

Research Article

## Commodity Pricing Mechanism Generalized Supply and Demand Equilibrium Research

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**Abstract:** "After Copenhagen age", the pattern of global energy, environment and resources, is under intense interest differentiation and reorganization. In order to natural gas as a new energy focus, took place in the global new energy game between the great powers, natural gas as the foundation energy is the world within the scope of comprehensive development and utilization. The particularity of natural gas energy is different from general energy, natural gas energy to inherent strong attributes; natural monopoly industry affects the energy destiny of mankind. Age of gas energy geographical features, must use energy strategy "diversity" to scientific and technological innovation and institutional innovation as the fulcrum, with dynamic alternative energy industry revolution as a way out, to avoid make the world a "gas energy" one-way dependence and polygonal battles, so as to establish low-carbon new world order.

**Keywords:** Energy wealth; Natural gas energy; Energy pricing mechanism.

### INTRODUCTION

Commodity is the blood of industrial, strategic materials, has a strategic position in the modern economic development, play an important role in the field of politics, economy, national defense and diplomacy. Its price fluctuations caused global attention, since 2000, the global crude oil, gold, wheat, corn and other commodity prices rise sharply and record highs. To effectively prevent the negative impact of financial market liquidity to the economy, world's central Banks have adopted the policy of the bail-out, implement positive monetary policy, such as the Us central bank has implemented four round of quantitative easing global liquidity greatly increased global asset prices has gained unprecedented. From the perspective of "the supply and demand",

This dissertation based on the theory of "generalized equilibrium of supply and demand", analyzes the commodity price formation in mathematical and empirical perspective surrounding the core of "generalized equilibrium of supply and demand determine the price of resources", the commodity in the futures market, spot market dynamic equilibrium system. While there still exit two perspectives, the dissertation should expand the study. One is the existing

literature on commodity price slack the unified kernel for interpretation of commodity price. The other is necessary to build a Total Factor Price Model, measuring the weight of all factors in commodity price formation. This is the original intention of writing [1].

### COMMODITY'S NATURE AND PRICE VOLATILITY TRANSFER

The international resource nature and price fluctuations have many aspects. This dissertation argues that the international resource nature including imitation, basicing, storing, irrefutably, unbalance, commodities, monopoly, strategic, financialization, politicalization. The first seven natures is the basic nature of commodity, while the strategic, financialization, politicalization are derived nature. Hos telling model, Supply Demand model is commodity price models; monopoly structure is the market structure of commodity. International political attribute lies in commodity is a resource contributes economic security, political stability and the international status a country, which are used as economic instrument in international relations and strategic weapon to deterrence and sanctions against other countries' to prevent own political and economic interests, "beggary-neighbor" trade policies, military conflicts always

occur. International political events caused the international resource price fluctuations. Commodity financialization means that market participants in the market, in capital appreciation for the purpose of making commodity from productive assets role to speculative assets transition process.

Basic nature, political nature and financial nature determine the complexity of the price formation mechanism. The triple properties exist together. From the history of commodity price fluctuation, commodity attribute the basis of commodity price formation, the political nature is the external shocks to commodity price formation; financial nature (futures, index funds, etc.) is the main tool for international capital to invest in resources. On this basis, this dissertation analyzes price fluctuation of energy, metals and agricultural products respectively. On the track of international energy price fluctuations, market competition, financialization, futures market, and monopoly are the main factors. On the track of international metal price fluctuations, the tight balance of supply demand, dollar index, international politics, and international influence are the main factors on metal prices rise and fall. On the track of international agricultural product price fluctuations, international commodity supply and demand, global wealth rotation, monetary liquidity, international speculation, financial capital, global capital flows, international financial resources attribute uncertainty on the influence of agricultural prices.

#### **GENERALIZED SUPPLY DEMAND EQUILIBRIUM: CONSTRUCTION OF SUPPORT THEORY**

Through analyzes the theory of the "generalized supply demanded equilibrium", Through the analysis of the development of price theory, the equilibrium price is the currency performance of market supply and demand. Since the spring autumn period, the light-weight balance becomes the benchmark of market price, Ricardo, Mill, Marx and Jevons put forward the concept of equilibrium and Count and Marshall, used mathematical method to analysis equilibrium, Walrasian based on the general equilibrium model, made the interpretation the formation and change of the price theory, the development of economic theory has played a huge role in promoting development of theory. Value theory, disequilibrium theory, evolution theory questioned on equilibrium theory respectively from different angles. Value theory mainly illustrates the decisive factor-the nature of the relationship between people in a market economy when product consumed by humans living in long-term equilibrium [2]. Disequilibrium theory point out that there are not exist prices in the market can be infinite possibility, if market is scarce, then the price is not decided by supply demand equilibrium, but determined by the balance of supply and demand.

Disequilibrium, in other words, in fact is a kind of equilibrium, but it is not an equilibrium in the Walrasian general equilibrium, but rather a balance equilibrium exists in real life; It is not equal to the balance of supply and demand, but there is supply and demand is equal under the condition of equilibrium, the equilibrium can be achieved byte number of the quota to achieve equilibrium called quota equilibrium. Marshall pointed out economic dynamics".

This dissertation argues that "supply demand determines prices" is the hard core of equilibrium price theory. Through analysis the power of supply and the demand of market participants in equilibrium price decision, which was a profound "power balance" thought, is the essence of price theory. The price of supply demand theory of need include new elements of the protection zone in its peripheral protection, in order to enhance the explanatory power of the supply and demand equilibrium price theory; we should adjust supply and demand equilibrium price theory timely. So this dissertation is based on "balance of supply demand" perspective, based on the "the balance of supply and demand determine the "generalized supply demand price" hard core, using "equilibrium" method, build equilibrium and discuss commodity pricing mechanism. Price theory, to comprehensive investigate commodity price volatility research mainly divided into two categories, one is about the market fundamentals, namely the international resource supply, demand, war, and the real economy factors such acclimate, trade policy; the other is the non-market fundamentals, such as speculation, the dollar index. This dissertation revised neo-classical theory assumption that "social person" hypothesis, limited rationality hypothesis, incomplete information hypothesis, analyze the new elements of commodity price: speculative supply demand, inventory supply demand and trade system supply demand. This dissertation called all factors which can affect the commodity's supply in market as "generalized supply", called all factors which can affect the commodity's demand in market as "generalized demand". Commodity price is decided by "generalized supply" and "generalized demand". In the framework of multiple factors and multiple contexts, understand the term rice of supply demand theory" and build "generalized the supply demand equilibrium theory". Then speculative, inventory, trade system, political, and expectations are all becoming the endogenous variables in commodity equilibrium price dynamic function. The function equation is a dynamic and open system, one reason is all kinds of factors in the general supply and demand equilibrium of supply and demand status may change; the other reason is there are new elements to influence the international resource prices [3].

### **ANALYZE "GENERALIZED FACTORS" INFLUENCE ON COMMODITY'S SUPPLY DEMAND**

"General supply and demand factors" effect on the commodity supply and demand. This chapter mainly answers three questions through mathematical model, first is whether market intervention in trade policy and trade system (WTO) can affect commodity equilibrium, the second is whether there is equilibrium in futures contract supply and demand, the third is equilibrium between futures market and spot market.

In particular, under the trade intervention policy only by one country, under the cooperative game trade policy, under the WTO dispute settlement mechanism, the equilibrium is different. The results show that in the short term, beggar-thy-neighbor trade intervention can make international supply and demand imbalance, and under the multi-stage cooperative game and under the WTO system, trade policy interventions has no effect on commodity supply and demand. In reference of KMRW reputation model proposed by Mordehai Milgrom, Roberts and Wilson, 1982, according to the trading behavior characteristic of market participants in futures market, this chapter build static game and dynamic model to analyze the commodity supply demand and its equilibrium solution, it is concluded that the futures market price is decided by institutional investors and retail investors in futures contracts on the balance of supply and demand. Finally, comprehensive futures market and spot market characteristics, this chapter builds a mathematical analysis and geometric shapes, depict the market participants how to implement speculative arbitrage according to expectation under the comprehensive forecast of market, also analyze the equilibrium existence, uniqueness, stability and optima of the equilibrium of supply and demand. And systematic analysis of the various conditions, the international resource markets can balance of supply and demand, so as to realize the consistency of the two market prices.

### **COUNTERMEASURES OF CHINA'S RESOURCE SECURITY BASED ON GENERALIZED SUPPLY DEMAND**

China resources security countermeasures based on the theory of generalized supply and demand equilibrium. All Countries in the world are looking for the chance to obtain the commodity with a reasonable price and commodity security has increasingly become the strategic focus of the world. This dissertation argues that China's security problem is how to answer three questions: one is that can afford, the second is can be available, and the third is can be shipped back. As we all known that China import commodity increasingly, how to accurately grasp the global economic development cycle and world economy pattern

evolution direction, with reasonable price to buy commodity, build commodity strategic framework in the situation of supply and demand of resources, is the current outstanding problems [4].

This dissertation argues that China resources trade should be a "trade and investment" road rather than a "single trade". with the experience of developed countries and practice, implement the national foreign resources "super-sovereign investment development design", change the disadvantage of ownership on resources sovereign into advantages on resources exploitation, from the past single purchase to global investment and development, usage of resources and management resources. International financial attributes to commodity from "production--supply" model of "supply" safe mode into "trade--financial" type "the price" safe mode. The author believes that to build a national strategic level strategic resource safety, the only way is to improve the growing domestic futures market, futures market internationalization road and introducing the QFII system, establish the international resource pricing center [5].

### **CONCLUSION**

Based on the background of the analyzes, "China lost two disputes" means that China is not familiar with international trade rules, also won't apply resources domestic policy alternative trade policy, the top-level design on commodity should include resources exploitation, environmental protection, ecological concept, government reserves and company reserves, rational development and mining. China should have a rational strategic vision, change ideas, reasonable use of WTO mechanism, strengthen the government the top-level design, make two changes, improve the occasion, to establish China's natural resources strategic security: one is the management policy to shift from "trade" to "internal management", the second is on the WTO rules from "learn to obey the law" to "lead the reform". At the same time with the Chinese government should strengthen the relationship, comprehensive coordination of political and economic relations, with the country which have abundance resources, implement "pluralistic, open source, ensure the original way, different approach, strategic reserve, win-win cooperation" to ensure Chinese resource security.

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