

The Impact of Macroeconomic Indicators and Economic Fluctuations on Private Equity Investment

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Abstract. As a crucial component of capital markets, private equity investment is significantly influenced by macroeconomic indicators and demonstrates unique performance during economic fluctuations. The field extensively studies how macroeconomic factors such as inflation rates, interest rates, and exchange rates affect private equity investment strategies, returns, and risk management, as well as how private equity investors rapidly adjust their strategies to address market uncertainties triggered by economic crises and global public health events. Current research hotspots include the integration of ESG investment principles, the impact of macroeconomic fluctuations on private equity investment, the influence of financial regulatory system reforms on the industry, the role of local governments in regional innovation systems, empirical research on macroeconomic factors, predictions of structural market changes, changes in investor composition, optimization of exit strategies, and analysis of fundraising and investment scale stability. These research directions not only cover multiple aspects of private equity investment but also reflect how the private equity industry adapts to and captures new investment opportunities in an ever-changing macroeconomic environment. Future research could explore private equity investment performance in emerging markets, industry characteristics under macroeconomic fluctuations, and how to enhance risk resistance through innovative investment strategies. These directions will become the focus of future research, providing more forward-looking guidance for industry development.

Keywords: private equity investment, Financial regulatory system reform

1. Introduction

In recent years, private equity investment, as an important financing channel and capital operation model, has developed rapidly and gradually become a crucial component of global capital markets. Unlike traditional public market investments, private equity investment has attracted an increasing number of investors and institutions due to its flexibility and high returns. The rapid development of private equity investment has not only promoted innovation and enterprise expansion but also played an important role in promoting economic growth and social employment. With the acceleration of globalization, the influence of private equity investment has expanded, and its complex relationship with macroeconomic indicators and the impact of economic fluctuations have become important research directions in academic and practical fields. As key variables reflecting national economic conditions, macroeconomic indicators influence capital market trends and investor decision-making behavior. Li and Zhang (2018) pointed out through empirical analysis that macroeconomic indicators such as GDP growth rate and inflation rate directly affect private equity investment returns and risk levels. Zhang (2018) further explored the relationship between economic growth rate increases and investment return rates and indicated the potential impact of inflation on corporate profit rates and market valuations. Additionally, Tian (2022) analyzed the impact of private equity investment on enterprise performance from an empirical perspective, revealing the application of macroeconomic variables in private equity investment strategies.

Meanwhile, economic fluctuations, particularly global economic crises such as the 2008 financial crisis and the 2019 pandemic, have had profound impacts on private equity investment. Research by Dezsó et al. (2015) showed that during the global financial crisis, private equity fund returns declined significantly, with leveraged buyout funds being the most severely impacted. However, Kaplan and Strömberg (2009) found that private equity funds achieved substantial returns through low-valuation acquisitions and corporate restructuring during economic recovery periods, demonstrating their

unique advantages in countercyclical situations. Gompers et al. (2016) noted that during major economic fluctuations, private equity funds effectively responded to uncertainty shocks through measures such as adjusting fund allocation, reducing leverage ratios, and optimizing liquidity management.

Currently, the impact of macroeconomic variables and economic fluctuations on private equity investment has become a popular research field. Studies not only focus on private equity performance under economic growth, inflation, and interest rate adjustments but also explore how private equity funds adjust strategies during economic crises and major fluctuations to maintain competitiveness. Against the backdrop of increased global financial market volatility and frequent monetary policy adjustments across countries, understanding the relationship between private equity investment and macroeconomic variables and economic fluctuations can provide more forward-looking investment advice for investors and theoretical support for strategy optimization and risk management.

The purpose of this literature review is to systematically examine existing research on how macroeconomic variables and economic fluctuations affect private equity investment performance, identifying significant findings and current research gaps. Through analyzing research methods and results from various literature sources, this paper aims to provide more constructive advice for private equity investors, helping them optimize investment decisions in a complex and changing economic environment. Additionally, this review also points out future research directions, particularly providing theoretical support and empirical evidence for investment strategy adjustments and risk management in different economic cycles.

2. Macroeconomic Factors and Private Equity

2.1. GDP and private equity returns

In research exploring the relationship between macroeconomic indicators and private equity investment returns, researchers have employed various methods. Time series analysis has been widely used to study the dynamic changes of macroeconomic variables and their immediate effects on investment returns. This method can capture trends in economic variables over time and their immediate effects on investment returns (Zhang, 2018). Panel data analysis is particularly suitable for analyzing data across time and entities (such as enterprises or funds). It not only controls for heterogeneity but also better reveals the long-term impact of macroeconomic variables on private equity investment returns. Researchers commonly use fixed-effects models to control for unobservable individual differences, thereby more accurately assessing the impact of macroeconomic indicators. Additionally, regression analysis is widely applied to quantify GDP growth's contribution to private equity investment returns. Through regression analysis, the positive or negative correlation between GDP as an independent variable and private equity investment returns can be revealed, especially under different market conditions (Li and Zhang, 2018).

Existing research has revealed the significant influence of different macroeconomic variables on private equity investment returns. As shown in Table 1, there exists a positive relationship between GDP growth and private equity investment returns. The regression results indicate that the transparency level has a significant positive impact on private equity return rates (Sig. = 0.001), suggesting that higher market transparency helps reduce investment risk and enhance investor confidence, thereby improving private equity returns. Moreover, the negative impact of the legal system (Sig. = 0.000) reflects that a complex or strict legal environment may hinder the liquidity and flexibility of private equity investment, suppressing its development in the economy. Regional differences also significantly affect private equity returns, with North America Oceania, and Asia showing significant positive effects (Sig. = 0.019 and 0.020 respectively), indicating that these regions' stable economic environments and higher transparency provide favorable conditions for private equity investment development. In contrast, the effects in South America and Africa are not significant, possibly due to higher economic uncertainty and institutional risks in these regions, which suppress private equity return potential.

Table 1. Results of regression analysis (Aarekol, 2016).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(constant)	.049	.227		.217	.829
Growth prospects	-.035	.023	-.199	-1.497	.143
Transparency level	.008	.002	.505	3.493	.001
Legal system	-.384	.090	-.500	-4.261	.000
Corporate Tax	.389	.567	.079	.687	.496
North America & Oceania	.428	.175	.275	2.450	.019
Asia	.240	.099	.300	2.424	.020
South America	.122	.121	.129	1.004	.322
Africa	.169	.128	.220	1.321	.194

Dependent Variable: PE value/GDP

According to Aarekol (2016), enterprise characteristics are also important factors affecting investment returns. Enterprise size, solvency, and liquidity are considered crucial internal factors influencing investment returns. Larger enterprises typically demonstrate greater resilience in responding to macroeconomic fluctuations and can provide relatively stable returns. Enterprises with poor liquidity show greater volatility in investment returns during periods of economic uncertainty. The literature also points out that private investment has the greatest driving effect on GDP growth. For private equity investment, particularly in forms such as venture capital and mergers and acquisitions, higher returns can be achieved in a GDP growth environment.

Lavee et al. (2011) pointed out that sustained GDP growth is often accompanied by strengthened corporate profitability and expanded market demand, which increases the returns on private equity investments. GDP growth provides a more stable environment for economic activities, reduces investment risks, and enhances the potential for investment returns. Ahmad et al. (2020) further found that long-term sustained GDP growth can provide a more stable return environment for investments. Similar to private equity investments, long-term investments often generate more considerable returns in a continuously growing economic environment, while short-term fluctuations may have a smaller impact on investments. This finding highlights the significant influence of macroeconomic stability on private equity investment returns.

Current research has explored the impact of GDP growth on private equity investment returns across different regions, particularly under the interaction of macroeconomic factors such as transparency and legal environment, with developed markets like North America, Europe, and some Asian economies showing a strong positive correlation between economic growth and investment returns. However, significant economic disparities exist between countries and regions within the same area, and the impact of these disparities on private equity investment returns has not been thoroughly studied. For instance, developed economies and emerging markets within Asia show significant differences in economic policies, legal frameworks, and market maturity, which may lead to significant fluctuations in private equity investment returns. In future research, it is necessary to deeply examine the impact of different economic levels within regions on private equity investment to fully reveal the multi-level influence of macroeconomic variables on private equity returns.

As mentioned above, while research on the impact of macroeconomic indicators on private equity investment returns has made some progress, further exploration is still needed in areas such as long-term impacts, emerging market data, and industry differences. Future research can improve existing theoretical frameworks and provide stronger practical support by expanding data samples, strengthening analysis of long-term economic cycles, and deeply exploring industry differences.

These efforts will help us better understand the complex relationship between macroeconomic variables and private equity investment returns, providing more reliable guidance for investment decisions and policy-making.

2.2. Other macroeconomic indicators and private equity performance

There is a complex and close link between fluctuations in macroeconomic variables, such as inflation, interest rates and exchange rates, and the performance of private equity investments. These economic indicators directly influence the return performance of private equity investments by affecting corporate financing costs, capital market liquidity and exit strategies. In recent years, scholars have used a variety of research methods to delve into the different impacts of these economic indicators on private equity investments and have come up with a number of important conclusions.

In studying the impact of inflation, interest rate and exchange rate fluctuations on private equity investments, researchers have used a variety of quantitative and qualitative analytical tools. First, macroeconomic models are widely used to assess the long-term impact of these variables. For example, Wellington's (2023) study simulates the impact of inflation and interest rate changes on different types of private equity funds (e.g., growth funds and mergers and acquisitions funds) through macroeconomic modeling, focusing on the changes in the cost of financing and investment returns of these funds in a high interest rate environment. Second, regression analysis is a common quantitative approach to quantify the direct impact of interest rates and inflation on private equity investment returns through modeling. Marcum (2022) analyzes the changes in valuation and exit strategies of private equity funds during periods of high inflation through regression modeling, revealing how rising inflation compresses investment returns. In addition, the event study approach is widely used in analyzing the impact of economic shocks on private equity investment performance during specific periods. For example, CEPR (2022) analyzes market changes when interest rates rebound from the zero lower bound through the event study approach, revealing how a prolonged low interest rate environment drives private equity fundraising and expansion.

Existing studies reveal significant effects of inflation, interest rates, and exchange rates on private equity performance. First, Wellington's (2023) study notes that rising interest rates have the most significant impact on M&A funds that rely on high leverage. The cost of financing these funds increases significantly, leading to lower investment returns, especially at the time of exit, when rising interest rates compress expected returns. In addition, private equity funds maintain their returns during periods of high inflation by adjusting their investment strategies to reduce leverage dependence and shift towards improving operational efficiency within their firms. Marcum (2022) supports this view, noting that during periods of high inflation, private equity investors are more inclined to increase firm value through strategic restructuring and operational optimization, rather than relying on financial leverage. CEPR (2022) further points out that the private equity industry has received significant capital inflows and expansion opportunities during the prolonged low interest rate environment, however, as interest rates rebound, fundraising and investment activities will be more challenging. The study also highlights the uneven impact of changes in the interest rate environment on funds of different sizes, with smaller funds finding it more difficult to survive in a higher interest rate environment.

Table 2. Regression result analysis (Li and Zhang, 2018).

	Model (1)	Model (2)	Model (3)
Variable	Inpe	Inpe	Inpe
IngdP	1.727 (-1.41)	2.675** (-2.294)	2.632** (-2.457)
cpi	0.032 (-0.609)	0.096** (-2.311)	0.094*** (-2.292)
r	0.276* (-1.859)		
Iner	13.315*** (-3.072)	17.028*** (-4.232)	17.231*** (-2.292)
Inm2	1.009 (-0.744)	-0.132 (-0.104)	
cons	-60.017*** (-2.99)	-69.817*** (-3.446)	-71.141*** (-4.586)
R ²	0.727	0.689	0.689
Adjusted R ²	0.672	0.641	0.654
F	13.285	14.384	19.904

Table 2 explains the impact that other macroeconomic indicators have shown on private equity investment. Specifically, inflation (CPI) and exchange rate (ER) show a significant positive relationship, indicating that a moderate increase in inflation and changes in exchange rates can drive the growth of private equity investment. The CPI in Table 2 is significant at the 1% level with a coefficient of 0.094, suggesting that private equity investment performance improves when the consumer price index (CPI) rises, possibly because moderate inflation encourages firms and consumers to increase their spending, which in turn stimulates investment demand. In addition, the exchange rate (ER) is significant at the 1% level with a coefficient of 17.231, reflecting that the depreciation of the RMB increases the profitability of exporting firms, which in turn drives the demand for private investment.

On the other hand, the interest rate (r) is significant at the 5% level, but the coefficient is small, indicating that the fluctuation of interest rate has some impact on private equity investment, but its influence is not as significant as that of CPI and ER. Higher interest rates increase the cost of financing, but at the same time may enhance the expected return on investment and attract prudent investors to the market.

Although existing studies reveal the significant impact of inflation rate, interest rate and exchange rate fluctuations on private equity investment, there are still some limitations. First, while most studies reveal the impact of these macroeconomic indicators on the overall private equity industry, there is still a lack of exploration of the differences between different investment strategies. For example, the possibility that growth investments, venture capital investments, and M&A funds may behave differently in the face of macroeconomic volatility has not been fully discussed in the existing literature.

Second, many studies focus on data from developed markets and lack in-depth analysis of emerging markets. Private equity investments in emerging markets may be more sensitive to exchange rate fluctuations and the path of macroeconomic variables affecting these markets is different from that of developed markets; future research needs to further cover these regions. Finally, the existing literature is limited in exploring micro-mechanisms, particularly how inflation and interest rate changes affect private investment returns through firms' internal operations and management decisions. This type of mechanistic research can help us understand more deeply the impact of macroeconomic variables on firm-level specific performance.

As mentioned above, macroeconomic indicators such as inflation, interest rates, and exchange rates play a key role in influencing the financing costs, operating strategies, and return performance of private equity investments. Future research can further explore the differences between different investment strategies and regional markets, as well as dig deeper into the micro impact of these economic indicators on firms' internal decision-making and operations, to provide a richer basis for the theoretical research and practical application of private equity investment.

3. Macroeconomic Fluctuations and Private Equity Investment Strategies

The impact of macroeconomic volatility on private equity investment strategies has been an important research topic in finance and economics. With fluctuations in economic cycles, especially major events such as the 2008 financial crisis and the 2019 New Crown epidemic, the risks and uncertainties faced by private investors have increased significantly. How investors can respond to these macroeconomic challenges by flexibly adjusting their strategies has become a long-standing academic concern.

Existing studies have adopted various methods such as case study method, event study method and systematic literature review method to reveal the impact of economic fluctuations on private equity investment strategies. Berman (2020) focuses on market performance during the 2008 global financial crisis and the 2020 New Crown Epidemic by using the case study method and the historical analysis method, combining historical data to examine how private equity funds responded in terms of capital recovery, acquisition opportunities, and strategic adjustments. Similarly, Bernstein et al. (2019) employ an event study approach and empirical analysis using a wide range of datasets to investigate the impact of macroeconomic shocks on firms' capital structure, solvency and survival by analyzing the financial data of private equity-backed firms during the financial crisis. In addition, Rawal and Kapil (2023) sifted through the extensive literature on private equity through a systematic literature review approach, using content analysis and meta-analysis to summarize the determinants of choice and the paths of value creation in private equity investments. The combination of these approaches contributes to a comprehensive understanding of how macroeconomic volatility affects private equity investment strategies and provides empirical evidence on the performance of different strategies.

Most studies show that economic volatility has a significant impact on private equity investment strategies, especially during recessions, and that private equity funds exhibit greater resilience to risk. Berman's (2020) study finds that during the 2008 financial crisis and the 2020 epidemic, private equity realized long-term value appreciation through undervalued acquisitions and capital recycling and outperformed public market investments. Bernstein et al. (2019) further noted that private equity provided necessary capital support to firms during the crisis and enhanced firm survival. However, Davis et al. (2014) stated the highly leveraged nature of private equity also increases firms' financial risk during crises. Contrary to these studies, a study by Dezso et al. (2015) shows that economic volatility usually leads to lower returns on private equity investments. By analyzing data during the 2008 financial crisis, the study found that the overall performance of private equity declined significantly during the crisis, with leveraged-dependent M&A funds in particular being hit the hardest (Figure 1).

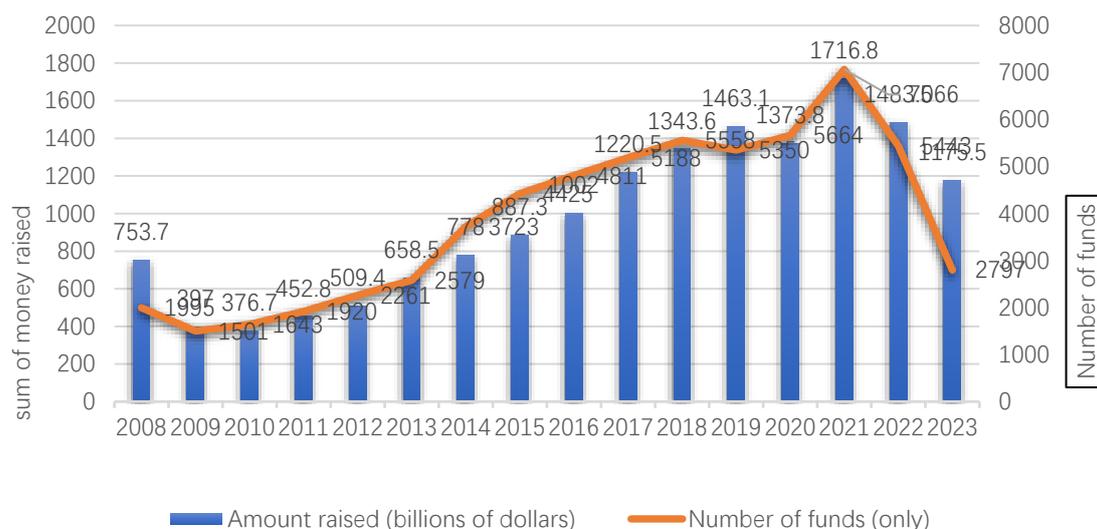


Figure 1. Global Private Equity Market Fundraising Scale (2008-2023) (Liu, 2024).

[Alt] This bar and line chart illustrates the fundraising amount (in billions of dollars) and the number of funds raised globally in the private equity market from 2008 to 2023. It shows fluctuations and peaks, particularly notable in 2021.

This difference is mainly reflected in the understanding of private equity's resilience in a crisis. Research by Berman (2020) and Bernstein et al. (2019) argues that private equity can grow in value during a crisis by adapting its investment strategy, such as acquisitions at low valuations and maintaining a flexible capital allocation. However, Dezso et al. (2015) argue that while private equity funds can cope with some of the market volatility through strategic adjustments, the deterioration of the overall market environment, the decline in corporate valuations, and the weakening of capital liquidity during the crisis led to a decline in overall returns. These differences may stem from differences in fund types, strategy choices, and the industries in which they operate. Berman (2020) focuses more on the long-term value-added potential of funds, while Dezso et al. emphasize the direct impact of short-term market volatility on private equity investments.

Although the studies reveal the important impact of macroeconomic volatility on private equity investment strategies, there are still some limitations. First, most of the existing studies focus on the performance of the overall private equity market and lack an in-depth analysis of the differences in the performance of different types of private equity strategies (e.g., mergers and acquisitions, venture capital, and growth investments) in response to economic volatility. Second, studies have focused mainly on developed markets, ignoring differences across regions (e.g., emerging markets) and industries, leading to limited applicability of conclusions. In addition, the study by Bernstein et al. (2019) focuses on short-term impacts and pays less attention to the impact of private equity on the long-term financial health of firms. Finally, while Rawal and Kapil's (2023) literature review provides a rich theoretical framework, the reliance on the results of the existing literature and the lack of empirical data support on the latest market trends limit the ability to predict future market performance.

While the study provides many valuable insights in shedding light on private equity's response to macroeconomic volatility, future research should further explore the differential performance of different private equity strategies and consider the specificities of different regions and industries across the globe in order to gain a more comprehensive understanding of the dynamic impact of macroeconomic volatility on private equity strategies.

4. Conclusion

A review of the literature on the impact of macroeconomic indicators and economic volatility on private equity investments can be summarized by showing that private equity investments are not

only significantly affected by macroeconomic variables (e.g., GDP growth rates, inflation rates, interest rates, etc.), but also exhibit greater uncertainty during major economic fluctuations (e.g., the global financial crisis and the New Crown Epidemic). Research has shown that private equity funds exhibit higher investment returns during periods of economic growth, while during recessions or crises, their performance is challenged by a number of factors, such as rising financing costs and declining valuations. However, private equity investors have been able to generate significant post-crisis returns through counter-cyclical strategies (e.g., low-valuation acquisitions, reduced leverage, etc.). Overall, private equity has shown strong resilience and has been able to cope with market volatility through flexible strategic adjustments.

While the study reveals the impact of macroeconomic fluctuations on private equity investments, future research needs to explore two aspects in greater depth. First, how different types of private equity investment strategies (e.g., mergers and acquisitions, venture capital, growth equity, etc.) behave in the face of different macroeconomic environments has not yet been adequately studied. Second, most of the current research is based on data from developed markets. Private equity investments in emerging markets may exhibit unique response patterns due to the different market environments and economic policies they face, which need to be further explored. In addition, with the maturity of the private equity industry and the integration of global capital markets, the impact of ESG factors on private equity investments may become an important topic in the future, which also needs to be supported by more theoretical and empirical research.

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