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Nexus between Economic Policy and Commodity Market

By

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Abstract

Background: Commodity markets are important since they influence price inflation, trade balances, and economic stability. Monetary, fiscal, trade, and environmental policies are some of the factors that influence commodity prices and market trends.

Aim: In this research, the effects of different economic policies on major commodities such as gold, crude oil, silver, and wheat are explored. This paper seeks to fill the above gaps by evaluating how these policies jointly influence market fluctuations and trading activities.

Method: In this study, descriptive data was collected and analysed on 72 observations which include the use of correlation index and multiple regression. The study also determined the impact of fluctuations in the economic policies on the price charged by the traders.

Result: The study established that gold and wheat prices rise with EPU while crude oil prices decline. The prices of silver exhibited stability with no percent variations. These results further demonstrate how economic policies affect some businesses more than others as well as the nature and extent of their effects on different types of goods.

Keywords: *Bullions: Commodity Markets, Economic Policy Uncertainty, Gold, Crude Oil, Silver, Wheat, Price Volatility, And Regression Analysis.*

Introduction

The Global commodity markets play a vital role in the world economy by influencing inflation rates and impacting the dynamics of exchange markets. For instance, commodities such as oil, agriculture products are integral to the growth and stability of an economy. They have the potential to drive, contribute to or alleviate inflation, effect trade balances, and shape overall economic growth (Xiao, Su, and Ayub, 2022). It is therefore necessary to analyze how these aspects of commodity markets are influenced by economic policy. Monetary policy, fiscal policy, trade policy, and environmental policy are all key components of economic policy. Monetary policy, managed by central banks, involves regulating interest rates and controlling the

money supply. Fiscal policy is an aspect of government expenditure and revenues on matters concerning the growth of the economy/stability of an economy (Adedoyin, and Zakari, 2020). Trade policy also encompasses barriers to imports and exports that are known as tariffs, agreements that govern trade, and any rules by which the exchange of goods and services is regulated. The environmental policy looks into such policies, standards, measures, and programs as those that regulate the sustainable use of resources in the production of commodities and can influence the prices (Labys, and Pollak, 2024). It is important to examine the relations between the economic policy and commodity markets for the following reasons. These interactions make it easier for policymakers to establish the right strategies and assist investors in making the right decision therefore leading to economic stability and growth. There has been a significant shortfall of adequately systematic research that focuses on and collates the two aspects to investigate how these elements interact. Today's studies tend to dissect one policy at a time monetary, fiscal, trade, or environmental policy and their combined impacts on the commodity markets are often missed. This study seeks to address this gap by analyzing how the multiplicity of economic policies affects the price of commodities, the level of volatility, and patterns of trade (Ahmed, and Sarkodie, 2021). Recognition of such interactions is important since policies can span out to result in fundamental changes in commodity trade systems, and geographical regions among others. Therefore closing this particular gap in the literature on this particular research topic, this study will complement the development of a better understanding of how economic policies impact the commodity markets to help the decision-makers, investors, and scholars in the process of making decisions adequately (Baffes, and Nagle, 2022).

The implications and findings of the present research are also crucial to various other stakeholders like policymakers, investors, and scholars. This knowledge will be invaluable to policymakers in formulating and implementation policies for managing commodity market. Understanding these various policy components interacts whether they counterbalance or complement one another will aid in efforts to stabilize and grow the economy (Adekoya, Oliyide, and Noman, 2021). This study's findings will be significant for several key shareholders. Any changes in policy will be detailed in reports, providing investors with insights into such change might impact commodity price and market conditions, ultimately aiding in the development of more effective investment strategies. Additionally, experts the scholars in academia and research

will benefit from a deeper understanding of the relationships between theoretical economic polices and commodity markets, thereby enriching the broader knowledge base on economic policy and market structure (Apergis, Chatziantoniou, and Cooray, 2020). The results will also carry important policy implications, guide future decision-making in this area for risk management of commodity markets and taking advantage of changes in policies.

LITERATURE REVIEW

Economics Policy and Commodity Markets

It is therefore important to understand the interaction between Monetary and Fiscal policies in managing Commodity markets since they have expanded impact on the prudent of economic activities and the functioning of markets. Interest rates and availability of money for use for investment purposes are controlled by the monetary policy which is under the central bank's control and controls the demand of commodities (Ahmed, and Sarkodie, 2021). Both policies, based on government expenditure and revenue collection, can affect the demand for commodities and their subsequent output. By empirical evidence, it is established that monopoly means such as low interest rates and large-scale quantitative easing can cause more investment to be made in commodities with an inflation hedge and consequently cause prices to rise (Shapiro, 2021) Also, the use of fiscal policy a tool of expansion and increased government spending increases the demand for raw materials, thus increasing the price of commodities. On the other hand, fiscal consolidation or austerity measures can decrease the demand for commodities hence lowering the prices. Together these policies can result in volatility of commodity prices such that policy diversification may cause considerable variation in price and market disorder (Burns, et al., 2020). Trade and environmental policies are assumed to affect variously the structure of commodities and price susceptible to volatility. Market access can be introduced as a major determinant of International Commodity Trade Flows and Prices through various trade policies which include tariffs and trade agreements. Public measures, such as emission and resource consumption standards, change the practices of production and the supply of commodities. For example (Yuan, and Zhang, 2020), restrictions on the importation of fossil energies, result in high costs and low availability while environmental policies supporting the utilization of renewable energy increase requests for metals used in the production of other commodities such as lithium for batteries. Previous work is documented for example by (Zhang, et al., 2021) where

case studies including the effect of the Paris Agreement on the energy commodity revealed how the global commitment to environmental standards alters the trading and pricing patterns of commodities.

Review of Empirical Studies

The literature review has shown that the subject of the interaction between the monetary policy and commodity markets has been extensively researched and most especially based on how interest rate adjustments, inflation trends, or quantitative easing affects commodity prices or market stability. Studies revealed that lower interest rates positively affect the demand for commodities for two reasons; lower borrowing cost leads to higher economic activity and investments in commodities as well as alternative asset. For instance, the findings of (Tobal, and Menna, 2020) explain that the price shock of oil is most probable when interest rates are low because interest rates stimulate demand. Furthermore, expansionary activities such as through monetary policy leading to high levels of inflation increase the prices of commodities in general since commodities such as gold act as an inflation hedge. Such works explain that monetary policy is an important factor that influences the development of commodity markets and reveals the differences in the commodity markets' response to changes in policy settings (Galí, 2020).

Research carried out on fiscal policy influence on commodity prices underlines that government expenditure, revenue, and budget imbalances exert influence on the essential supply and demand. This is supported by factual evidence that more often expansionary fiscal policies like increased government expenditure lead to an increase in the demand for commodities hence raising their price. For example, they pointed out that the stimulus packages financed during recessions had created the demand for construction materials, energy commodities, and agricultural produce (Akyüz, 2020). On the other hand, fiscal stringency through a cuts and taxes approach has been found to reduce the demand for commodities, hence the price and trade. Also, budget deficits and the inability of governments to balance the budget through spending lead to government borrowings that affect commodity prices through the rates of interest and market feelings. These papers illuminate the fiscal policy and commodity market interconnections while calling for policy synergy in attaining market equilibrium (Ibrahim, and Ajide, 2022).

Literature and studies in the field of trade policies indicate that while using tariffs, trade agreements and export restrictions have central roles in regulating the cross-sectional commodities markets. For instance, the research on the effect of tariffs imposed by the U.S. on steel and aluminum has established how such measures result in the elevation of prices and affect the supply chain globally (Akyüz, 2020). The review of major agreements like NAFTA, concerning the agricultural commodity trade will show how trade agreements improve market access and price stability. On the other hand, the barriers to exportation for example the export restrictions that were put in place during the 2007/2008 food crisis give a clear picture of how trade barriers create price volatility and market insecurity.

The survey focusing on environmental policies in the commodity markets shows that regulation and sustainability policies have a tremendous impact on commodity production and price. For instance, Sorrell et al with their research have shown that there is a relation between carbon emissions regulations and the rise in the cost of producing energy-intensive commodities for instance coal and oil through the increase in the prices. Research on sustainability certifications and resource management policies indicates that such instruments can influence the availability of materials such as timber and agricultural produce and therefore call for shifts in prices (Chu, and Tran, 2022). Consequently, the results reveal the role of environmental policies in regulating markets, especially in industries depending on natural resources.

Theoretical Framework

Economics Policy Theories

Economic policy theories therefore are a very important aspect when it comes to an assessment of policy decisions and related commodity markets. The Quantity Theory of Money states that there is a direct relationship between the amount of money in circulation and the price level thus affecting inflation rates and prices of commodities. In this regard, the IS-LM Model goes further to indicate how changes in interest rates and money supply affect economic activity and, consequently, prices of commodities. For instance, the decrease in interest rates increases investment in commodities, and this leads to the high prices of the commodities, while contractionary monetary policies lower the prices of those commodities by lowering the demand (Ding, et al., 2021). Trade policy known as the Law of Comparative Advantage describes how countries gain from the exportation of items it can produce relatively impacting international

trade and markets. The Gravity Model of trade means that more trade is done between the large economies or their neighbors; this can either enhance or cause volatility in the commodity trade depending on the policy in the trade. Secondly, theories applied to environmental policy such as the Polluter Pays Principle state that it is the producer who should be charged with the costs incurred on the environment, an action that would increase the costs of production and probably the costs of commodities (Ehrenberg, Smith, and Hallock, 2021).

Commodity Market Theories

The commodity market, therefore, entails the mastery of the supply and demand mechanism, which is handy in price setting as well as market balance. In Supply and Demand Theory, a high level of demand or a low level of supply leads to high prices while a low level of demand or high level of supply leads to low prices. Other ways by which the price of a commodity is affected include price discovery tools such as futures contracts and spot markets. Hedging markets involve further planning by the producers as well as the consumers whereby they are in a position to risk future fluctuation of selling price while the spot markets show the present retail price prevalent in the market as a result of active demand and supply (Liu, et al., 2022). Various theories exist regarding the occurrence of market volatility, an indication of price fluctuations in any market, and speculation whereby people purchase different commodities to sell them shortly to make profits remain valid. This activity could upset the market stability by causing market fluctuations resulting in higher prices that are not necessarily a result of an increase in demand or lower prices that do not reflect supply conditions this may for instance, be caused by social factors such a geopolitical conflict, changes in economic policies or even unfavourable weather conditions (Tarakçı, Ölmez, and Durusu-Çiftçi, 2022).

Gaps in Existing Research

One major unanswered question in the existing literature is that the overall impact of various systems of economic policies including monetary, fiscal, trade, and environmental policies on the commodity markets has been evaluated separately but so far there is no comprehensive study on the transportability of the impact of the combination of these policies. However, most of these studies pay attention to each of these policies individually, which hinders recognition of how these determine markets' actions and reactions (Ramos, et al., 2022). The key messages that have emerged from this analysis are that there is the need to research

these policies together; and the need to measure the impact and effects of these policies on commodity prices, price volatility, and trade flows. Furthermore, there are considerable deficiencies as regards the geographical focus of the studies and particular products in question. Likewise, research may target the global or large-market areas leaving out the rising impacts of economic policies in small or developing areas whose impacts may vary (Sharma, and Paramati, 2021). Filling these gaps would have helped to build a more holistic picture of the topic.

METHODOLOGY

This study uses a quantitative research approach in an attempt to test and examine the association between EPU and the prices of various commodities namely Gold, Crude Oil, Silver, and Wheat. The quantitative method is used in this study to facilitate the accumulation, evaluation, and synthesis of numerical data quantitatively to measure the variables of interest and statistically test their interrelationships. Therefore for this study which is to assess the changes in commodity prices occasioned by EPU, the study design is explanatory whereby statistical methods like regression analysis are employed to establish causality. The quantitative also helps to deal with large amounts of data which is important for studying the dynamics of the problem throughout time and making generalizations based on the data collected in the past. This study mainly uses only secondary data collection techniques as the main data collection method. The prices of the commodities namely Gold, Crude Oil, Silver, and Wheat were obtained from reputable financial databases such as Bloomberg and Reuters to obtain accurate historical market prices of the above-stated products. The Economic Policy Uncertainty (EPU) index was collected from the World Bank indicator and EPU index which is globally acclaimed to measure economic policy news based on the frequency of occurrence in newspapers (Alquist, Bhattarai, and Coibion, 2020). The choice of such sources can be explained by such important factors as credibility, historical focus, and applicability of source materials to the goals and objectives of the study. These datasets are used in the analysis of the temporal relationships between EPU and commodity prices and help to ensure that the data is relevant and the analysis is meaningful to the research questions (Liu, et al., 2022).

RESULT AND DISCUSSION

4.1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Gold	72	1673.03	264.85	1196.2	2071.8
Crude Oil	72	66.66	18.98	18.84	114.67
Silver	72	21.35	4.20	14.18	29.744
Wheat	72	632.58	151.94	429	1088
Economic Policy Uncertainty	72	156.90	51.30	88.47	350.46

The descriptive statistics provide an overview of the main variables in the study: these indicators as gold, crude oil, silver, wheat, and EPU economic policy uncertainty. Gold price as this was observed for the 72 observations was $1,673 on average. The mean price is 03 dollars per ounce and the standard deviation is equal to 264.85, indicating substantial variability. Another manufacturer's prices started from $1,196. But is only $20 to a high of $2,071.80. In the same year, the average price per barrel of crude oil was $ 66.655 per barrel but had a high standard deviation of $18.98 depicting the price fluctuations of the shares which at times sold at as low as $18.84 to $114.67.

Silver averaged $21.35 per ounce and its standard deviation of $4.19 while gold was fluctuating from $ 14. 18 to $29.74. Wheat prices averaged 632.58 cents per bushel with a standard deviation of 151.936. When it comes to the EPU index it marked an average of 156. 90 with a Std. Dev of 51.30 covers a wide spectrum of uncertainty levels, from a low of 88.46 to a high of 350.45. These descriptive statistics depict fluctuation in the prices of the selected commodities and EPU, especially gold and crude oil, which have high standard deviation and moving range; this is important when establishing the link between EPU and the selected commodities.

4.2 Correlation Analysis

	Gold	Crude Oil	Silver	Wheat	Economic Policy Uncertainty
Gold	1				
Crude Oil	0.2685*	1			
Silver	-0.3725*	-0.6430*	1		

Wheat	0.5484*	0.7084*	-0.4697*	1	
Economic Policy Uncertainty	0.2921*	-0.5143*	0.3458*	0.0318	1

The research uses correlation analysis to determine the nature of the connection between the variables that provide conclusions on their interactions. Gold and crude oil can be said to be moderately positive and this means that these two commodities tend to move in the same diagonal but not closely. This may be explained by the fact that their prices may be related to some underlying global economic factors that have an impact on demand for these two commodities. But while silver has a strong negative co-efficient with gold (-0. 3725) and it also bears a negative correlation with crude oil (-0. 6430).

This inversely proportional relationship means that while gold and crude oil prices increased, the prices of silver decreased. It is quite astonishing to come across this result in the same economic environment, while silver is believed to be a safe-haven asset just like gold, it responds differently. Wheat again has a positive coefficient of correlation of 0.7084 with crude oil prices; therefore, this portrays that the price volatility of oil significantly impacts the prices of wheat. This could probably be due to ratios of oil to agricultural production impacting on costs of production, transport, and marketing. That a high degree of correlation persists must not distract from the interdependence of commodities, especially when it comes to sectors that fall under the remit of energy. The sign of EPU with gold is positive (Pearson's 'r' = 0. 2921) which indicates that gold price rises during periods of uncertainty in the economy, because it's generally considered asset. On the other hand, EPU has a negative value of -0.5143 with crude oil which suggests that increased economic unpredictability results in lower crude oil prices. While analyzing the EPU and Wheat relationship, it can be seen that there exists a very weak positive relationship between the two i.e., the correlation coefficient (r) = 0. 0318 which means that wheat prices are not affected by the economic policy uncertainties as compared to other commodities.

4.3 Regression Analysis

Economic Policy Uncertainty	Coef.	Std. Err.	t	P>|t|
Gold	0.049	0.019	2.62	0.011
Crude Oil	-2.534	0.352	-7.19	0
Solver	1.551	1.262	1.23	0.223
Wheat	0.208	0.043	4.86	0

_cons	79.007	52.276	1.51	0.135

From the regression analysis, the results provided demonstrated that gold and wheat prices positively affect EPU. Therefore an increase of 1 in the EPU index is equal to 0.489672 and an increase of $1 in the price of wheat leads to a 0.2082936 rise in EPU. The findings imply that both gold and wheat are both significantly associated with economic policy uncertainty, and so confirm that these commodities are indeed useful barometers of economic distress. The price of crude oil on the other hand has a great and negative relationship with EPU with a coefficient of - 2.533961. On the other hand, declining oil prices will point towards a threat and hence its impact is associated with higher uncertainty. Silver's insignificance in affecting the EPU (r = 0. 223) to an extent that is lower than gold or wheat implies that it does not share the same importance in portraying policy.

CONCLUSION

These findings can be taken as significant since they shed light on the relations that involve commodity prices and economic policy uncertainty. The results of EPU analysis in terms of positive correlation with gold prices strengthen the traditional argument of gold as being an inflation hedge, especially during volatile economic times. The fact that investors buy more of the precious metal during economic turbulence pushes up the price of gold as it is considered a hedge. The nature of the inter-relationship between crude oil and wheat can be seen as an example of how energy price affects agricultural produce. Although high oil prices signal prudent economic activity and less uncertainty they result in a rise in costs in other sectors of the economy like the agricultural one. The findings on EPU do therefore pose directly the question of whether Silver can be considered a asset in the mannerly sense as frequently advocated by theoretical and cross-section empirical literature alongside gold, insofar as schooling into the economic policy uncertainty domain is concerned. Hence, this result implies that the movement of silver's price might not be subjected to the same factors as gold and oil.

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