

Original Article

Research on the Market Competition Effect of Corporate Cash Holding: A Case Study of ANTA

Bingbin Dai¹, YiXuan Wang², Yi Suo³

^{1,2,3}Beijing International Studies University, Beijing, China.

³Corresponding Author : 2218559423@qq.com

Received: 04 March 2025

Revised: 06 April 2025

Accepted: 18 April 2025

Published: 30 April 2025

Abstract - Under the dual context of the rapid development of the global sports industry and the rise of domestic brands, China's sports goods industry has encountered unprecedented market opportunities. However, upgrading consumption and intensifying competition have also placed higher demands on corporate strategic resilience. Particularly after the outbreak of the COVID-19 pandemic, supply chain disruptions and demand fluctuations have further amplified corporate cash flow risks, highlighting the strategic value of cash reserves. As the leader of domestic sports brands, Anta has achieved countercyclical growth during the pandemic by holding excess cash and surpassing international brands in market share. Its case provides a typical sample for exploring the competitive effects of cash holdings. This study employs a combination of case analysis and comparative analysis, focusing on Anta's financial data and market performance and its domestic competitors (Li-Ning, Xtep, and 361 Degrees) from 2016 to 2023. By systematically organizing Anta's cash holding scale, structure, and dynamic changes through databases and company annual reports and constructing multidimensional indicators to analyze the mechanisms of its competitive effects, this research enriches the "cash is king" theory, expands the application of cash holding competitive effect theory in the sports goods industry, and fills the gap in the research of this theory in China's emerging markets. Especially in the context of the pandemic shock, it reveals the unique mechanism by which cash reserves drive market share concentration towards leading enterprises in a crisis.

Keywords - Excess cash holdings, Competitive effects, ANTA Corporation, Sports industry.

1. Introduction

The competitive effect of cash holdings refers to a firm's utilization of cash reserves to implement product market competition strategies or deter competitors, thereby securing market advantages and enhancing its product market share. Bates et al. (2009) observed that U.S. corporations significantly increased cash holdings post-1980 to mitigate escalating operational risks. Recent empirical studies corroborate the pronounced "competitive effect" of cash holdings, particularly in industries with intense competition and high financing constraints, where cash reserves substantially bolster market share (Fresard, 2010; Haushalter et al., 2007; Alimov, 2014). Following the COVID-19 outbreak in late 2019, most industries faced severe disruptions, including supply chain interruptions, demand shortages, and sales stagnation, which exerted immense pressure on corporate cash flows. However, firms with substantial cash reserves seized opportunities to capture competitors' market shares during the crisis. Anta Sports (hereafter "Anta") exemplifies this phenomenon within the highly competitive sportswear industry. Despite the pandemic, Anta's revenue rose from ¥33.9 billion to ¥35.6 billion in 2020, with a net

profit of ¥5.162 billion, ranking first among domestic brands. By 2021, Anta commanded 16.2% of China's sportswear market, surpassing Adidas China and breaking the long-standing dominance of international brands. Existing studies on cash holdings' competitive effects primarily focus on mature markets (e.g., U.S. and European firms) and rely on large-sample empirical analyses. However, there is limited research on how cash reserves drive market concentration in emerging markets, especially within industry-specific contexts (e.g., sports goods) under macroeconomic shocks. Furthermore, few studies adopt case-based approaches to uncover the operational mechanisms of cash deployment strategies. This study investigates the mechanisms underlying Anta's enhanced market competitiveness, focusing on the operationalization of cash holdings' competitive effects. Its contributions are twofold: First, while extant literature predominantly employs empirical analyses, this research adopts a case study approach to elucidate the specific mechanisms and manifestations of cash holdings' competitive effects, thereby enriching the understanding of their existence and operational pathways. Second, it bridges corporate financial decisions (cash holdings) with product market



competition, offering practical insights for firms navigating similar challenges. Unlike prior empirical studies, this research provides granular insights into how cash reserves are tactically allocated (e.g., R&D, M&A, omnichannel marketing) to achieve competitive advantages in a crisis. It also extends the 'cash is king' theory to China's emerging market context, revealing how macroeconomic shocks amplify cash's strategic value in driving market concentration.

2. Literature Review

2.1. Competitive Effects of Cash Holdings

The "competitive effect" theory, initially proposed by Tesler (1966) and refined by Benoit (1984) and Bolton & Scharfstein (1990), posits that cash reserves confer strategic advantages. Fresard (2010) empirically validated this theory, demonstrating that cash holdings positively correlate with product market performance (e.g., relative sales growth within industries). This underscores cash policy as a strategic tool for enhancing competitiveness and market value. Existing research categorizes competitive effects into direct and indirect mechanisms: Direct competitive effects involve deploying cash to expand market share through R&D, facility expansion, marketing networks, mergers and acquisitions, or predatory pricing strategies. Opler et al. (1999) linked cash holdings to growth opportunities and cash flow volatility, suggesting firms retain liquidity to mitigate external financing costs. Similarly, Schroth Szalay (2010) found that cash-rich firms excel in innovation races, while Kurt et al. (2013) noted aggressive marketing post-IPO/SEO fundraising. Conversely, cash-constrained firms face investment curtailment and market share erosion (Minton & Schrand, 1999; Campello, 2003). Indirect competitive effects arise from cash holdings' deterrent signals, suppressing competitors' R&D or market entry. Lyandres Palazzo (2016) observed reduced competitor R&D expenditures in response to rivals' cash reserves, particularly in competitive markets. Liu et al. (2013) further demonstrated that competitors' cash levels inversely affect firms' investment and market performance.

2.2. Macroeconomic Shocks and Cash Holdings

Empirical evidence highlights cash reserves' role in buffering external shocks. Harford et al. (2003) showed that cash-rich firms maintained higher investment rates during industry downturns, while Arslan et al. (2006) documented

similar resilience during Turkey's 2000-2001 financial crisis. Campello et al. (2010) and Duchin et al. (2010) revealed that cash reserves mitigated investment cuts during the 2008 financial crisis. Recent studies by Chang & Yang (2022) and Zheng (2022) further emphasized cash holdings' critical role in post-crisis recovery, particularly during COVID-19. In summary, prior research confirms cash holdings' dual competitive mechanisms and their moderating role during macroeconomic shocks. However, case-based analyses remain scarce—a gap this study addresses through Anta's strategic response to the pandemic.

3. Methods and Data

3.1. Methods

- *Case Study:* This paper analyzes Anta Sports, a Chinese sportswear company that thrived against market trends during COVID-19. We examine its operational performance, financial metrics, and brand development to elucidate how cash reserves drove competitive advantages.
- *Comparative Analysis:* Anta's performance is benchmarked against domestic peers (e.g., 361 Degrees, Xtep) and evaluated longitudinally (2016-2023) to isolate cash holdings' impact.

3.2. Data

The study draws on Anta's financial, patent, and retail data (2016-2023) from the Wind Database and annual reports, supplemented by market statistics from Euromonitor. Peer data (Li-Ning, Xtep, 361 Degrees) provide a comparative context.

4. Results

4.1. Analysis of Anta's Cash Holdings

Table 1 presents the absolute cash holdings of Anta and its peers from 2016 to 2023. Anta consistently demonstrated superior cash reserves compared to domestic competitors. Even before the pandemic, its cash holdings significantly exceeded industry averages. Post-COVID-19, Anta expanded its cash reserves, securing liquidity to sustain operations and strategic investments—a critical foundation for leveraging cash's competitive effects.

Table 1. Cash and Cash Equivalents of Anta and Peers (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	58.3	69.68	92.84	82.21	153.23	175.92	173.78	152.28
Li Ning	19.54	29.29	36.72	59.61	71.87	147.45	73.82	54.44
XTEP	28.47	38.32	31.96	29.7	34.72	39.3	34.14	32.96
361 Degrees	28.82	21.16	16.51	34.22	34.51	33.39	38.6	35.96

Table 2 compares Anta's cash-to-assets ratio with the industry average (14 listed Chinese sportswear firms). Anta's ratio ranged from 19% to 41%, consistently surpassing the

industry mean (~19%), highlighting its strategic prioritization of liquidity.

Table 2. Cash-to-Assets Ratio of Anta vs. Industry Average (2016–2023)

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	41%	37%	38%	20%	30%	28%	25%	19%
Industry Average	19%	18%	18%	17%	21%	20%	19%	19%

Table 3. Composition Structure of ANTA Monetary Funds from 2016 to 2023 (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022	2023
Three-month bank time deposits	41.58	41.51	61.25	69.51	78.75	94.44	46.13	24.27
Cash bank reserves	16.72	28.16	24.57	12.7	30.52	24.98	57.85	107.98
Other financial deposits				0.03				
Short-term investments			0.7		43.96	56.5	69.8	20.03
Total	58.3	69.67	92.83	82.21	153.23	175.92	173.78	152.28

Table 3 details Anta's cash composition. Pre-pandemic, its cash reserves primarily comprised 3-month bank deposits.

Anta diversified into short-term investments (¥5 billion) post-pandemic, balancing risk resilience with returns while maintaining conservative liquidity management. Table 4

outlines Anta's cash flow trends. Operating cash flow remained positive, indicating healthy profitability. Investment cash flow stayed negative, reflecting sustained capital expenditures. Notably, post-pandemic years (2019, 2022, 2023) saw negative net cash increases, suggesting reliance on cash reserves to fund investments.

Table 4. Anta's Cash Flow Statement, 2016–2023 (Unit: RMB 100 million)

	2016	2017	2018	2019	2020	2021	2022	2023
Operating cash flow	24.68	31.81	44.4	74.85	74.58	118.61	121.47	196.34
Investing cash flow	-5.15	-15.79	-12	-130.65	-19.23	-46.69	-47.74	-257.93
Financing cash flow	-13.98	-0.02	-11.36	46.7	12.29	-49.47	-78.41	34.71
Net cash increase	6.64	11.38	23.16	-10.63	71.02	22.69	-2.14	-21.5

4.2. Mechanisms of Anta's Cash Holdings in Exerting Market Competition Effects

4.2.1. Enhancing R&D Investment

R&D investment serves as a driving force for sustainable corporate development. It improves production efficiency and facilitates the exploration and refinement of new product markets, thereby generating substantial economic benefits.

However, R&D activities have high costs and significant risks, necessitating continuous financial support. External financing alone is often insufficient to sustain long-term R&D

initiatives, making internal financing a critical funding source. Anta's robust cash reserves have provided financial assurance for its product innovation and functional R&D. As shown in Table 5, Anta's R&D expenditure reached 870 million yuan in 2020 (post-pandemic), significantly surpassing its competitors Li Ning (320 million yuan), XTEP (220 million yuan), and 361 Degrees (200 million yuan). This indicates that Anta leveraged its strong financial position to increase R&D investment during the pandemic, laying a technological foundation for enhancing product competitiveness and expanding market share.

Table 5. Anta's R&D Investment, 2016–2023 (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	3.5	4.8	6	7.9	8.7	11.16	12.79	16.14
Li Ning	1.3	1.7	2.3	3.6	3.2	4.14	5.34	6.18
XTEP		1.4	1.7	2	2.2	2.5	3	4
361 Degrees	1.9	1.7	2.1	2.1	2	2.5	2.7	3.1

Persistent R&D investments have enabled Anta to accumulate a growing portfolio of patents. Anta holds 2,205 patents, including inventions, designs, and utility models (technical solutions). In contrast, Li Ning, XTEP, and 361 Degrees hold 291, 1,877, and 541 patents, respectively. Table 6 shows that post-pandemic patent grants have increased across all companies, with Anta and XTEP showing the most notable progress. However, Anta's focus on substantive

innovations (324 invention patents, 14% of total patents) contrasts with XTEP's emphasis on design and utility models (90 invention patents, 4% of total patents). This disparity aligns with their R&D investment gaps, highlighting Anta's strategic allocation of cash reserves toward high-value technological innovations, which have supported its market expansion.

Table 6. Anta's Patent Holdings, 2016-2023 (Unit: Count)

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	35	52	105	145	152	140	347	423
Li Ning	0	2	14	22	32	22	58	66
XTEP	16	18	61	77	164	257	383	400
361 Degrees	5	6	31	15	22	42	81	159

4.2.2. Strengthening Mergers and Acquisitions (M&A)

Long-term investments and M&A enable companies to expand operational scale, address market weaknesses, achieve synergies, and enhance market share. Ample cash reserves provide a solid foundation for such strategic moves.

Anta has progressively implemented a multi-brand strategy through sustained M&A activities. As shown in Table 7, Anta acquired the Chinese trademark rights and exclusive operations of the Italian brand FILA from Belle International in 2009. Subsequent acquisitions include Sprandi (UK, 2015),

DESCENTE (Japan, 2016), Kingkow (Hong Kong, 2017), KOLON (South Korea, 2017), and Amer Sports (Finland, 2019), which added premium brands such as Arc'teryx and Salomon to its portfolio. Anta's multi-brand strategy has enabled comprehensive market coverage, supported by cash reserves. The core Anta brand serves the mass market, while FILA and Arc'teryx target mid-to-high-end segments. DESCENTE and KOLON cater to specialized sports markets like skiing. Simultaneously, overseas acquisitions have facilitated global market penetration, driving stepwise growth in market share.

Table 7. Anta's Overseas M&A History

Year	Acquisition Target	Transaction Value
2009	Italian brand FILA (Greater China)	650 million HKD
2015	British brand Sprandi	Undisclosed
2016	Japanese brand DESCENTE	150 million RMB
2017	Hong Kong brand Kingkow	60 million HKD
2017	Korean brand KOLON Sport	Undisclosed
2019	Finnish Amer Sports	2.666 billion EUR

4.2.3. Marketing Network Development

Marketing networks encompass online (e-commerce, social media) and offline (physical stores, experience centers) channels. A robust omnichannel strategy enhances market reach, brand recognition, and influence, all of which require substantial financial backing. As shown in Table 8, Anta's offline store count far exceeds its competitors. Post-pandemic,

Anta streamlined physical outlets while intensifying investments in digital platforms, achieving a 53% year-on-year growth in e-commerce revenue in 2020. By the end of 2023, Anta's store count rebounded to 12,154, outpacing competitors by over 30%. This demonstrates Anta's financial strength and ability to leverage cash reserves for dual-channel marketing dominance.

Table 8. Anta's Store Count, 2016-2023

Number of stores	2016	2017	2018	2019	2020	2021	2022	2023
Anta	9668	10617	12188	12943	12260	11791	11939	12154
Li Ning	6440	6262	7137	7550	6933	7137	7603	7668
XTEP	6800	6000	6230	6379	6021	6151	6313	6571
361 Degrees	6357	5808	5539	5519	5165	5270	5480	5734

4.3. Performance Outcomes of Anta's Cash-Driven Market Competition

4.3.1. Market Share

Cash-rich firms are better positioned in competitive markets to capture market share through aggressive strategies. This analysis evaluates Anta's market share relative to the

broader sportswear industry and its domestic peers. First, Anta holds a significant share of China's sportswear market. As shown in Table 9, the industry grew rapidly from 2016 to 2022, with Anta's market share rising from 10.4% to 20.4%. This growth is attributed to its cash-backed advantages in R&D, M&A synergies, and marketing expansion.

Table 9. Anta's Market Share, 2016-2022 (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022
China's Sportswear Market Size	1904.3	2215.2	2690.7	3199.3	3149.9	3718	3627
Growth Rate of China's Sports Industry	14.10%	16.30%	21.50%	18.90%	-1.50%	18.00%	-2.40%
Anta	10.40%	11.00%	12.90%	15.00%	16.00%	18.50%	20.40%

Second, Anta dominates its domestic competitors. Table 10 shows Anta's sales consistently leading Li Ning, XTEP, and 361 Degrees from 2016 to 2023.

Post-pandemic, its relative market share increased further, likely due to cash-backed strategies that eroded competitors' positions.

Table 10. Anta's Sales Performance, 2016–2023 (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	133	167	241	339	355	494.35	538.47	626.61
Li Ning	80.15	88.74	105.11	138.7	144.57	258.03	258.03	275.98
XTEP	53.97	51.13	63.83	81.83	81.72	100.13	129.3	143.46
361 Degrees	50.23	51.58	51.87	56.32	51.27	59.33	69.61	84.23
Total	317.35	358.45	461.81	615.85	632.56	911.84	995.41	1130.28
Anta proportion	42%	47%	52%	55%	56%	54%	54%	55%

4.3.2. Profitability

Anta's multi-brand portfolio-ranging from its affordable core brand to premium labels like FILA-has driven revenue growth and profitability. As shown in Table 11, Anta's gross profit margin rose from 48% in 2016 to 62% in 2023. Despite pandemic disruptions, its revenue increased from 33.9 billion yuan in 2019 to 35.5 billion yuan in 2020, with gross profit

climbing from 18.7 billion yuan to 20.7 billion yuan. This underscores how cash reserves bolstered Anta's market resilience and profitability. Anta's net profit margin (Table 12) averaged 18% from 2016 to 2023, significantly higher than the industry average of 10%. This indicates that cash-driven revenue growth effectively offsets expenses, sustaining profitability.

Table 11. Anta's Revenue and Gross Profit Margin (Unit: Billion Yuan)

	2016	2017	2018	2019	2020	2021	2022	2023
Gross Margin	6.5	8.2	12.7	18.7	20.7	30.4	32.32	39.03
Operating Revenue	13.3	16.7	24.1	33.9	35.5	49.43	53.84	62.66
Gross Margin	48%	49%	53%	55%	58%	62%	60%	62%

Table 12. Anta's Net Profit Margin, 2016–2023

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	18.32%	18.92%	17.57%	16.58%	15.68%	19.88%	17.27%	22.29%
Li Ning	8.01%	5.79%	6.79%	10.80%	11.73%	17.69%	15.62%	11.51%
XTEP	10.61%	8.71%	10.47%	8.91%	6.15%	8.84%	7.02%	7.16%
361 Degrees	8.33%	8.96%	5.84%	8.31%	9.55%	12.32%	11.53%	12.21%

4.3.3. Shareholder Value

Shareholder value, measured by Return on Equity (ROE), Earnings Per Share (EPS), and Price-to-Earnings (P/E) ratio, reflects market competition effects.

As shown in Table 13, Anta's ROE averaged 26% from 2016 to 2023, outperforming peers (all below 20%). Despite the pandemic's impact, Anta maintained a significant lead.

Table 13. Anta's ROE, 2016-2023

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	26.32%	26.56%	27.83%	29.81%	23.41%	29.17%	23.97%	23.84%
Li Ning	17.93%	11.37%	13.14%	23.17%	21.49%	26.93%	17.89%	13.08%
XTEP	10.77%	8.02%	12.45%	11.91%	7.27%	11.99%	11.40%	12.04%
361 Degrees	7.61%	8.30%	5.29%	7.15%	6.42%	8.77%	9.92%	11.29%

Anta's EPS (Table 14) surged from 0.95 in 2016 to 3.69 in 2023, far exceeding competitors. Temporary declines in

2020 were swiftly reversed, demonstrating how cash-backed strategies enhanced shareholder value.

Table 14. Anta's EPS, 2016-2023

	2016	2017	2018	2019	2020	2021	2022	2023
Anta	0.95	1.17	1.53	1.99	1.92	2.87	2.82	3.69
Li Ning	0.29	0.21	0.29	0.61	0.69	1.6	1.55	1.23
XTEP	0.24	0.19	0.3	0.31	0.21	0.36	0.37	0.41
361 Degrees	0.2	0.22	0.14	0.2	0.2	0.29	0.36	0.47

5. Discussion

As a critical corporate asset, cash exhibits two defining characteristics: high liquidity and low yield. Enterprises must comprehensively evaluate the benefits and costs of cash holdings, maintaining an appropriate reserve aligned with strategic objectives and operational requirements to leverage its strategic value fully. Anta serves as a prime illustration. Pre-pandemic, Anta already maintained cash reserves that significantly exceeded industry peers in China. During the pandemic, it further enhanced its monetary capital reserves. This substantial cash position enabled Anta to withstand pandemic-induced shocks and fuel ongoing investments, securing competitive market advantages. Cash holdings per se confer no inherent benefits; their competitive effects materialize through specific operational channels that enhance corporate value. Firstly, cash reserves ensure continuity and stability in R&D investments, strengthening innovation capabilities and product market competitiveness. Secondly, they facilitate mergers and acquisitions to implement multi-brand strategies, elevating brand influence and market reputation. Thirdly, they support the development of diversified omnichannel marketing networks to expand market share. Anta exemplifies these mechanisms: It employs R&D experts from 18 countries, operates global R&D centers in Japan, South Korea, and Italy, and allocates substantial resources to optimize product technology.

Through acquisitions of international brands like FILA and Arc'teryx, Anta has executed its "Single Focus, Multi-Brand, Omni-Channel" strategy, creating a comprehensive brand matrix spanning mass to premium segments, professional to lifestyle categories, and adult to children's markets. This transformed it from a domestic player into a global sportswear leader. Moreover, Anta built an integrated marketing ecosystem, combining differentiated offline retail with consolidated e-commerce platforms, achieving superior channel coverage compared to competitors. Notably, during the pandemic, its cash reserves ensured uninterrupted R&D investments and enabled rapid scaling of digital platforms and social media infrastructure, mitigating offline channel disruptions. The competitive effects of cash holdings manifest through three market dimensions: market share expansion, profitability enhancement, and shareholder value creation. By capturing competitors' market space, cash-rich firms strengthen their competitive positions.

References

- [1] Azizjon Alimov, "Product Market Competition and the Value of Corporate Cash: Evidence from Trade Liberalization," *Journal of Corporate Finance*, vol. 25, pp. 122-139, 2014. [\[CrossRef\]](#) [\[Google Scholar\]](#) [\[Publisher Link\]](#)
- [2] Ozgur Arslan, Chrisostomos Florackis, and Aydin Ozkan, "The Role of Cash Holdings in Reducing Investment-Cash Flow Sensitivity: Evidence from a Financial Crisis Period in an Emerging Market," *Emerging Markets Review*, vol. 7, no. 4, pp. 320-338, 2006. [\[CrossRef\]](#) [\[Google Scholar\]](#) [\[Publisher Link\]](#)
- [3] Thomas W. Bates, Kathleen M. Kahle, and Rene M. Stulz, "Why Do U.S. Firms Hold So Much More Cash than They Used to?," *Journal of Finance*, vol. 64, no. 5, pp. 1985-2021, 2009. [\[CrossRef\]](#) [\[Google Scholar\]](#) [\[Publisher Link\]](#)

Anta's 2021 market share surpassed Adidas China for the first time, breaking foreign brands' dominance. Its profitability metrics, including gross and net profit margins, outperformed domestic peers and even improved post-pandemic, demonstrating cash holdings' catalytic role. Shareholder equity indicators also lead industry counterparts, evidencing sustained value creation from Anta's cash deployment strategies.

6. Conclusion

This study conducts a comparative analysis of cash holdings' competitive effects in China's sportswear industry, using Anta as the primary case and Li-Ning, Xtep, and 361° as benchmarks. Analyzing 2016-2023 data, findings reveal Anta's strategic advantages from cash reserves: Through sustained R&D investments, brand acquisitions, and omnichannel development, it achieved countercyclical growth in market share, profitability, and shareholder value during the pandemic.

This case-based approach empirically validates the existence and mechanisms of cash holdings' competitive effects, enriching the theoretical foundation, intrinsic logic, and external manifestations of the "cash is king" doctrine. Theoretically, this research expands the application scenarios of cash holdings' competitive effect theory. It uncovers unique mechanisms of cash reserves in China's sportswear sector, addressing gaps in emerging market studies. The pandemic context reveals how cash holdings amplify market concentration towards industry leaders during crises. This study offers actionable insights for corporate treasury management, investment decisions, and policymaking. Enterprises should establish cash safety margins to balance liquidity and yield, optimizing crisis preparedness. Investors can refine valuation models by assessing the quantity and deployment quality of cash reserves. Policymakers should incorporate corporate liquidity positions and crisis resilience into monetary and industrial policy frameworks to foster sustainable development in product and capital markets.

Funding Statement

This paper is one of the final results of the Beijing Social Science Foundation Planning Project "Research on Corporate Cash Holdings under the Impact of the Epidemic" (20GLB015).

- [4] Jean-Pierre Benoit, "Financially Constrained Entry in a Game with Incomplete Information," *Rand Journal of Economics*, vol. 15, no. 4, pp. 490-499, 1984. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [5] Patrick Bolton, and David S. Scharfstein, "A Theory of Predation Based on Agency Problems in Financial Contracting," *American Economic Review*, vol. 80, no. 1, pp. 93-106, 1990. [[Google Scholar](#)] [[Publisher Link](#)]
- [6] Murillo Campello, "Capital Structure and Product Markets Interactions: Evidence from Business Cycles," *Journal of Financial Economics*, vol. 68, no. 3, pp. 353-378, 2003. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [7] Murillo Campello, John R. Graham, and Campbell R. Harvey, "The Real Effects of Financial Constraints: Evidence from a Financial Crisis," *Journal of Financial Economics*, vol. 97, no. 3, pp. 470-487, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [8] Chong-Chuo Chang, and Han Yang, "The Role of Cash Holdings During Financial Crises," *Pacific-Basin Finance Journal*, vol. 72, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [9] Ran Duchin, Oguzhan Ozbas, and Berk A. Sensoy, "Costly External Finance, Corporate Investment, and the Subprime Mortgage Credit Crisis," *Journal of Finance*, vol. 97, no. 3, pp. 418-435, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [10] Laurent Fresard, "Financial Strength and Product Market Behaviors: The Real Effects of Corporate Cash Holdings," *Journal of Finance*, vol. 65, no. 3, pp. 1097-1122, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [11] David Haushalter, Sandy Klasa, and Williams F. Maxwell, "The Influence of Product Market Dynamics on a Firm's Cash Holdings and Hedging Behavior," *Journal of Financial Economics*, vol. 84, no. 3, pp. 797-825, 2007. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [12] Jarrad Harford, Wayne Mikkelson, and M. Megan Partch, "The Effect of Cash Reserves on Corporate Investment and Performance in Industry Downturns," Working Paper, pp. 1-28, 2003. [[Google Scholar](#)] [[Publisher Link](#)]
- [13] Didem Kurt, and John Hull, "Aggressive Marketing Strategy Following Equity Offerings and Firm Value: The Role of Relative Strategic Flexibility," *Journal of Marketing*, vol. 77, no. 5, pp. 57-74, 2013. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [14] Evgeny Lyandres, and Berardino Palazzo, "Cash Holdings, Competition, and Innovation," *Journal of Financial and Quantitative Analysis*, vol. 51, no. 6, pp. 1823-1861, 2016. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [15] Bernadette A. Minton, and Catherine Schrand, "The Impact of Cash Flow Volatility on Discretionary Investment and the Costs of Debt and Equity Financing," *Journal of Financial Economics*, vol. 54, no. 3, pp. 423-460, 1999. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [16] Tim Opler et al., "The Determinants and Implications of Corporate Cash Holdings," *Journal of Financial Economics*, vol. 52, no. 1, pp. 3-46, 1999. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [17] Tim C. Opler, and Sheridan Titman, "Financial Distress and Corporate Performance," *Journal of Finance*, vol. 49, no. 3, pp. 1015-1040, 1994. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [18] Enrique Schroth, and Dezso Szalay, "Cash Breeds Success: The Role of Financing Constraints in Patent Races," *Review of Finance*, vol. 14, no. 1, pp. 73-118, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [19] L.G. Telser, "Cutthroat Competition and the Long Purse," *Journal of Law and Economics*, vol. 9, 1966. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [20] Michael Zheng, "Is Cash the Panacea of the COVID-19 Pandemic: Evidence from Corporate Performance," *Finance Research Letters*, vol. 45, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]