# **Price Stability Properties and Volatility of Precious Metals**

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It was recognized that stock markets can be impacted by shocks in financial market uncertainties, while precious metal markets are steadier secure resources that will not be highly impacted by outside shocks. Herein, the focus of the present research is on the price stability properties of precious metals during the 1997 Asian Financial Crisis, 2007–2008 Global Financial Crisis, and 2010 Eurozone Crisis.

stock market precious metals markets volatility spillovers

## 1. Introduction

The relationships and spillovers among precious metals, specifically gold and other precious metals, have been widely studied. For example, Escribano and Granger (1998) compared the performance returns of gold and silver and found a strong simultaneous relationship in returns between them. This finding contradicts Ciner's (2001) results. Ciner studied gold and silver returns for future contracts traded in Tokyo from 1992 to 1998 and found no evidence of long-run linkages between the gold and silver price movements. Lucey and Tully (2006) concluded that the gold-silver parity weakened during the 1990s. In general, Kearney and Lombra (2008) found a negative relationship between gold and platinum. Studying the wider perspective of the relationships among precious metals, Batten et al. (2010) found that the volatility of individual precious metals was influenced by other precious metals from 1996 to 2006. Following Batten et al.'s results, Batten et al. (2014) identified the existence of constant spillovers between silver and gold. The findings differed for the other two precious metals (platinum and palladium). Finally, Antonakakis and Kizys (2015) suggested that the 2008 Global Financial Crisis weakened the spillovers of gold while strengthening platinum spillovers. Precious metals' prices (in particular, gold and silver) have significantly increased from 1991 to 2011. The significant increase in price is because of a number of factors, such as economic and financial crises, inflation expectations, and increased demand in emerging markets (Lee and Lin 2010). This leads investors to consider investing in the precious metals market; it may play a vital role in the diversification of portfolios Adrangi et al. (2003); Lucey and Tully (2006). Speculators and arbitrageurs pay close attention to spillover effects between precious metals and stock markets across other asset classes (i.e., the foreign exchange market and stock markets) and other countries because this is where they can make money.

#### 2. Precious Metals during the 1997 Asian Financial Crisis

Volatility spillover in international markets is an important research topic, not only for policy makers and researchers, but also for investors. This issue has a number of practical implications in terms of risk hedging, asset allocation, portfolio risk management, and market efficiency. However, the effects of the transmission of risk (both risk and returns) are more apparent during periods of financial turmoil. In fact, linkages among cross-markets increased sharply during the three financial market crashes, indicating the existence of contagion among the different financial markets and different asset classes.

<u>Morales</u> (2008) determined the volatility spillover of precious metals from 1997 to 2007. The author used the GARCH and EGARCH models to investigate the behaviour of precious metals during the 1997 Asian Financial Crisis and found evidence that depreciation of the precious metals under stable and unstable financial market conditions tended to increase market volatility and the mean stock returns for precious metals. <u>Morales</u> (2008) suggested that there is clear evidence of a volatility spillover running in a bidirectional way.

### 3. Precious Metals during the 2008 Global Financial Crisis

Following the 2008 Global Financial Crisis, the concept of "flight to quality" drew the attention of policymakers and investors alike. This gave investors and portfolio managers reasons to add precious metals to their portfolios as an alternative avenue for diversification, especially after the increased presence of financial investors and financialisaton of commodity markets. In fact, over the past decade, commodity futures have become one of the most attractive asset classes and an investment vehicle for the portfolio managers, just like bonds and stocks. Previous literature (Baur and Lucey 2010; Baur and McDermott 2010; Gürgün and Ünalmış 2014; Mensi et al. 2014) empirically studied safe haven properties of precious metals. They concluded that gold can be used as a hedge in financial markets.

<u>Mensi et al.</u> (2017) examined the time-varying risk spillover between precious metals (gold, silver, platinum, and palladium) and four major stock markets (the US, Europe, Asia, and Japan). They used the <u>Diebold and Yilmaz</u> (2012) spillover index. In their preliminary analysis, the authors found some periods of significant price fluctuations for all the stock markets. Among the precious metals, silver was the most volatile market during their study period (2000 to 2016). All series exhibit volatility fluctuations in their evolution during from 2008 to 2009. Most interestingly, silver showed significant price increases between 2010 and 2012, followed by a plunge after the 2010 Eurozone Crisis. The authors found significant volatility clustering for all the series of returns during the 2008 Global Financial Crisis.

<u>Hillier et al.</u> (2006) investigated the role of precious metals in the financial markets using the daily price data for gold, silver, and platinum from 1976 to 2004. According to the authors, following the collapse of the stock markets during the 2008 Global Financial Crisis, in addition to increased global financial market integration of bond and stock markets, investors increased their participation in precious metal markets, which resulted in price increases. They also found that precious metals other than gold had a low correlation with stock market indices, particularly during periods of global financial market distress. Therefore, investment portfolios with precious metal exposure performed significantly better.

### 4. Precious Metals during the 2010 Eurozone Crisis

The financial markets did not expect that Greece's significant debt problems could trigger a European debt crisis. The weakening of government finances after the 2008 Global Financial Crisis resulted in a sudden loss of trust and confidence in both stock markets and sovereign debt, as well as driving alternative investment prices, such as precious metals, to record highs. The strong performance of precious metals, most commonly gold, during the economic downturn and especially during the 2010 Eurozone Crisis, led researchers to examine the properties and characteristics of these asset classes and their role in the global financial systems.

A number of studies such as <u>Jaffe</u> (<u>1989</u>) and <u>Hillier et al.</u> (<u>2006</u>) investigated the role of metals in diversifying investment portfolios. <u>Uddin et al.</u> (<u>2019</u>) examined both the spillover effect and price volatility of precious metals (gold, silver, platinum, and palladium) from 1999 to 2019. They wanted to investigate economic and fundamental events during the 2010 Eurozone Crisis. The authors found evidence of time varying and homogenous asymmetric spillover between the return volatilities of the precious metals. This suggests similarities in the cyclical relationship of precious metals with global and local fundamentals. They found evidence of the effects of the 2008 Global Financial Crisis and the 2010 Eurozone Crisis on all precious metal commodities. <u>Uddin et al.</u> (<u>2019</u>) also found that the trends in asymmetric spillover reached their highest from 2010 to the end of 2014's last quarter. This increase was associated with growing uncertainty caused by the 2010 Crisis.

The existence of linkages among advanced financial markets has been previously well documented and studied. Researchers investigating dynamic market linkages, which provide evidence of causal relationships, have also found significant volatility spillovers and price volatility across advanced markets (<u>Bae et al. 2000</u>; <u>Hamao et al.</u> <u>1990</u>; <u>Koutmos and Booth 1995</u>; <u>Theodossiou and Lee 1993</u>).

In the last few decades, there has been growth and development in global financial markets characterised by increased capital movement and international trade across borders. These features have led to the integration and co-movement of individual financial markets. As a result, stock markets in one country can be affected by apparent fluctuations in the financial markets of another country, affecting the former's performance and trends. All stock market returns are not only influenced by their past performance, but also by global news from other international stock markets (Lin et al. 1994).

#### References

- 1. Escribano, Alvaro, and Clive W. J. Granger. 1998. Investigating the relationship between gold and silver prices. Journal of Forecasting 17: 81–107.
- 2. Ciner, Cetin. 2001. On the long run relationship between gold and silver prices A note. Global Finance Journal 12: 299–303.

- Lucey, Brian M., and Edel Tully. 2006. The evolving relationship between gold and silver 1978– 2002: Evidence from a dynamic cointegration analysis: A note. Applied Financial Economics Letters 2: 47–53.
- 4. Kearney, Adrienne, and Raymond Lombra. 2008. Nonneutral short-run effects of derivatives on gold prices. Applied Financial Economics 18: 985–94.
- 5. Batten, Jonathan A., Cetin Ciner, and Brian M. Lucey. 2010. The macroeconomic determinants of volatility in precious metals markets. Resources Policy 35: 65–71.
- 6. Batten, Jonathan A., Cetin Ciner, and Brian Lucey. 2014. Which precious metals spill over on which, when and why? Some evidence. Applied Economics Letters 22: 466–73.
- 7. Antonakakis, Nikolaos, and Renatas Kizys. 2015. Dynamic spillovers between commodity and currency markets. International Review of Financial Analysis 41: 303–19.
- Lee, Wo-Chiang, and Hui-Na Lin. 2010. The dynamic relationship between gold and silver futures markets based on copula-AR-GJR-GARCH model. Middle Eastern Finance and Economics 7: 118–29.
- Adrangi, Bahram, Arjun Chatrath, and Kambiz Raffiee. 2003. Economic Activity, Inflation, and Hedging: The Case of Gold and Silver Investments. The Journal of Wealth Management 6: 60– 77.
- Morales, Lucía. 2008. Volatility spillovers on precious metals markets: The effects of the Asian crisis. Paper presented at the European Applied Business Research Conference (EABR), Salzburg, Austria, June 23–25.
- 11. Baur, Dirk G., and Brian M. Lucey. 2010. Is gold a hedge or a safe haven? An analysis of stocks, bonds and gold. Financial Review 45: 217–29.
- 12. Baur, Dirk G., and Thomas K. McDermott. 2010. Is gold a safe haven? International evidence. Journal of Banking & Finance 34: 1886–98.
- 13. Gürgün, Gözde, and İbrahim Ünalmış. 2014. Is gold a safe haven against equity market investment in emerging and developing countries? Finance Research Letters 11: 341–48.
- Mensi, Walid, Shawkat Hammoudeh, Juan Reboredo, and Duc Khuong Nguyen. 2014. Do global factors impact BRICS stock markets? A quantile regression approach. Emerging Markets Review 19: 1–17.
- Mensi, Walid, Khamis Hamed Al-Yahyaee, and Sang Hoon Kang. 2017. Time-varying volatility spillovers between stock and precious metal markets with portfolio implications. Resources Policy 53: 88–102.
- 16. Diebold, Francis X., and Kamil Yilmaz. 2012. Better to give than to receive: Predictive directional measurement of volatility spillovers. International Journal of Forecasting 28: 57–66.

- 17. Hillier, David, Paul Draper, and Robert Faff. 2006. Do Precious Metals Shine? An Investment Perspective. Financial Analysts Journal 62: 98–106.
- 18. Jaffe, Jeffrey F. 1989. Gold And Gold Stocks As Investments For Institutional Portfolios. Financial Analysts Journal 45: 53–59.
- 19. Uddin, Gazi Salah, Syed Jawad Hussain Shahzad, Gideon Boako, Jose Areola Hernandez, and Brian M. Lucey. 2019. Heterogeneous interconnections between precious metals: Evidence from asymmetric and frequency-domain spillover analysis. Resources Policy 64: 101509.
- Bae, Kee-Hong, G. Andrew Karolyi, and René M. Stulz. 2000. A New Approach to Measuring Financial Contagion. NBER Working Paper 7913. Available online: https://www.nber.org/papers/w7913 (accessed on 10 August 2022).
- 21. Hamao, Yasushi, Ronald W. Masulis, and Victor Ng. 1990. Correlations in Price Changes and Volatility across International Stock Markets. The Review of Financial Studies 3: 281–307.
- 22. Koutmos, Gregory, and G. Geoffrey Booth. 1995. Asymmetric volatility transmission in international stock markets. Journal of International Money and Finance 14: 747–62.
- 23. Theodossiou, Panayiotis, and Unro Lee. 1993. Mean and volatility spillovers across major national stock markets: Further empirical evidence. Journal of Financial Research 16: 337–50.
- 24. Lin, Wen-Ling, Robert F. Engle, and Takatoshi Ito. 1994. Do Bulls and Bears Move across Borders? International Transmission of Stock Returns and Volatility. The Review of Financial Studies 7: 507.

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