

To cite this article: Dinh The Hung and Do Dang Quang (2024). Factors Influencing Copper Investment In The Derivatives Market In Vietnam. International Journal of Education, Business and Economics Research (IJEBER) 4 (4): 143-152

## FACTORS INFLUENCING COPPER INVESTMENT IN THE DERIVATIVES MARKET IN VIETNAM

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<https://doi.org/10.59822/IJEBER.2024.4414>

### ABSTRACT

Derivative commodity investment, an increasingly significant aspect of Vietnam's financial markets, involves trading contracts based on the value of underlying physical commodities such as metals, agricultural products, and energy sources. This investment arena is shaped by a multitude of factors ranging from global economic conditions to specific national policies. Copper is a vital industrial metal with extensive applications in construction, electronics, and renewable energy sectors. In Vietnam, the derivatives market for copper plays a crucial role in allowing investors to hedge risks and speculate on price movements. Understanding the factors influencing copper investment in this market is essential for making informed decisions. This article aims to explore the factors affecting copper investment in the commodity derivatives market in Vietnam from 2020 to 2024. The research team makes recommendations for investors.

**KEYWORDS:** - Derivative commodity investment, Derivatives market, Copper.

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Published Online: July 2024

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### 1. INTRODUCTION

Copper, a key industrial metal, is essential for various sectors including construction, electronics, and renewable energy. In Vietnam, the derivatives market for copper has been gaining traction as investors look to hedge risks and speculate on price movements. This article examines the primary factors influencing copper investment in Vietnam's derivatives market from 2020 to 2024. Thereby, the research team offers a number of recommendations to help investors make appropriate decisions when investing in copper in the commodity derivatives market.

## 2. Overview of Research on Investment in the Commodity Derivatives Market

Research on investment in the commodity derivatives market covers various topics, including market efficiency, hedging and risk management, speculation, pricing models, behavioral finance, macroeconomic impacts, and technological advances.

Studies such as Fama (1970) explore market efficiency, showing mixed results in commodity futures markets. Research by Schwarz and Szakmary (1994) demonstrates that futures markets often lead spot markets in price discovery.

Johnson (1960) and Ederington (1979) are foundational works on the effectiveness of hedging with futures and options. Analysis using models like OLS and GARCH to determine optimal hedge ratios is discussed in works by Baillie and Myers (1991).

Studies such as those by Irwin and Sanders (2012) examine the roles of speculators and hedgers, finding that speculators often provide liquidity. Research by Pirrong (1995) investigates the impact of large traders and potential manipulation.

Theories by Keynes (1930) and Hicks (1939) explain futures prices relative to spot price. Behavioral finance aspects, such as those discussed by Tversky and Kahneman (1974), affect trading behavior in commodity markets. Studies by Tetlock (2007) use sentiment indicators to predict market movements.

Research by Gorton and Rouwenhorst (2006) shows how interest rates, inflation, and geopolitical events influence commodity markets. Works by Diebold and Yilmaz (2009) explore the interconnectedness of global markets.

The impact of high-frequency trading is studied by Kirilenko et al. (2011), showing effects on liquidity and volatility. Research on blockchain's impact on commodity trading is emerging, as discussed in works by Peters and Panayi (2016).

## 3. Characteristics of Copper Commodity Investment in the Derivatives Market

Copper is one of the most vital industrial metals, widely used in various sectors such as construction, electrical, and transportation. Investing in copper through the derivatives market has become increasingly popular among investors seeking to hedge against risks or speculate on price movements.

Copper commodity investment in the derivatives market involves buying and selling contracts whose value is derived from the price of copper. These contracts include futures, options, and swaps. A futures contract is an agreement to buy or sell a specific amount of copper at a predetermined price on a specified future date. Options give the holder the right, but not the obligation, to buy or sell copper at a set price before the contract expires. Swaps are contracts in which two parties exchange cash flows or other financial instruments, often used to hedge against price volatility.

## Characteristics

- **Leverage:** One of the most significant characteristics of investing in copper through derivatives is the use of leverage. Leverage allows investors to control a large position with a relatively small amount of capital. This can amplify gains, but it also increases the potential for significant losses.
- **Liquidity:** Copper futures and options are traded on major exchanges such as the London Metal Exchange (LME) and the COMEX division of the New York Mercantile Exchange (NYMEX). These markets are highly liquid, meaning there are many buyers and sellers, which facilitates easy entry and exit from positions.
- **Price Discovery:** The derivatives market plays a crucial role in the price discovery process. The prices of copper futures reflect the collective expectations of market participants about future copper prices, based on various factors such as supply and demand dynamics, geopolitical events, and macroeconomic trends.
- **Risk Management:** Investors use copper derivatives to manage risk. Producers and consumers of copper can hedge against adverse price movements by locking in prices through futures contracts. Speculators, on the other hand, take on risk in hopes of profiting from price changes.
- **Volatility:** Copper prices can be highly volatile, influenced by factors such as economic growth, industrial activity, and changes in inventory levels. This volatility presents both opportunities and risks for investors.

Investing in copper through the derivatives market offers various benefits, including leverage, liquidity, and risk management. However, it also comes with significant risks due to the volatile nature of copper prices. Understanding the definition and characteristics of copper commodity investment is crucial for investors looking to navigate this complex market.

## 4. Investment in Copper in 2020-2024

### Global Market Overview

#### Price Trends:

- **2021:** Copper prices surged, reaching a record high of \$10,730 per metric ton in March due to a supply-demand imbalance exacerbated by the pandemic.
- **2022-2023:** Prices fluctuated between \$8,000 and \$9,000 per metric ton, influenced by economic uncertainties and reduced demand, particularly in China.
- **2024:** Copper prices peaked at \$11,464 per metric ton in Q2 before stabilizing around \$8,500 to \$9,500 per metric ton.
- **Supply and Demand:**
- **Supply Constraints:** Production disruptions from major producers like First Quantum Minerals and Anglo American, and curtailments by Chinese smelters, significantly impacted supply.
- **Demand Drivers:** The green energy sector, especially the demand for electric vehicles (EVs) and renewable energy infrastructure, has driven the increase in copper prices.

### Vietnam Market Overview

#### Market Growth:

- **Early 2020s:** Vietnam's market for copper futures began to develop with a focus on establishing a modern financial market infrastructure.
- **2022-2023:** Efforts to integrate with global commodity exchanges led to higher participation from domestic and foreign investors.

#### Regulatory and Structural Developments:

- 2022: The introduction of new regulations aimed at enhancing market transparency and investor protection helped attract more participants.
- 2023-2024: Vietnam continued to modernize its trading platforms and regulatory framework, aligning with international standards to facilitate increased trading volumes and investment in copper futures.

### 5. Factors Influencing Copper Investment in the Derivatives Market

#### – Price Fluctuations of Copper

Copper price volatility is a crucial factor affecting investment in copper derivatives. Copper prices have experienced significant fluctuations from 2020 to 2024. During the COVID-19 pandemic in 2020, copper prices plummeted due to reduced industrial activity. However, they rebounded sharply in 2021 as economies reopened and demand surged. According to the World Bank, copper prices rose from around \$5,000 per metric ton in early 2020 to over \$9,000 per metric ton by mid-2021, driven by supply constraints and robust demand from China. The primary factor affecting copper investment in the derivatives market is the fluctuation in copper prices. Copper prices are influenced by global supply and demand dynamics. For instance, supply disruptions in major copper-producing countries like Chile and Peru can lead to price spikes. Conversely, a slowdown in demand from significant consumers such as China can cause prices to drop. According to Nguyen et al. (2021), the volatility in copper prices significantly impacts the value of derivative contracts in Vietnam.

#### – Global Economic Conditions

Global economic conditions significantly impact copper demand and prices. The global economic environment plays a significant role in shaping copper prices and, consequently, investment in copper derivatives. Economic growth rates, industrial production, and infrastructure development in major economies influence copper demand. As noted by Pham and Tran (2019), periods of economic expansion typically see increased copper demand, driving up prices and derivative values. Conversely, economic recessions can lead to decreased demand and lower prices. The recovery from the COVID-19 pandemic, particularly in major economies like China and the United States, led to increased copper demand in 2021 and 2022. However, economic challenges such as inflation and rising interest rates posed risks to copper prices in 2023 and 2024. The International Monetary Fund (IMF) reported global economic growth of 5.9% in 2021 but projected a slowdown to 3.6% in 2023 due to inflationary pressures and geopolitical tensions (IMF, 2023).

#### – Technological Advancements

Technological advancements, particularly in the renewable energy sector and electric vehicle production, have increased the demand for copper. Innovations in these areas can lead to substantial changes in copper demand and prices. Le et al. (2020) highlight that the growing adoption of renewable energy technologies in Vietnam and globally is a significant driver of copper demand, affecting derivative markets. Technological advancements, especially in renewable energy and electric vehicles (EVs), have significantly increased copper demand. EVs and renewable energy systems require substantial amounts of copper for their infrastructure. The International Copper Association reports that the adoption of EVs and renewable energy technologies is expected to

drive copper demand higher in the coming years. In Vietnam, the government's push for renewable energy development has further bolstered copper demand (Nguyen & Le, 2022).

– Supply Chain Dynamics

Supply chain factors, including mining production rates, transportation logistics, and inventory levels, directly impact copper availability and prices. Disruptions in the supply chain, such as strikes at mining sites or logistical challenges, can lead to price volatility. According to Hoang (2018), efficient supply chain management is critical for stabilizing copper prices and derivative investments.

Supply chain dynamics, including mining production rates, transportation logistics, and inventory levels, directly impact copper availability and prices. Disruptions in major copper-producing countries like Chile and Peru due to labor strikes, political instability, or logistical issues can cause significant price volatility. A Vietnamese Ministry of Industry and Trade report highlighted that global supply chain disruptions in 2021 and 2022 led to increased copper prices and impacted the domestic market.

– Regulatory Environment

The regulatory framework governing the derivatives market and the broader commodities market in Vietnam affects copper investment. Regulations related to trading practices, market transparency, and investor protections are vital for maintaining market integrity and investor confidence. The introduction of new regulations or amendments to existing ones can influence market dynamics. Nguyen and Bui (2019) discuss how regulatory reforms in Vietnam have impacted the derivatives market, including copper derivatives.

The regulatory environment in Vietnam affects the derivatives market for copper. Regulations related to trading practices, market transparency, and investor protection are crucial for maintaining market integrity and investor confidence. The 2021 Securities Law introduced several reforms aimed at improving market transparency and protecting investors, which positively influenced the derivatives market (Hoang, 2021).

– Geopolitical Factors

Geopolitical events, such as trade tensions and political instability, lead to uncertainty and price volatility in the copper market. Tran et al. (2020) emphasize that geopolitical risks are a critical consideration for investors in Vietnam's copper derivatives market. The trade war between the United States and China, ongoing since 2018, continued to affect global trade dynamics and copper prices into the early 2020s. Additionally, the Russia-Ukraine conflict in 2022 further exacerbated price volatility due to sanctions and supply chain disruptions (Tran et al., 2022).

– Investor Sentiment and Speculation

Investor sentiment and speculative activities significantly influence the derivatives market. Market perceptions about future copper prices, driven by economic reports, industry news, and broader market trends, drive trading volumes and price movements. The rises of retail investors and increased participation in commodity trading platforms have amplified market volatility. According

to Vu (2023), speculative trading based on market sentiment has had a significant impact on the volatility and liquidity of copper derivatives. The psychology and behavior of investors are essential in shaping market dynamics. Perceptions of risk, expectations of future price movements, and general market sentiment can drive trading volumes and price volatility in derivatives markets. Behavioral finance studies, such as those by Nguyen et al. (2020), indicate that Vietnamese investors' decisions are often influenced by herd behavior and overreaction to market news.

– Technological and Analytical Tools

Investment strategies based on technical analysis (examining historical price movements and trading volumes) and fundamental analysis (evaluating economic indicators and financial statements) are prevalent among investors. These analyses help investors make informed decisions, influencing market trends and pricing of derivative instruments. Pham and Le (2018) emphasize the growing importance of data analytics and algorithmic trading in Vietnam's derivative markets. The use of technological and analytical tools, such as data analytics, algorithmic trading, and predictive modeling, has transformed the derivatives market. These tools enable investors to analyze vast amounts of market data and make informed trading decisions. A study by Nguyen and Le (2022) discusses the increasing reliance on advanced analytics and technology in the Vietnamese derivatives market, enhancing market efficiency and investment strategies.

– Economic and Financial Policies

The monetary and fiscal policies enacted by the Vietnamese government and the State Bank of Vietnam significantly influence the derivatives market. Changes in interest rates, inflation control measures, and economic stimulus packages can alter investor sentiment and market conditions. For example, interest rate adjustments directly affect the cost of carrying commodities, thereby impacting futures prices (Pham et al., 2018).

– Global Economic Trends

The global economic environment, including growth rates, trade volumes, and macroeconomic stability, exerts a considerable influence on Vietnam's derivative markets. Economic downturns or booms in major economies like the United States, China, and the European Union affect commodity demand and prices. The interconnectivity of global markets means that economic health in these regions can have a ripple effect on Vietnam's commodity sectors (Tran & Nguyen, 2019).

## **6. Recommendations for Investing in Copper in Vietnamese Derivatives Market**

Investing in copper within Vietnam's derivatives market presents unique opportunities and challenges. Here are some key recommendations for investors:

– Understand the Local Market Dynamics

- Supply and Demand in Vietnam: Monitor local production and consumption patterns. Vietnam's industrial growth, infrastructure projects, and manufacturing sectors are major consumers of copper.
- Regional Trade Influences: Understand how regional trade agreements and partnerships, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), impact copper trade flows and pricing.

- Supply and Demand Dynamics: Copper prices are significantly influenced by the supply-demand balance. Monitor global production levels, particularly from major producers like Chile and Peru, and keep an eye on demand trends, especially from industrial sectors and major economies such as China.
- Economic Indicators: Copper is often considered a barometer for economic health. Key economic indicators, including GDP growth rates, industrial production, and manufacturing indices, should be closely watched as they can predict copper demand trends.
  
- Stay Informed on Global Economic Indicators
  - Global Economic Health: Copper prices are influenced by global economic trends. Pay attention to economic data from major economies like China, the US, and the EU, as these regions significantly affect global demand for copper.
  - Industrial Production and Construction: Track indicators related to industrial production and construction activities both globally and within Vietnam, as these are key drivers of copper demand.
  - Technological Advancements: Innovations in mining technologies or shifts towards alternative materials can impact copper supply and demand. Stay informed about technological developments that could affect copper usage.
  - Environmental Regulations: Stricter environmental regulations and sustainability practices can influence production costs and supply chain dynamics. Understanding these regulatory landscapes can provide insights into potential market shifts.
  
- Utilize Derivative Instruments Effectively
  - Futures Contracts: Utilize copper futures traded on international exchanges to hedge against price volatility. While Vietnam's derivatives market may not be as developed, international exchanges provide opportunities for Vietnamese investors.
  - Options and Other Derivatives: Explore options and other derivative instruments to manage risk and gain leverage. These can offer more flexibility compared to outright futures positions.
  
- Consider Technological and Environmental Factors
  - Technological Advances: Stay updated on advancements in mining technology and alternative materials that may impact copper demand. Technological shifts can alter the landscape of copper usage and production costs.
  - Environmental Regulations: Be aware of Vietnam's environmental policies and how they affect copper mining and production. Stricter regulations can lead to increased costs and supply constraints.
  
- Diversify Your Investment Portfolio
  - Commodities Diversification: Spread your investments across different commodities to reduce risk. Copper should be part of a broader commodities strategy.
  - Geographical Diversification: Consider investments in copper producers and related industries in different regions to mitigate local risks.
  
- Monitor Geopolitical and Trade Developments
  - Vietnam's Trade Policies: Understand Vietnam's trade policies and agreements that impact copper imports and exports. Trade barriers and tariffs can significantly influence prices and availability. Changes in trade policies, tariffs, and sanctions can impact copper supply chains and pricing. Stay informed about geopolitical events and policy changes in key producing and consuming countries.

- Global Geopolitical Events: Natural disasters, political unrest, and other global events can disrupt copper production and supply. Regularly monitor news and updates from reliable sources to stay ahead of potential market impacts. Keep an eye on global geopolitical developments that could disrupt supply chains, such as trade disputes or political instability in major copper-producing countries.
- Apply Technical Analysis and Market Trends
- Chart Patterns and Indicators: Use technical analysis to study price trends, patterns, and key indicators such as moving averages, support, and resistance levels.
- Volume and Open Interest: Analyze trading volume and open interest in copper futures to gauge market sentiment and potential price movements.
- Risk Management Strategies
- Set Stop-Loss Orders: Implement stop-loss orders to protect against significant losses in volatile markets.
- Position Sizing: Carefully manage position sizes to align with your risk tolerance and investment objectives. Avoid excessive leverage, which can amplify potential losses.
- Engage with Financial Experts
- Consult Financial Advisors: Work with financial advisors who are knowledgeable about the Vietnamese market and commodities trading to receive tailored advice and strategies.
- Access Market Reports: Subscribe to industry reports and market analyses from reputable sources to stay informed about market trends and expert insights.

By following these recommendations, investors can better navigate the complexities of the copper derivatives market in Vietnam, seize opportunities, and effectively manage risks.

## 7. CONCLUSION

Investment in copper derivatives in Vietnam is influenced by a complex interplay of factors, including price fluctuations, global economic conditions, technological advancements, supply chain dynamics, regulatory environment, geopolitical factors, investor sentiment, and the use of technological tools. Understanding these factors is essential for investors to navigate the volatile and dynamic market environment effectively. By closely monitoring these elements, investors can make more informed decisions and optimize their investment strategies in the copper derivatives market.

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