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Simulating Strategic Decision Making Under Capital Constraint: Bank and Fintech Competition Under Shocks

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Abstract. The objective of this classroom simulation is to develop students' understanding of strategic decision-making under competitive pressure and formal constraint. Participants assume the roles of an incumbent bank and a fintech entrant and make repeated decisions concerning pricing, lending posture, and investment. Across successive rounds, these choices affect profitability, equity, capital adequacy, and competitive positioning. These outcomes alter the conditions under which subsequent decisions are made. The exercise demonstrates how institutional constraints shape strategic choice, how performance feedback influences risk-taking, and how short-horizon pressures may contribute to strategic myopia, escalation of commitment, and delayed adaptation. The paper sets out the theoretical basis of the exercise, its simulation mechanics and classroom implementation, and an assessment approach centered on reflection and conceptual integration. The simulation provides a transferable teaching exercise for examining strategic behaviour under uncertainty, cumulative feedback, and institutional constraint.

Keywords: fintech education; organizational behavior; simulation-based learning; capital adequacy; strategic decision-making.

1. Introduction

This paper presents a behavioral classroom simulation. It examines how market shocks and changes in capital requirements shape strategic decision-making in financial services under staged constraints. The paper is offered as a teaching design contribution. Participants enter repeated rounds of the simulation which introduce changing capital requirements and stochastic shocks.

The pedagogical relevance locates the exercise within the strategy-as-practice tradition. It provides a structured context for examining organizational behavior under pressure, through repeated decisions, feedback and status updates. The exercise is designed to support classes that incorporate financial strategy into the curriculum. It highlights how incumbent banks and start-up fintech firms differ in funding structure, regulatory exposure, and balance sheet flexibility. These

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differences create distinct decision environments in which risk-taking, adaptation, and survival are shaped.

The simulation is designed to make contrasts explicit to students. It helps illustrate how the choices influence organizational conduct under uncertainty. Students gain practical learning experience, supported by instructors who explain the concepts behind the various stages.

Students assume the roles of management at either an incumbent bank or fintech challenger. The lecturer acts as the supervisory authority and coordinator of the simulation. The students are then asked to make their choices, and observe how those impact a hypothetical balance-sheet (Joseph, 1965; Kurtz, 2003; Westrup & Planander, 2013). Shocks and regulatory adjustments are introduced over multiple rounds. As a result, risk is not static. Rather, it is an evolving parameter that responds to changing conditions. Participants are required to adapt to this, and therefore interpret uncertainty, revise prior choices, and confront earlier decisions. The idea is to present an experiential learning environment. Its central pedagogical contribution lies in its design as a teaching instrument.

The educational motivation arises from a gap in classroom teaching. Balance sheets in taught programs are treated as purely financial constructs. Textbooks cover the tension between innovation and organizational survival (Franks & Sussman, 2005), yet these issues are often presented at a high level of abstraction. Students learn that disruption alters competition, but they are less often placed in a setting where they must respond to deteriorating performance, tighter constraints, and uncertain shocks. As a result, important organizational behavior themes, such as escalation of commitment, bounded rationality, and strategic myopia, are frequently discussed conceptually rather than experienced directly. The simulation addresses this problem. To achieve this, the choices made during the various rounds are designed to generate observable consequences for profitability, solvency, and competitive position. This, in turn, delivers the learning outcomes.

This exercise is designed specifically for organisational behavior and financial master's level courses. Its content requires an understanding of assets, liabilities and cash flows. It teaches students how these are shaped by strategic decisions. The instructor can use it to highlight that technological disruption interacts with prudential regulation.

The changing nature of the outcomes illustrates how innovation, cost structures, customer expectations, and competitive conditions alter strategic choice (Christensen, 2015). One potential practical lesson is that established institutions do not respond to these changes in a frictionless manner. It teaches that incumbent banks (and other financial service companies) operate within a formal regulatory architecture that has competitive implications. In the real world, regulators impose capital adequacy requirements, supervisory oversight, and liquidity discipline (Cevik, 2024). These institutional constraints narrow feasible strategy outcomes and alter the timing and direction of managerial action.

The learnings are intended to extend to fintech entrants. By contrast to banks, these often operate with lower balance-sheet intensity and distinct funding structures (Arnaut & Be´cirovi´c, 2023; Hamarat & Broby, 2025). The result is not simply a difference in business model, but a difference in how organizations perceive risk, absorb shocks, and respond to competitive threats. These concepts are best learnt by experience.

Conceptually, the exercise draws on regulatory stress-testing frameworks. The learning objective is, however, to understand the process behind the decisions, which such testing is designed to promote. To achieve this, the exercise emphasises decision, feedback, reflection, and revision (Alexander and Sheedy, 2008; Peura and Jokivuolle, 2004; Fouché, Mukuddem-Petersen and Petersen, 2006).

Rather than treating regulation, risk, and adaptation as background conditions, the simulation makes them integral to managerial judgment and strategic response. It therefore provides a structured setting. Students can observe how organizational conduct is shaped by formal constraint, performance pressure, and uncertainty. In this respect, the exercise moves beyond descriptive treatment of digital transformation in banking and focuses on students' judgement.

By design, outcomes from the rounds are unpredictable. The model is not intended to reproduce empirical outcomes or to solve for equilibrium behavior. Its purpose is to generate stylized but analytically meaningful choices.

The remainder of the paper is organized as follows. The literature review examines the institutional constraints affecting strategic decision-making, their relationship to digital transformation, and the role of experiential learning in pedagogical design. The simulation, and its intended learning outcomes, are then introduced. The financial decision variables are subsequently defined, followed by an explanation of the model mechanics and implementation logic, including the supporting Excel and Python tools. Section 4 outlines the classroom implementation, while Section 5 presents an observed classroom application. The paper then proposes an assessment framework before concluding with the discussion and conclusion. A teaching note is provided in the appendix.

2. Literature Review and Theoretical Foundations

This paper is grounded in four related strands of scholarship, (1) organizational risk behavior, (2) institutional constraint, (3) organizational adaptation, and (4) experiential learning. The reviewed literature identifies the behavioral mechanisms that make the simulation useful in a classroom. The central premise is that conduct under uncertainty is shaped by performance feedback, formal constraint, temporal trade-offs, and adaptive capacity. As a theoretical exercise, this body of writing suggests that the simulation outcomes are limited by the role of prudence, stress and emotion. These are hard to capture in a classroom setting.

Fintechs and banks operate within a competitive financial services environment (Donaldson, Piacentino, & Thakor, 2021). As observed by Broby (2021), fintech firms can operate with lower balance-sheet intensity than traditional deposit-funded institutions. Incumbent banks, meanwhile, remain subject to capital adequacy requirements, liquidity constraints, and maturity transformation. The competitive process that the simulation mirrors is therefore shaped by heterogeneous institutional constraints, rather than by pricing rivalry alone.

Incumbents are introduced as capital-regulated, deposit-funded intermediaries. Fintech challengers, in contrast, are modeled with lower operating costs and alternative funding structures (Lee & Shin, 2018). This design allows students to examine how organizational form shapes strategic incentives, adaptive capacity, and exposure to failure.

2.1. Organizational Risk, Performance Feedback, and Escalation of Commitment

In the organizational behavior literature, risk-taking is not fixed (March & Shapira, 1987). It can change in response to feedback, aspiration levels, and competitive pressure. Research shows that adverse performance signals may increase risk as poor performers make an effort to recover prior standing (Greve, 2003; March & Shapira, 1987; Raith, 2003). Under such conditions, escalation of commitment can emerge, particularly when managers interpret shortfalls as temporary setbacks that justify further commitment rather than retrenchment.
At the same time, the literature suggests that responses to adversity are not uniform. As financial pressure intensifies, organizations may instead reduce risk and shift toward preservation (Gilje, 2016).

The simulation is constructed to allow both patterns to emerge. Student performance can be either aggressive expansion or defensive retrenchment. This makes the exercise useful for teaching how organizational responses are shaped by interpretation and/or learnt wisdom. A limitation, however, is that the model cannot fully capture dysfunctional choices arising from affective pressures.

2.2. Institutional Constraint

Organizational action, including strategic choice, is observed to be shaped by regulative, normative, and cultural-cognitive institutions (Scott, 2008). Formal rules, supervisory expectations, and governance structures condition what organizations can do and how they respond to uncertainty (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). In the simulation, capital requirements serve as a concrete representation of such institutional constraint. They do not eliminate choice, but they narrow the feasible set of strategic actions. This differs from classroom teaching in which the topic is treated as background context rather than as an endogenous constraint that directly affects leverage, lending capacity, profitability, and solvency.

The task is performed in a setting in which rationality becomes pedagogically salient. Unlike theory, participants make decisions with incomplete information,