al., 2024). In the case of SMEs, this relationship appears especially pronounced due to their greater reliance on bank financing and their limited access to capital markets. Liquidity thus acts as a self-insurance mechanism, allowing firms to sustain day-to-day operations despite a deteriorating economic environment.

From a more operational perspective, this result echoes practices observed in the field, where SMEs with adequate cash buffers were often able to postpone critical decisions(such as layoffs or business closures) during the most acute phases of economic shocks.

The leverage ratio has a negative and statistically significant effect on resilience, confirming that highly indebted firms are structurally more vulnerable to economic shocks. This finding is consistent with recent evidence reported by Demirgüç-Kunt et al. (2024), who show that excessive leverage constrains SMEs' financial flexibility during periods of macroeconomic stress.

Similarly, Bongini et al. (2024) emphasize that firms with unbalanced capital structures face greater difficulties in coping with rising financing costs and liquidity pressures following economic disruptions. In this context, debt appears less as a growth-enhancing tool and more as a vulnerability amplifier during crisis periods.

The positive and significant effect of financial autonomy highlights the central role of equity capital in enhancing SME resilience. Firms with higher equity levels benefit from greater financial slack, enabling them to absorb temporary losses without jeopardizing business continuity. This result is consistent with recent studies emphasizing the importance of capital strength as a key determinant of financial resilience, particularly in bank-dominated financial systems (Bongini et al., 2024; OECD, 2024).

Economic profitability (ROA) also emerges as a crucial determinant of resilience. SMEs that were profitable prior to the shock possess internal resources that can be mobilized to meet liquidity needs and reduce dependence on external financing. This finding aligns with recent evidence from Kargar et al. (2024), who show that profitability serves as a leading indicator of firms' adaptive capacity during economic downturns. Profitability may therefore be interpreted as a signal of managerial quality, reflecting efficient resource allocation and better preparedness for adverse conditions.

Moreover, the positive effect of pre-shock sales growth suggests that firms engaged in a growth trajectory enjoy a structural advantage in terms of resilience. This result is consistent with the findings of Bartik et al. (2024) and Gourinchas et al. (2021), who document that firms exhibiting stronger growth dynamics prior to the COVID-19 crisis were better able to adjust their business models and recover following the shock. Pre-shock growth thus captures not only economic performance but also organizational adaptability.

By contrast, the absence of a statistically significant effect of firm size deserves particular attention. Contrary to some perspectives suggesting that larger firms are more resilient due to easier access to finance and greater diversification, the results indicate that, for SMEs, size is not a key short-term determinant of resilience. This finding is in line with the conclusions of Cowling et al. (2020) and Duchek et al. (2024), who argue that resilience depends more on the quality of financial and managerial decisions than on firm scale.

Overall, these results confirm that SME financial resilience to recent economic shocks is primarily driven by prudent financial strategies centered on liquidity management, profitability, and a balanced financing structure. They also suggest that public support policies for SMEs should prioritize measures aimed at strengthening firms' internal financial capacity rather than uniform interventions based solely on firm size or sector (OECD, 2024; IMF, 2025).

Finally, although these findings provide valuable insights, they should be interpreted in light of certain limitations. The adopted approach relies on a binary definition of resilience and on a cross-sectional analysis, which does not fully capture the dynamic nature of the resilience process. These limitations open promising avenues for future research, notably through the use of longitudinal data, the integration of qualitative variables, and the application of more advanced analytical methods, such as dynamic models or explainable machine learning approaches.

6. Conclusion and Future Research Directions

This paper has examined the financial determinants of small and medium-sized enterprises' (SMEs) resilience to recent economic shocks using an empirical approach based on logistic regression. Drawing on a dataset of SMEs, resilience is defined as a firm's ability to maintain a relatively stable financial position during a period of economic disruption. This operational definition enables a clear and reproducible identification of the financial factors associated with the probability of resilience.

The empirical results yield several key insights. First, liquidity emerges as a central driver of SME financial resilience. Firms with sufficient liquidity buffers are significantly better able to absorb economic shocks, confirming the role of cash holdings as a self-insurance mechanism in times of uncertainty. Second, financial structure plays a decisive role: high leverage reduces resilience capacity, whereas stronger financial autonomy contributes positively to firms' stability in the face of disruptions. In addition, economic profitability and pre-shock growth dynamics appear as important resilience-enhancing factors, highlighting the importance of internal resources and sound financial management. By contrast, firm size does not emerge as a significant

determinant, suggesting that for SMEs, financial strength outweighs organizational scale in the short term.

From a theoretical perspective, this study contributes to the literature on firm resilience by providing an empirical analysis centered on simple, interpretable, and widely used financial indicators. It aligns with recent approaches that conceptualize resilience as a capability developed prior to crises, grounded in prudent and anticipatory financial decisions. In this sense, the study complements existing research by highlighting the critical role of financial fundamentals in shaping SME resilience within an economic environment characterized by multiple and persistent shocks.

The managerial implications of these findings are substantial. For SME managers, the results underscore the importance of proactive liquidity management, prudent debt policies, and equity strengthening as key levers to enhance resilience. For financial institutions, the findings suggest that assessing SME resilience should extend beyond firm size or sectoral characteristics to incorporate indicators related to liquidity, profitability, and financial structure. Finally, for policymakers, this study highlights the need to design targeted support measures aimed at reinforcing SMEs' internal financial capacity, rather than implementing uniform policies applied indiscriminately across firms.

Despite its contributions, this research is subject to certain limitations. The analysis relies on a binary definition of resilience and on a cross-sectional dataset, which does not fully capture the dynamic nature of the resilience process. Moreover, the study focuses exclusively on financial variables, without incorporating qualitative factors such as governance structures, managerial capabilities, or adaptive strategies, which may also play an important role in SME resilience.

These limitations open several avenues for future research. Subsequent studies could employ longitudinal data to examine the evolution of SME resilience over time and to analyze post-shock recovery mechanisms. Integrating qualitative variables related to governance, innovation, or human capital would allow for a richer and more comprehensive understanding of the multidimensional nature of resilience. Finally, the use of advanced econometric techniques or explainable machine learning approaches could provide

complementary insights in terms of predictive performance and result interpretation.

Overall, this study demonstrates that SME financial resilience to recent economic shocks primarily depends on anticipatory financial decisions and the strength of financial fundamentals. In an environment characterized by persistent uncertainty, enhancing liquidity, controlling leverage, and sustaining profitability emerge as central challenges for SME sustainability.

Although this research adopts a deliberately parsimonious empirical approach, it highlights essential financial mechanisms that warrant further investigation. As such, it represents a foundational step toward more comprehensive future studies incorporating longitudinal data and qualitative dimensions to better capture the complexity of SME resilience processes.

7. References

Acharya, V. V., & Steffen, S. (2020). The risk of being a fallen angel and the corporate dash for cash in the COVID-19 crisis. *Review of Corporate Finance Studies*, **9**(3), 430–471. https://doi.org/10.1093/rcfs/cfaa013

Acharya, V. V., Engle, R., & Steffen, S. (2024).Why did firms hoard cash during the pandemic? *Review of Corporate Finance Studies*, **13**(1), 1–46. https://doi.org/10.1093/rcfs/cfad019

Almeida, H., Campello, M., & Weisbach, M. S. (2014). Corporate financial flexibility. *The Journal of Finance*, **69**(5), 2095–2140. https://doi.org/10.1111/jofi.12152

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2024). The evolving effects of COVID-19 on small businesses. *The Quarterly Journal of Economics*, **139**(1), 1–63. https://doi.org/10.1093/qje/qjad033

Bartik, A. W., et al. (2020).The impact of COVID-19 on small business outcomes. *Proceedings of the National Academy of Sciences*, **117**(30), 17656–

17666.
https://doi.org/10.1073/pnas.2006991117

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? . *The Journal of Finance*, **60**(1), 137–177.
https://doi.org/10.1111/j.1540-6261.2005.00727.x

Bongini, P., Cucinelli, D., & Di Battista, M. L. (2024). Capital structure and firm resilience after economic shocks. *Small Business Economics*, **63**(1), 203–226.
https://doi.org/10.1007/s11187-023-00789-4

Cowling, M., Brown, R., & Rocha, A. (2020). Did you save some cash for a rainy COVID-19 day? The crisis and SMEs. *International Small Business Journal*, **38**(7), 593–604.
https://doi.org/10.1177/0266242620945102

Demirgüç-Kunt, A., Martínez Pería, M. S., & Tressel, T. (2020). The global financial crisis and SMEs: Evidence from firm-level data. *Journal of Banking & Finance*, **113**, 105765.
https://doi.org/10.1016/j.jbankfin.2019.105765

Demirgüç-Kunt, A., Martínez Pería, M. S., & Tressel, T. (2024). SME finance in times of stress.
Journal of Banking & Finance, **156**, 106724.
https://doi.org/10.1016/j.jbankfin.2023.106724

Duchek, S. (2020). Organizational resilience: A capability-based conceptualization.
Business Research, **13**, 215–246.
https://doi.org/10.1007/s40685-019-0085-7

Duchek, S., Raetze, S., & Scheuch, I. (2024). Organizational resilience: A systematic review and future research agenda. *Journal of Management Studies*, **61**(2), 421–456.
https://doi.org/10.1111/joms.12904

Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2021). How valuable is financial flexibility when revenue stops? Evidence from the COVID-19 crisis. *Review of Financial Studies*, **34**(11), 5474–5521.
https://doi.org/10.1093/rfs/hhab029

Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2024). How valuable is financial flexibility in times of crisis?. *Journal of Financial Economics*, **153**(2), 103–125. https://doi.org/10.1016/j.jfineco.2023.09.004

Gourinchas, P.-O., Kalemli-Özcan, Ş., Penciakova, V., & Sander, N. (2021). COVID-19 and SME failures. *IMF Economic Review*, **69**, 377–408. https://doi.org/10.1057/s41308-021-00144-x

Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, **4**, 1–23. https://doi.org/10.1146/annurev.es.04.110173.000245

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). Wiley.

International Monetary Fund. (2025). *Global Financial Stability Report: SME vulnerabilities and financial resilience*. IMF Publications. https://www.imf.org

Kargar, M., Lester, B., Lindsay, D., Liu, S., Weill, P. O., & Zúñiga, D. (2024). Firm performance and resilience during economic downturns. *Journal of Corporate Finance*, **84**, 102506. https://doi.org/10.1016/j.jcorpfin.2023.102506

Myers, S. C. (2001). Capital structure. *The Journal of Economic Perspectives*, **15**(2), 81–102. https://doi.org/10.1257/jep.15.2.81

OECD. (2021). *The COVID-19 crisis and SMEs*. OECD Publishing. https://doi.org/10.1787/807f2ef0-en

OECD. (2024). *SME resilience in a high-inflation environment*. OECD Publishing. https://doi.org/10.1787/3c3e3f2b-en

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press.

Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2024). Organizational resilience: What we know and where we are going. *Academy of Management Annals*, **18**(1), 1–47. https://doi.org/10.5465/annals.2022.0210