

# ***The Impact of FTX's Bankruptcy on US Pension and Implications for Hong Kong Pension***

Tianwen Xu<sup>1,a,\*</sup>, Hongtaijia Hou<sup>2,b</sup>, Yucheng Huang<sup>3,c</sup>

<sup>1</sup>*Xincheng Holding Group, Shanghai, China*

<sup>2</sup>*Master of Business Administration, City University of Macau, Macau, China*

<sup>3</sup>*Deloitte Consulting, Guangzhou, China*

*a. xutianwenus@126.com, b. hhtj\_1105385153@163.com, c. bridgethuang77@outlook.com*

*\*corresponding author*

**Abstract:** This study aims to explore the impact of FTX, a once-prominent cryptocurrency platform that boasted over 1 million active users globally and held the third-largest market share in trading volume, on the stability of the entire United States. FTX's subsequent bankruptcy has reverberated through various assets, including major cryptocurrencies like Bitcoin and Ethereum, directly influencing the expansive pension industry within the United States. Considering this, our research endeavors to conduct a comprehensive examination of how FTX's insolvency has affected price dynamics within the primary investment sectors of U.S. pension funds. Additionally, we seek to investigate the repercussions on investment strategies and the diversified approaches adopted by these funds. Through this analysis, we aim to provide both theoretical frameworks and practical insights to support the evolution of the pension industry, not only in the United States but also for the broader global financial landscape.

**Keywords:** Event research, FTX bankruptcy, pension investment, cryptocurrency

## **1. Introduction**

### **1.1. The Social Impact of the Pension Industry**

Against the backdrop of continuous global population growth, expanding labor markets, and intensifying aging trends, the pension fund industry has undergone significant changes over the past few decades. As a crucial component of social security systems, pension funds aim to provide economic security for the elderly, ensuring their quality of life. With the development of the global economy and increasing complexity of financial markets, the impact of pension fund fluctuations on the stock market has become more apparent. Studies indicate a bi-directional causal relationship between pension funds and stock market development.

In Asian equity markets, pension funds have had a positive impact on market capitalization and value stock trading. Investing pension funds in the stock market helps stabilize the market, enhance market efficiency, and provides investors with more investment options. Furthermore, the growth of pension fund markets also influences the scale and liquidity of financial markets. The expansion of pension fund markets contributes to the prosperity of financial markets to some extent, supporting economic development.

However, fluctuations in the pension fund market have also attracted widespread attention. The impact of pension fund fluctuations on the stock market manifests in two aspects: on the one hand, the expansion of pension fund size provides a stable source of funds for the stock market, aiding in market upturns; on the other hand, fluctuations in the pension fund market may lead to stock market declines, negatively affecting investor confidence. Therefore, effectively managing pension fund fluctuations and minimizing their adverse impact on the stock market have become a focal point for governments and regulatory bodies in the development of the pension fund market.

### **1.2. The Impact of the Collapse of a Cryptocurrency Platform on the U.S. Economy**

The substantial user base of the FTX platform makes it crucial in the cryptocurrency markets, both in the United States and globally [1]. The platform's extensive trading activities not only provide ample liquidity to the cryptocurrency market but also establish the FTX platform as a significant trading venue for many investors. Consequently, the volatility of the FTX platform can have profound effects on the entire cryptocurrency market.

Secondly, the cryptocurrency market already exhibits high volatility, and a collapse of the FTX platform could trigger market panic, further exacerbating overall market instability. This panic might swiftly spread to other markets, potentially affecting traditional financial markets and posing a threat to the stability of the entire United States financial market.

Additionally, a collapse of the FTX platform could result in losses for investors. Many investors consider cryptocurrencies as part of their asset allocation, especially given the sustained growth in the cryptocurrency market in recent years. Issues with the FTX platform may undermine investor confidence in the cryptocurrency market, potentially leading to the depreciation of investors' assets.

### **1.3. Impact of cryptocurrency volatility on U.S. pensions**

Despite the rise of new forms of investment in recent years, especially in the cryptocurrency market, which has attracted a large influx of money, the negative impact on pensions in this FTX bankruptcy fiasco is still very limited. This is due to the pension system's thoughtfulness and long-term planning in its investment strategy. The fundamental goal of pensions as a long-term investment is to secure a stable source of income for retirement. In order to achieve this goal, pension systems need to find a balance between risk and return that ensures steady growth in a variety of market environments.

The reason why pensions were less impacted in the FTX bankruptcy is that the pension management system has adopted a diversified allocation in its investment strategy. This strategy is designed to reduce investment risk and increase the portfolio's resistance to volatility. In practice, pension managers have significantly increased the proportion of investments in alternative assets, such as real estate, private equity, bonds, etc., to make the investment portfolio richer and more diverse. This diversified investment strategy has largely reduced the negative impact of single investment varieties such as the FTX bankruptcy. Second, the pension system always pays attention to risk management in the investment process. Pension managers ensure that the risks in the investment process are controllable by setting up strict risk control mechanisms. In addition, the supervision of the pension system also plays a key role, which enables pensions to follow the norms in the investment process, avoid over-concentration in a certain area, and ensure the stability and safety of the investment portfolio.

## **2. Literature Review**

### **2.1. The impact of pensions on the stock market**

The role of pensions in the stock market has received much attention, and empirical studies have shown that pension investment in equities has contributed to the maturation and expansion of the stock market. By analyzing data from 29 OECD countries, the study finds that there is a significant bidirectional causality between pension funds' equity investments and stock market development, and that this interaction not only increases market liquidity, but also positively affects market size and trading activity. In particular, in some economies, equity investments by pension funds have significantly strengthened stock market development. However, in developing economies, while the growth of pension fund assets has not significantly enhanced market turnover, it has had this effect in more developed economies. Overall, the positive contribution of pension funds to stock market development, as an important component of social security, has been emphasized by both academics and practitioners [2].

### **2.2. Changes in the traditional pension system**

As globalization advances and the concept of sustainable development takes hold, traditional funds increasingly consider environmental, social and corporate governance (ESG) criteria. Globally, investors, policy makers and regulators are actively promoting ESG investments for sustainable development and green economy. Second, investors are increasingly concerned about corporate environmental and social responsibility and expect funds to assess these factors holistically for long-term value investing. Third, traditional funds seek to restore trust in their impaired legitimacy and contain the effects of the crisis. Against the backdrop of frequent financial risks and scandals in recent years, traditional funds are in dire need of improved governance structures and transparency to rebuild investor confidence. Incorporating ESG factors into investment decisions can help fund companies achieve more responsible investment and reduce potential risks.

However, incorporating ESG factors into investment decisions also faces certain challenges. First, the ESG assessment system is not yet perfect and lacks unified standards and indicators. Different fund companies place different emphasis on ESG factors and have different assessment methods, which may lead to differences in investment decisions. Second, ESG investments may increase portfolio volatility, especially in the short term. In the long term, ESG investments can reduce investment risk, but may face higher volatility in returns in the short term. Finally, ESG investment requires fund companies to have appropriate professional capabilities and resources. When carrying out ESG investment, fund companies need to continuously improve their professionalism in the field of environmental, social and corporate governance in order to achieve good investment performance [3].

### **2.3. Impact of pension funds on the financial system**

Pension funds, as long-term institutional investors, have had a significant impact on the financial system in the context of globalization and liberalization. The development of financial markets, in particular capital markets, has not only contributed to economic growth, but has also brought pension funds into focus. Pension funds, managed by professional managers, have increased the liquidity and development of capital markets by pooling large amounts of capital to invest in financial markets. Their long-term investment strategy gives them an advantage over individual investors in stock and bond investments, which has resulted in a significant presence in global financial markets and a positive effect on economic growth. Pension funds are therefore important for financial markets and economic development [4].

## 2.4. The role of pensions in social welfare and economic stability

As an important part of social welfare, pensions play a key role in maintaining stock market and financial stability and improving people's livelihood. Due to the long-term capital attributes of pensions, their investment decisions are often focused on long-term returns, and this prudent investment behavior helps to calm stock market volatility and promote the long-term stability of the financial market. At the same time, the effective management and utilization of pension funds is directly related to the quality of retirement life of the general public, and has become an important indicator of the maturity of a country's social security system. Therefore, ensuring the continued healthy operation of pension funds is not only crucial to safeguarding the well-being of the elderly, but also has a far-reaching impact on the smooth operation and sustainable development of the entire economic system.

## 3. The U.S. Pension Investment System—Take the California Public Employees' Retirement Fund as an example

The California Public Employees' Retirement System (CalPERS) is the largest pension plan in the United States. According to CalPERS' annual report for the year 2023, approximately 67% of its investment portfolio is allocated to domestic and international stocks, while 25% is allocated to fixed-income assets, primarily government bonds and corporate bonds [5].

Table 1: CalPERS Fund Investment Structure

California investments	Fair value (\$)	Percentage
Public Equity	17,992,290	36.80%
Global Fixed Income	6,282,531	12.85%
Real Assets	20,028,226	40.97%
Private Equity	3,057,540	6.25%
Private Debts	1,527,504	3.12%
TOTAL CALIFORNIA INESTMENTS	48,888,091	100.00%

Source: CalPERS

Table 1 presents the investment structure of the California Public Employees' Retirement Fund. Public equities and real estate account for the first and second largest shares of investment, respectively. In the following sections, we will further analyze the impact of FTX bankruptcy on these investment domains.

### 3.1. Impact of FTX Collapse on Pension Fund Investments

To investigate the impact of the FTX collapse on pension funds, we collected daily closing prices of mainstream cryptocurrencies in the United States (Bitcoin, Ethereum, and Bitcoin), cryptocurrency markets, stock markets (S&P 500), fiat currencies, US dollar index, Euro/US Dollar, JPY/US Dollar, Renminbi/US Dollar), precious metals, and energy. The event date was November 7, 2022, when the value of FTX exchange token FTT dropped by 80% as its competitor BancBank announced the sale of its FTT holdings [6]. The collapse of FTX occurred five days later, on November 12, 2022.

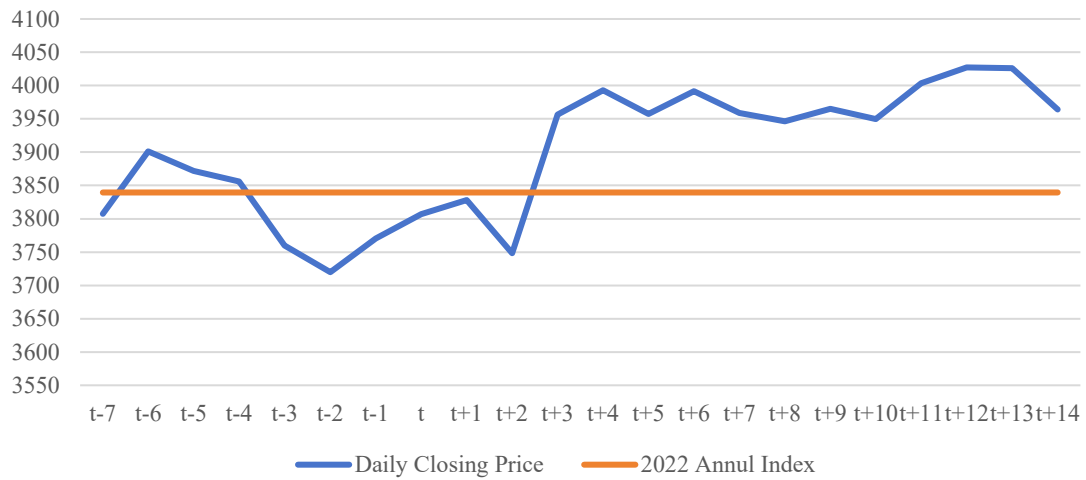


Figure 1: S&P 500 Daily Closing Price  
Source: Daily Closing Price (Nasdaq), Annul Index (Statista)

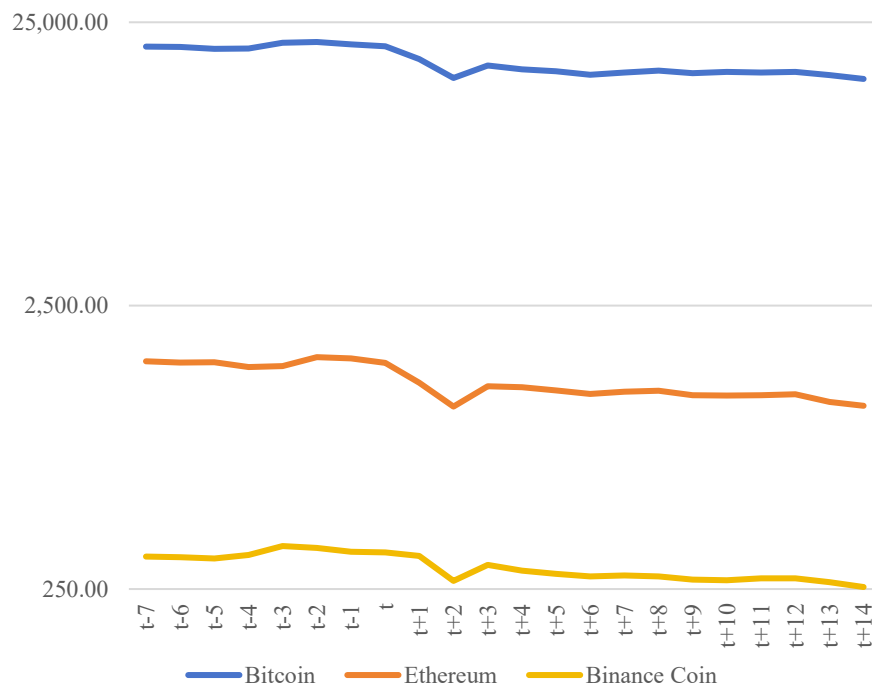


Figure 2: Daily Closing Price of Main Cryptocurrencies  
Source: investing.com

Table 2: Exchange Rate of Fiat Currencies

Days	DXY	EUR/USD	GBP/USD	JPY/USD	CNY/USD
t-7	111.420	0.9883	1.1469	0.0068	0.1379
t-6	111.359	0.9874	1.1483	0.0067	0.1370
t-5	111.226	0.9817	1.1389	0.0068	0.1374
t-4	112.804	0.9751	1.1165	0.0068	0.1372

Table 2: (continued).

t-3	110.774	0.9960	1.1375	0.0067	0.1370
t-2*	/	/	/	/	/
t-1*	/	/	/	/	/
t	109.993	1.0019	1.1511	0.0068	0.1394
t+1	109.542	1.0072	1.1536	0.0068	0.1383
t+2	110.460	1.0011	1.1356	0.0069	0.1380
t+3	108.092	1.0208	1.1713	0.0068	0.1381
t+4	106.164	1.0352	1.1835	0.0071	0.1392
t+5*	/	/	/	/	/
t+6*	/	/	/	/	/
t+7	106.531	1.0325	1.1752	0.0072	0.1407
t+8	106.295	1.0348	1.1858	0.0071	0.1414
t+9	106.152	1.0392	1.1908	0.0072	0.1420
t+10	106.592	1.0360	1.1862	0.0072	0.1411
t+11	106.826	1.0324	1.1884	0.0071	0.1397
t+12*	/	/	/	/	/
t+13*	/	/	/	/	/
t+14	107.732	1.0241	1.1821	0.0071	0.1405

Source: Yahoo Finance

Notes: \*Non-trading day, data is unavailable

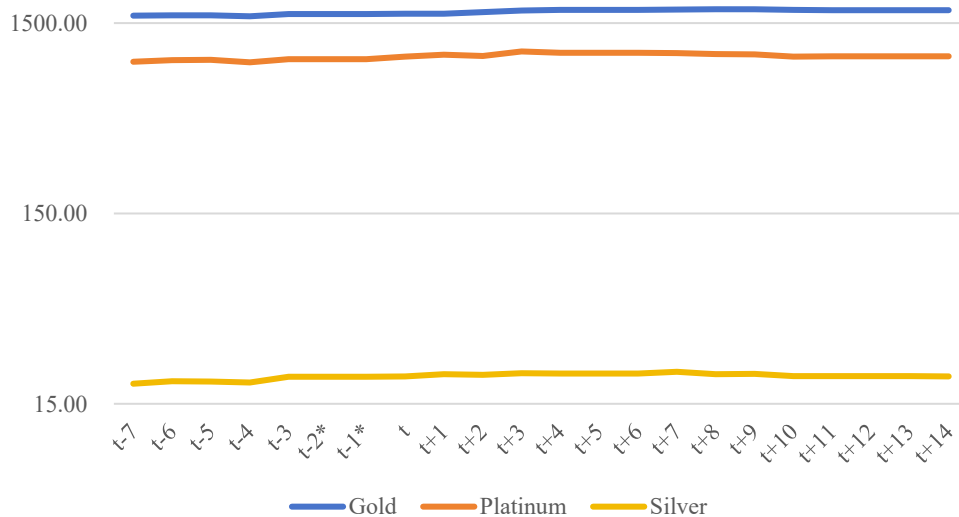


Figure 3: Prices of Gold, Platinum and Silver in USD/t.Oz (in Log Scale)  
Source: Gold (World Gold Council), Platinum (MacroTrends), Silver (Silver Price)  
Notes: \* Non-trading day, take the previous trading day data

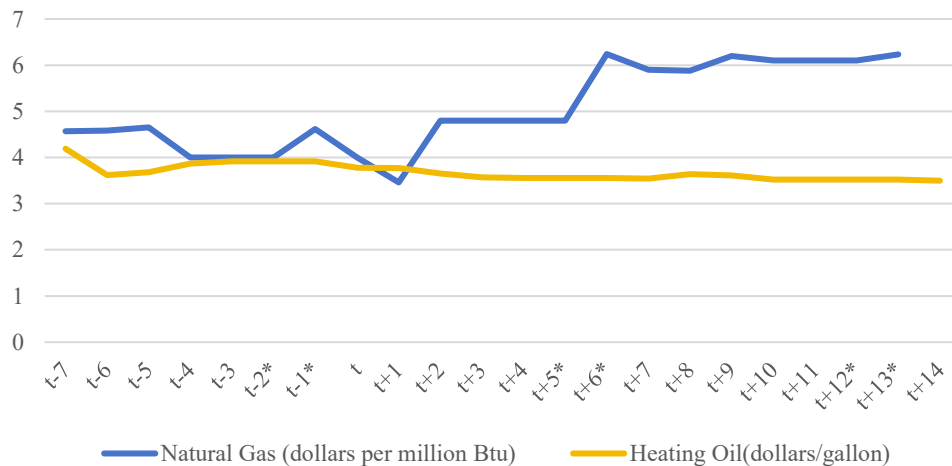


Figure 4: Energy Prices

Source: US Energy Information Administration

Notes: \* Non-trading day, take the previous trading day data

Figure 1 illustrates the variations in the stock market before and after major events based on the annual average of the S&P 500 index in 2022. Despite some fluctuations in the two days following the event, the index experienced a significant increase on the third day, and subsequently maintained a performance level above the average for 2022. During this period, the stock market did not suffer any negative impact from the FTX collapse; rather, it sustained some growth.

Figures 2 depict the price changes of three major cryptocurrencies during the event period: Bitcoin, Ethereum, and Bitcoin. The price changes of these three cryptocurrencies all exhibit similar trends: there are some fluctuations before the event, followed by a decline on the day of the event, reaching the lowest point on t+2 days. Although there is a slight increase on t+3 days, it still shows a downward trend until t+14 days. On the other hand, for fiat currencies, as shown in Table 2, all major world currencies, excluding the US dollar, experienced slight growth during the observation period.

Figures 3 show the changes in the prices of precious metals during the same period. These three precious metals (gold, silver, and platinum) experienced price increases after the active day and maintained at high levels thereafter.

Figure 4 illustrates the price changes of natural gas and heating oil. Natural gas shows an upward trend, while heating oil remains relatively unchanged.

#### 4. Insights into Hong Kong Pension Fund Investment

According to the latest data from the Hong Kong Census and Statistics Department, it is projected that by 2064, the proportion of elderly aged 65 and above in Hong Kong will rise to approximately 33%, a significant increase compared to about 18% in 2020. This trend indicates that Hong Kong, as a highly developed international financial center, is facing increasingly severe challenges regarding population aging. The labor market will experience growing pressure, and the pension system will encounter significant challenges [7].

##### 4.1. Current Social Situation in Hong Kong

The world is facing the rapid aging of its population, and welfare states are under pressure to support an increasing number of elderly people. Surveys indicate that the proportion of people aged 65 and above in Hong Kong is relatively high, at 18.20%. There are many reasons for this phenomenon,



which will also lead to various consequences. Young people must cope with significant family pressures, while the government needs to allocate a considerable budget to care for the elderly [8].

As the trend of global population aging becomes increasingly apparent, welfare states are facing unprecedented challenges. Particularly in Hong Kong, the proportion of people aged 65 and above has reached 18.20%. This phenomenon has complex causes and has triggered a series of profound social consequences. On one hand, with advancements in medical technology and improvements in living standards, people's lifespans have significantly increased. This means more elderly people can live healthy lives, but it also brings pressure on society for eldercare. On the other hand, with declining birth rates and changes in family structures, more families are adopting a "4-2-1" or "4-2-2" structure, where a young couple is responsible for supporting four elderly individuals and one or two children. This change in family structure places significant economic and psychological pressure on young people.

In response to this situation, governments often need to invest more resources and budget into addressing aging issues. This includes increasing social welfare spending, improving healthcare coverage, and enhancing elderly care and rehabilitation services. However, these measures often lead to increased financial pressure on the government and may even affect investment in other important areas. Balancing various needs under limited financial resources is a major challenge faced by governments.

Furthermore, aging issues may also trigger a series of social problems. For example, the labor market may experience a situation of supply shortages, leading to rising labor costs and decreased competitiveness for businesses.

#### **4.2. Retirement Pension Policy and System in Hong Kong**

Since the 1980s, reforming pension systems globally has become an undeniable trend. Against this backdrop, the Hong Kong government has undertaken a series of reforms aimed at providing its elderly residents with more stable and sustainable protection.

The Hong Kong government has established a safety net for elderly residents with low income and assets through the implementation of Comprehensive Social Security Assistance (CSSA) and Elderly Living Allowance (ELA) programs [9].

However, Hong Kong's pension system primarily revolves around the Mandatory Provident Fund (MPF) scheme. Implemented since 2000, this scheme aims to provide retirement protection for the workforce in Hong Kong, offering a relatively stable source of retirement income for workers. As the economy and society continue to evolve, the MPF scheme faces various challenges. The investment return rate of the scheme is not stable and sometimes fails to meet the expectations of participants. Therefore, enhancing the investment return rate to ensure the appreciation and preservation of pension funds has become an important issue for the Hong Kong government to address.

Additionally, coverage is another major challenge faced by the MPF scheme. Despite its requirement for all employed individuals to participate, there are still segments of the population not covered, such as informal workers and freelancers. These individuals may face significant economic pressure upon retirement. Therefore, expanding the coverage of the MPF scheme to benefit more people is a matter the Hong Kong government needs to consider [10].

#### **4.3. Implications of Fluctuations in the U.S. Pension Industry for the Hong Kong Region**

Efforts in advanced economies of Europe and North America to increase retirement savings and address pension security issues have been particularly notable, while also actively creating new avenues to extend working years. However, comparatively less attention has been paid to East Asian economies [11].



In recent years, the outbreak of the COVID-19 pandemic has brought unprecedented shocks to the global economy, with economic and fiscal consequences far exceeding expectations [12]. Against this backdrop, the stability and sustainability of pension funds have become particularly important. The development of pension funds in the BRICS group, as well as economies such as Singapore and Hong Kong, China, has attracted considerable attention. Despite ranking among the top 25 globally in terms of pension fund assets from 2001 to 2020, the assets of their pension funds are still relatively small compared to the United States, amounting to only 1/80th of that of the United States [13].

In response to this challenge, East Asian economies such as Hong Kong can draw lessons from the adjustments and reforms in the U.S. pension industry. In the United States, the pension industry has undergone years of adjustment and reform, accumulating rich experience. For example, the United States has introduced pension systems such as the 401(k) plan to encourage individuals to save for retirement. At the same time, the U.S. pension industry also emphasizes improving investment efficiency by introducing professional investment management institutions, optimizing asset allocation, and realizing the preservation and appreciation of pension assets [14].

For East Asian economies like Hong Kong, leveraging the successful experience of the U.S. pension industry is of great significance. By learning and applying these experiences, Hong Kong can continuously improve its pension system, enhance the management efficiency of pension assets, and provide better retirement security for the elderly. It also helps promote the sustainable development and social stability of the Hong Kong economy.

## 5. Conclusion

### 5.1. Research Advantages and Disadvantages

This study represents the earliest attempt to comprehensively investigate the impact of the bankruptcy of FTX, the world's fourth-largest cryptocurrency exchange, on pension systems. Its insights are crucial for the development of the pension industry in the Hong Kong region.

Due to the rapidly evolving nature of cryptocurrency development, there is a weak timeliness in data collection, requiring more timely data for forecasting front-end developments.

### 5.2. Current Status and Discussion

The collapse of FTX had an important and negative impact on the cryptocurrency market, Bitcoin, Ethereum, and Binance Coin all showed significant negative react, and the total market cap plummeted to a two-year low. While the impact is limited as for other markets. Energy and currency markets were largely unaffected. Equity and precious metal gold market even make positive gains, which suggest that these markets became safe havens to cryptocurrencies investors during the collapse of FTX.

The US pension system adopts diversified investments and heavily invests in stocks and physical assets (including energy, currency, and precious metals) [15]. Despite the rise of new investments, especially in the cryptocurrency market, the negative impact on US pension funds in the FTX bankruptcy remains very limited.

It is crucial for Hong Kong's pension system to maintain stable returns in the face of an increasing number of elderly people. And as an important part of the global financial market, Hong Kong's financial industry is highly sensitive to international financial fluctuations [15]. To cope with the floating financial market, Hong Kong can learn from the pension fund investment system of the United States, achieve diversified investment while maintaining a cautious attitude towards emerging investment areas.

### 5.3. Outlook for the Development of the Pension Industry in Hong Kong

Given the increasingly severe aging population issue facing Hong Kong, the development of the pension industry becomes crucial. Effective policy planning and industry innovation are indispensable to ensure the sustainability of the future pension system. The development of the pension industry in Hong Kong should actively draw lessons from international experiences, especially those countries that have undergone or are undergoing pension system reforms. The significant proportion of the U.S. pension industry, along with the flexibility of its plans and the synergy between the public and private sectors in pension management, provides valuable insights for Hong Kong. By formulating more flexible policies, we can enhance the attractiveness and efficiency of pension plans, including but not limited to improving the investment return of the Mandatory Provident Fund (MPF), promoting more voluntary retirement savings plans, and incentivizing participation and innovation from the private sector.

In driving the future development of the pension industry in Hong Kong, we must emphasize diversification of pension products and services. Drawing from the success of American Individual Retirement Accounts (IRA) and 401(k) plans, we can explore more personalized and flexible retirement savings schemes. Additionally, leveraging advanced technologies such as financial technology (Fintech) and artificial intelligence (AI), we can enhance the efficiency and quality of services, better meeting citizens' needs for pension management.

Facing future challenges, the development of Hong Kong's pension industry requires policy support and guidance, as well as innovation and reform within the industry. By drawing lessons from international success stories, strengthening the application of technology in pension management, and improving public financial literacy on pensions, we can build a more robust, flexible, and sustainable pension system, providing citizens with sufficient retirement security. This is not only a responsibility to Hong Kong society but also to every citizen, ensuring they can enjoy a secure and dignified life after retirement.

### Author Contributions

This paper was jointly completed by Tianwen Xu, Hongtaijia Hou, Yucheng Huang. Everyone has made equal efforts in the research of this topic, and their contribution to the paper is average. It is hereby explained.

### References

- [1] *What do responses of financial markets to the collapse of FTX say about investor interest in cryptocurrencies? Event-study evidence*
- [2] *CNBS - FTX's token plunges 80% on liquidity concerns, wiping out over \$2 billion in value*
- [3] *ESG fund scores in UK SRI and conventional pension funds are the ESG concerns of the SRI niche affecting the conventional mainstream?*
- [4] *Pension funds, capital market development, and macroeconomic variables: Evidence from Jordan*
- [5] *CalPERS 2022-2023 Annual Comprehensive Financial Report*
- [6] *Pension funds as fuel for overall investment level and economic growth: An empirical insight from South African economy*
- [7] *Hong Kong Census and Statistics Department. (2020). Hong Kong population forecast 2020-2064*
- [8] *Journal of International Financial Markets, Institutions & Money*
- [9] *Retirement protection on one's own: retirement readiness and worries among middle-income earners in Hong Kong*
- [10] *Mandatory Provident Fund Schemes Authority (MPFA). (2021). Introduction to the Mandatory Provident Fund Scheme.*
- [11] *Age, work and pensions in the United Kingdom and Hong Kong: An institutional perspective*
- [12] *What is the trend after Covid-19? A Political-Economic Analysis of the Pension Systems in Hong Kong and MACAU*
- [13] *Traditional and New Methods of Pension Authentication in China: Reasons, Methods and Problems*

- [14] Clark, G. L., & Monk, A. H. B. (2017). *The Oxford Handbook of Pensions and Retirement Income*. Oxford University Press.
- [15] *Stock market integration in East and Southeast Asia: The role of global factors*