Digital Transformation and Financial Resilience under Economic Shocks: Evidence from European SMEs

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Abstract

This study investigates the role of digital transformation in enhancing the financial resilience of European small and medium-sized enterprises (SMEs) under adverse economic conditions. This empirical analysis adopts firm-level SAFE data merged with the Digital Economy and Society Index (DESI) for 27 European countries over 2016–2024, resulting in 68,055 firm-year observations. Using difference-in-differences method designed around the COVID-19 pandemic, the results show that digital transformation significantly improves SME financial resilience, with the effect becoming substantially stronger in the post-shock period. Mechanism analysis reveals that this effect operates through enhanced financing adaptability, indicating that digital environments increase firms' financial flexibility under stress. Heterogeneity analysis further shows that the resilience effect is more profound for small and medium-sized firms than for micro firms. A comprehensive set of robustness checks, including alternative index constructions, placebo tests, and subsample analyses, confirms the stability of the findings. By shifting the focus from static financing outcomes to dynamic resilience behavior, this study contributes to the literature on SME finance and digitalization by providing new empirical evidence and theoretical insights that inform crisis-oriented policy design.

Keywords

Digitalization, financial resilience, financial adaptability, financial stability, Economic shocks.