A new economic policy tool, reserve commodity bonds

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Abstract: This paper proposes a new policy instrument to regulate the economy: commodity reserve bonds. The deflation during economic crises is primarily caused by insufficient aggregate demand and excessive production capacity. To address this, the government can establish national reserves of easily storable bulk commodities. Bonds can then be issued based on these commodity reserves. On the one hand, this reduces the supply of commodities in the market, causing prices to rebound and alleviating deflation. On the other hand, it increases the government's stockpile of commodities, enabling price stabilization when commodity prices become excessively high. For individuals purchasing commodity reserve bonds, these bonds are tied to specific commodities, serving as a relatively stable asset allocation. Subsequently, we will provide a detailed explanation of the structure of commodity reserve bonds and a theoretical framework for economic adjustments.

Keywords: economic crisis, deflation, bonds.

1. Introduction

During an economic crisis, according to Keynesian economics, the government should increase investment in infrastructure construction to boost aggregate demand. However, such measures often lead to an increase in government debt, and the returns on infrastructure investment may not be sufficient to offset the costs. On the other hand, according to monetarist economics, the government should increase the money supply to enhance liquidity. Nevertheless, this approach may result in significant inflationary pressures.

This paper proposes a new policy tool for economic regulation: the issuance of commodity reserve bonds by the government. Economic crises are often accompanied by deflation, which results from insufficient aggregate demand and excess production capacity. To address this, the government can establish national reserves of easily storable bulk commodities. Bonds can then be issued based on these commodity reserves. Such a policy has several advantages. First, it reduces the supply of commodities in the market, pushing prices upward and alleviating deflationary pressures. Second, it increases the national stockpile of essential commodities, which can be used to stabilize prices when commodity prices become excessively high. Third, for individuals or institutions purchasing these commodity reserve bonds, the bonds are backed by specific commodities, making them a relatively stable and value-preserving asset allocation. In the following sections, we will provide a detailed explanation of the structure of commodity reserve bonds and outline a comprehensive economic adjustment theory based on this tool.

2. Reasons for the economic crisis

2.1 Existing economic theories

Existing economic theories suggest that economic crises are an inherent part of the economic cycle, characterized by the cyclical fluctuations of boom, recession, depression, and recovery in a market economy. The causes of economic cycles can be broadly attributed to financial system instability, imbalances in international trade, policy missteps, external shocks, and market expectations. Among these, financial system instability stands out as a key cause and amplifier of economic crises, particularly in highly financialized modern economies. Factors such as excessive credit expansion, asset bubbles, and monetary policy errors are potential triggers of economic crises. For example, the root cause of the 2008 global financial crisis was the subprime mortgage crisis in the United States. Trade imbalances can also lead to economic crises, particularly through issues like trade deficits and uncontrolled capital flows. For instance, the 1997 Asian financial crisis was triggered by rapid capital inflows and subsequent withdrawals, resulting in the sharp depreciation of currencies in many Southeast Asian countries. Policy missteps and external shocks, such as excessive government spending or geopolitical conflicts, are additional factors that can cause economic crises. Notable examples of economic crises include the Great Depression of 1929, the Asian financial crisis of 1997, and the global financial crisis of 2008.

2.2 Methods for pricing monetary commodities

This paper attempts to propose a new approach to pricing goods through the lens of monetary economics in order to explain the root causes of economic crises.

The Initial Stage of the Economy. In the early stages of an economy (e.g., post-war reconstruction), individuals create goods through labor, and these goods are exchanged using money. This establishes a balanced relationship between production and consumption.

The Emergence of Problems. As the economy develops, the production of goods increases, and workers accumulate large amounts of money. However, the pricing of goods is not

based on the total amount of money and the total quantity of goods but instead relies on the available circulating money and the total quantity of goods. This creates a shortage of circulating money relative to the total quantity of goods, leading to deflation (a decline in the prices of goods).

Consequences of Deflation. When the prices of goods fall too low, producers are unable to recover their production costs, resulting in production stagnation. Even though there may be no issues with the availability of resources, technology, or other production factors, the flawed pricing mechanism prevents production from continuing.

Triggering Conditions. Economic crises are often triggered by the collapse of economic bubbles, which cause significant losses for individuals, a decline in consumer demand, and a reduction in circulating money. The shortage of circulating money further drives down prices, causing producers to incur losses and eventually halting production.

The Fundamental Issue. The root cause of the crisis lies in the pricing mechanism. Specifically, the cost of production exceeds the price of goods as determined by the amount of circulating money, rather than by any objective shortage of material conditions.

The above has provided an explanation of economic crises from the perspective of monetary commodity pricing.

Next, we will discuss circulating money. In economics, the velocity of money circulation determines the actual purchasing power of circulating money. Even if the total money supply remains constant, a decline in the velocity of money circulation (e.g., when people reduce consumption and save more money) effectively reduces the amount of circulating money, which in turn leads to a decrease in commodity prices (deflation).

Following this, we will discuss overproduction and insufficient demand. Overproduction of goods is a key cause of economic crises, but we argue that the essence of "overproduction" is not a scarcity of resources but rather a problem in the pricing mechanism (insufficient circulating money). This is, in fact, consistent with the economic theory of "insufficient effective demand."

Then we provide a discussion on pricing mechanisms, emphasizing that the root of the crisis lies in the pricing mechanism itself rather than the constraints of objective material conditions. This can be further understood from the following perspectives. First, the non-material nature of economic crises: In many economic crises, material resources (such as labor, raw materials, technology, etc.) have not diminished. The essence of the crisis lies in issues related to distribution and circulation mechanisms. The insufficiency of money as a medium of exchange (or a decline in its velocity of circulation) prevents the market from effectively matching production with consumption. Second, the distortion of price signals: In a market economy, prices serve as critical signals for resource allocation. When the pricing mechanism is distorted due to a shortage of circulating money, prices can no longer accurately reflect supply and demand relationships, leading to either overproduction or underproduction. The role of monetary policy is as follows: In modern economies, central banks address issues within the pricing mechanism by adjusting the money supply and interest rates. For example, during a crisis, increasing the money supply (such as through quantitative easing) can alleviate the shortage of circulating money.

2.3 Similar economic theories

Many economic theories offer analyses similar to ours regarding economic crises; however, our approach places greater emphasis on the role of pricing mechanisms as the root cause of economic crises.

Keynesian Theory of Insufficient Effective Demand. The Keynesian theory of insufficient effective demand posits that the root cause of economic crises lies in inadequate aggregate demand, meaning that the purchasing power of consumers and businesses is insufficient to absorb the goods available in the market. Keynes also argued that crises do not stem from material constraints but rather from issues related to monetary circulation and insufficient demand.

Monetary Supply and Economic Fluctuations. Monetarism, proposed by economist Milton Friedman, identifies the money supply as the primary driver of economic fluctuations. This theory holds that the fundamental cause of economic crises is either an inadequate or excessive supply of money.

The Contradiction Between Overproduction and Capital Accumulation in Marxism. Marxism posits that the essence of profit-seeking in capitalist economies inherently leads to production exceeding the actual demand in the market, resulting in overproduction. The root cause of overproduction lies in the insufficient income of workers, i.e., inadequate purchasing power, which prevents goods from being sold. With the accumulation of capital and advancements in technology, production efficiency improves. However, workers' wages, in terms of relative purchasing power, stagnate or even decline, exacerbating the contradiction between production and purchasing power.

Debt-Deflation Theory. The debt-deflation theory, proposed by economist Irving Fisher, explains how economic crises are exacerbated by the interaction between debt and deflation. According to this theory, the trigger for a crisis is excessive debt. When an asset bubble bursts, businesses and individuals reduce their spending to repay debts, leading to a decline in demand. Falling prices (deflation) further worsen the debt burden, as the real value (in terms of purchasing power) of the debt increases.

3. The impact of wealth gap on production stagnation

In reality, income inequality can lead to social instability and economic problems. Here, we propose a hypothesis and discuss whether income inequality could contribute to production stagnation under this assumption. The results discussed here apply only within the context of this hypothesis and not to real-world scenarios. We assume that all money and all goods in society participate in the pricing process, as opposed to the scenario where only a small portion of liquid money interacts with all goods in pricing. Without considering social stability, income inequality may not even be related to production stagnation.

First, we examine the relationship between income inequality and the pricing mechanism. Even if income inequality becomes extremely severe, as long as all money and goods jointly participate in the pricing process, the prices of goods can remain reasonable, and the economic system can continue to function smoothly. This is because, even when wealth is concentrated in the hands of a few, the majority of workers can still earn income through production and sustain economic circulation through the exchange of goods, just as they would without personal wealth. Income inequality, in itself, does not necessarily lead to economic crises. The true cause of such crises lies in the breakdown of the pricing mechanism.

Next, we discuss the economic logic when the gap between the rich and the poor becomes extreme. If the wealthy control the vast majority of wealth and goods, while the poor hold almost no wealth, this situation is similar to the state where "nobody has wealth at the beginning of an economy." In such a case, laborers produce goods through their work, and as long as those goods are reasonably priced, exchanges can be completed, thereby promoting economic circulation.

We then analyze the decisive role of the pricing mechanism. If an economic crisis occurs, its root cause is not the wealth gap itself but problems with the pricing mechanism. In reality, a crisis manifests as either a shortage of circulating currency or distorted prices, making it impossible for producers to sell goods at reasonable prices, which ultimately leads to production stagnation.

In practice, however, a significant wealth gap can result in production stagnation. First, a wide wealth gap may lead to social instability, which disrupts the production of goods. Second, when wealth is highly concentrated among a small number of wealthy individuals, they are more inclined to preserve their wealth in monetary form, resulting in deflation in the broader market.

4. The process of economic crisis

Based on the method of commodity pricing by currency, we analyze the changes in deflation, commodity flows, wealth redistribution, and inflation during an economic crisis. The process following the onset of an economic crisis can be divided into the following stages:

Stage 1 is economic crisis and deflation. The key characteristics of Stage 1 are as follows: the supply of circulating currency decreases, leaving only a small amount of currency and a large quantity of goods involved in pricing. Commodity prices fall to excessively low levels, making it impossible for producers to cover costs (as prices fall below production costs), leading to production halts. As production stagnates, unemployment rises, further exacerbating the shortage of circulating currency and the decline in demand, creating a vicious cycle of deflation.

Stage 2 is wealth transfer (wealthy individuals acquire goods at low prices). The key characteristics of Stage 2 are as follows: under prolonged deflationary conditions, wealthy individuals leverage their monetary advantage to purchase large quantities of goods and assets at lower prices. Due to deflation, the prices of goods and assets continue to decline, enabling the wealthy to accumulate wealth at extremely low costs. As a result, the wealthy gain control over a greater share of resources, while ordinary workers, lacking currency and productive capacity, are further excluded from the economic cycle.

Stage 3 is decline in goods and gradual economic recovery. The key characteristics of Stage 3 are as follows: as goods are gradually consumed or purchased, the quantity of goods in the market declines. After production has stagnated, the supply-demand dynamics in the market begin to change, leading to a rebound in commodity prices and the gradual recovery of the economy. However, by this stage, the distribution of societal wealth has become severely imbalanced, with the wealthy having accumulated a significant concentration of resources.

Stage 4 is inflation. The key characteristics of Stage 4 are as follows: as the economy recovers, circulating currency re-enters the commodity pricing system. At this point, wealthy individuals, having accumulated large amounts of unused funds during the deflationary period, begin injecting these funds into the market, leading to increased demand. With the rapid increase in circulating currency, commodity prices rise sharply, resulting in inflation or even hyperinflation.

5. Keynesianism's handling of economic crises

Keynesian economics posits that aggregate demand (the sum of consumption, investment, government spending, and net exports) is the central determinant of the level of economic activity. When aggregate demand is insufficient, the economy is prone to recessions or crises.

Aggregate Demand = Consumption (C) + Investment (I) + Government Spending (G) + Net Exports (X-M)

Keynesian theory argues that the primary cause of economic crises is insufficient aggregate demand. Factors contributing to this insufficiency include inadequate consumption, underinvestment, liquidity traps, and unemployment, among others.

Keynesian Economics proposes a series of methods to address economic crises, with its core idea being that government intervention can compensate for market shortcomings and restore aggregate demand. Keynes argued that during an economic crisis, the most effective policy is expansionary fiscal policy, whereby the government stimulates aggregate demand through increased spending or tax cuts. Specific measures include increased government investment, provision of social security and subsidies, and tax reductions. Although Keynes placed greater emphasis on fiscal policy, he also acknowledged the importance of monetary policy, particularly in the early stages of a crisis. Specific monetary measures include lowering interest rates and increasing the money supply.

However, Keynesian measures have several limitations. The first is the issue of fiscal deficits. Prolonged implementation of expansionary fiscal policies can lead to excessive government debt, potentially hindering long-term economic growth. The second limitation is the issue of time lags. The

implementation of government spending often involves delays, which may result in missing the optimal window for intervention. Lastly, there is the risk of inflation. If stimulus policies are overused, they may lead to inflation or even hyperinflation.

6. The relationship between inflation and production

Firstly, we discuss the relationship between inflation and production. Inflation has a stimulating effect on production. During periods of inflation, commodity prices generally rise, while the costs of production for laborers (such as wages and raw materials) may lag behind the increase in commodity prices. Under such circumstances, producers can achieve higher profit margins, thereby maintaining or even expanding production. For instance, if firms anticipate that commodity prices will continue to rise, they will still have an incentive to produce as long as the sales prices can cover costs and generate profits, even if raw material prices increase.

Next, we analyze the impact of inflation on investment behaviors. We argue that if inflation becomes excessively high, producers tend to reduce large-scale long-term investments and focus more on short-term investments. The first reason is the uncertainty of price expectations. During periods of high inflation, prices change rapidly, making it difficult for producers to predict future costs and sales prices, which increases the uncertainty of investments. As a result, firms are more likely to reduce long-term investments and shift toward short-term investments or speculative activities. The second reason is the flow of capital into "hard assets." During periods of high inflation, due to currency depreciation, businesses and individuals are more inclined to allocate funds into "value-preserving" assets (such as real estate, gold, and foreign currencies) rather than productive investments. This further reduces the long-term growth potential of the economy.

Then, we discuss the issue of wealth transfer during economic crises. We argue that both inflation and deflation can lead to wealth transfer and may exacerbate income inequality. During inflation, wealth transfer often exhibits the following characteristics: the wealthy typically have access to better information channels, allowing them to anticipate inflationary policies and take preemptive measures. For instance, when the government announces monetary easing ("flooding the market with liquidity"), the wealthy may convert their monetary assets into real estate, stocks, or commodities (such as oil and gold) in advance. When inflation occurs, the prices of these assets rise rapidly, while currency depreciation erodes the purchasing power of ordinary workers' cash, further concentrating wealth in the hands of the wealthy. In deflation, wealth transfer has distinct characteristics: the wealthy take advantage of low-priced assets to expand their wealth. During deflation, the prices of goods and assets fall, market demand contracts, and many small and medium-sized businesses, as well as ordinary workers, may be forced to liquidate assets (such as real estate or factories) to repay debts. The wealthy, with greater cash reserves or access to low-cost financing, can acquire these assets in large quantities when prices are at their lowest. As the economy recovers and asset prices rebound, the wealthy reap substantial gains.

7. Reserve commodity bonds

7.1 Details

Based on the reasons behind commodity pricing in monetary terms, during an economic crisis, the circulation of currency in the market decreases while the quantity of goods in the market increases, leading to deflation. However, if we price goods using the total amount of currency and the total amount of goods, the overall price level of goods does not change. This is because a potential solution is to use stored currency to purchase goods, thereby involving all currency and goods in the pricing process. To achieve this, we propose a mechanism utilizing "reserve commodity bonds."

Reserve commodity bonds are a type of bond issued based on actual commodity reserves. Their basic function is similar to government bonds, but their value is backed by tangible goods (such as energy, food, precious metals, etc.) rather than solely relying on government credit.

The main characteristics of reserve commodity bonds are as follows. Commodity Linkage: The value of the bond is tied to a predetermined basket of reserve commodities (such as oil, gold, grains, etc.). Bondholders have the option to redeem the bond at maturity either in currency or in the underlying commodities. Fixed Income: The bond provides a fixed income similar to government bonds (e.g., an annual interest rate of 2%-3%), serving as compensation for wealthy individuals holding the bond. Value Preservation: Backed by reserves of actual commodities, the bond offers a safeguard against inflation or economic crises, providing affluent individuals with a risk-resistant asset allocation strategy. Flexibility: Bondholders can freely trade the bonds on the secondary market, thereby meeting their liquidity needs.

The operational mechanism of reserve commodity bonds is as follows. Bond Issuance: The government issues bonds backed by reserve commodities. The value of each bond is linked to a specific quantity of reserve commodities (e.g., 1 bond equals 10 kilograms of wheat + 1 barrel of oil + 0.1 grams of gold). The total issuance of bonds is aligned with the total scale of the national reserve commodities, ensuring that the bonds are adequately backed by tangible assets. Purchase Phase: Wealthy individuals use their excess money to purchase these bonds, effectively converting their currency into an indirect holding of reserve commodities. After purchasing the bonds, these individuals acquire a value-preserving financial instrument while simultaneously supporting the government’s reserve strategy. Maturity Options: Upon maturity, bondholders have two choices. They can either redeem the bonds for cash at the current market price (similar to the cash redemption mechanism of traditional government bonds) or opt for redemption in physical commodities, receiving a combination of reserve commodities equivalent to the bond’s value based on market prices. Secondary Market Trading: The bonds are freely tradable in the secondary market, allowing holders to sell their bonds at any time to regain liquidity.

Reserve Commodity Bonds combine the advantages of government bonds and physical reserve commodities, demonstrating unique benefits in several aspects. The appeal of reserve commodity bonds to wealthy individuals can be summarized as follows. Asset Preservation and Appreciation: Since the bonds are tied to actual commodities, their value is less susceptible to inflation. Wealthy individuals can use these bonds to preserve their wealth and mitigate the risks of currency depreciation. Flexibility and Liquidity: These bonds can be traded on secondary markets, allowing wealthy investors to sell them at any time to access liquidity, without the need to directly hold perishable or difficult-to-store commodities. Fixed Income: Reserve commodity bonds offer fixed interest rates comparable to government bonds (e.g., 2%-3%), providing a stable cash flow return for wealthy investors.

The benefits of reserve commodity bonds for governments are as follows. Increasing Commodity Reserves: Through the issuance of these bonds, governments can attract funds from wealthy individuals to build larger commodity reserve pools, enabling them to better respond to future market fluctuations or crises. Easing Deflationary Pressures: When wealthy individuals purchase these bonds, the corresponding commodities are stored as reserves. This reduces the supply of goods in the market while maintaining the balance between goods and circulating currency, thereby helping prices recover. Enhancing State Regulatory Capacity: Reserve commodity bonds enable governments to regulate commodity supply and demand more flexibly. For instance, governments can release reserve commodities when market prices are too high or increase reserves when prices are too low.

7.2 Similar tools

There are several tools in modern economic systems that resemble reserve commodity bonds. Detailed examples are provided below:

Commodity-Linked Bonds. Commodity-linked bonds are financial instruments that tie the bond's value to the price of specific commodities. The returns or principal of these bonds fluctuate based on the price changes of specific commodities, such as gold, oil, or agricultural products. For instance, India's Sovereign Gold Bonds: These bonds, issued by the Indian government, are priced in gold. Investors receive a fixed interest rate and can redeem the bonds at maturity for gold or an equivalent amount in currency. This type of bond aims to reduce demand for physical gold in the market while offering investors a tool to preserve wealth. Oil-Linked Bonds: Some oil-producing countries, such as Venezuela, have issued oil-linked bonds whose values are tied to oil prices. These bonds are typically used to attract foreign investment while leveraging oil resources as collateral.

Strategic Commodity Reserve Policies. Many countries establish strategic commodity reserves to address market crises, price volatility, or natural disasters. These reserves typically include essential commodities such as grains, oil, natural gas, and metals. For example, the U.S. Strategic Petroleum Reserve: The United States maintains a significant stockpile of crude oil to mitigate severe price fluctuations or energy crises. When oil prices are excessively high, the government releases reserves to stabilize prices. Conversely, when prices are low, the government increases reserves to support market stability. China's Grain and Energy Reserves: The Chinese government maintains long-term reserves of grain, oil, and strategic resources like rare earth metals. These reserves are used to regulate market supply and demand and to respond to emergencies or unexpected events.

Special Drawing Rights (SDR). Special Drawing Rights (SDR) is an international reserve asset created by the International Monetary Fund (IMF). Its value is determined by a basket of currencies, including the US dollar, euro, Chinese renminbi, Japanese yen, and British pound. SDR can be regarded as a "bond pegged to multiple assets."

Inflation-Linked Bonds. Next are inflation-linked bonds. The principal and interest of inflation-linked bonds are tied to an inflation index, with their value adjusting according to the inflation rate. For example, the United States issues Treasury Inflation-Protected Securities (TIPS). These bonds, issued by the U.S. Treasury, have a principal that automatically adjusts according to changes in the Consumer Price Index (CPI), thereby protecting investors from the erosion of inflation.

The purpose of these bond instruments is primarily to hedge against inflation or to enhance strategic reserves, which differs slightly from the concept of reserve commodity bonds discussed in this paper. Reserve commodity bonds are designed to use the wealth stored by affluent individuals to massively purchase excess commodities in the market, thereby mitigating deflation. The government can utilize a small amount of initial capital to continuously acquire surplus commodities in the market while simultaneously issuing bonds. In this process, the government does not increase its debt, as the monetary value is effectively anchored in the form of reserve commodities. Similarly, wealthy individuals can independently construct comparable reserve commodity systems or issue corresponding bonds, achieving the same goal of reducing the surplus of commodities in the market.

7.3 The cost of reserve commodity bonds

We estimate the cost of using reserve commodity bonds as a means to overcome an economic crisis and deflation, or the financial investment required by the government. We need to analyze the following factors. First is the scale of bond issuance and the scale of commodity purchases. Suppose the scale of government commodity purchases and bond issuance reaches a level comparable to a country's GDP (measured as a proportion of GDP). This implies that the total amount of bonds issued and the total value of commodities purchased would approximate the country's GDP. Next is the interest rate on the bonds. When the government issues bonds, it must pay interest, and the interest rate determines the long-term cost to the government. Then, there are storage costs and commodity depreciation. The bulk commodities purchased by the government need to be stored in warehouses, and storage costs include warehousing fees, insurance expenses, and natural depreciation of the commodities. Finally, there is the macroeconomic cycle. The government employs a "buy low, sell high" strategy, purchasing commodities at low prices during deflationary periods and selling them at higher prices

during economic recovery or even inflationary periods. The success of this operation depends on the government's ability to accurately assess and predict macroeconomic cycles.

To estimate the specific costs, we can construct a simple model broken down into the following steps:

Step 1 is determining the scale of bond issuance and the amount of goods purchased. The first step is to determine the scale of bond issuance and the amount of goods the government needs to purchase. Suppose that during an economic crisis, in order to counteract the effects of deflation, the government needs to stimulate aggregate demand. The total amount of goods purchased is assumed to be a certain percentage of GDP (set at 10%). Let the GDP of a given country be denoted as Y (e.g., Y = $1 trillion). The amount of goods purchased by the government is represented as $M = \alpha \times Y$ ($100 billion), where α is the proportion of government purchases to GDP (e.g., $\alpha = 0.1$, representing 10%). Simultaneously, the government issues bonds of an equivalent size, with the face value of the bonds denoted as $B = M$.

Step 2 is calculating debt interest costs. Next, we calculate the interest costs of the debt. Suppose the annual interest rate of the bonds is r (set at 3%), and the maturity period of the bonds is T years (set at 5 years). Then, the annual interest cost incurred by the government is as follows:

$$C_{\text{interest}} = B \times r = 1000 \times 0.03 = \$3 \text{ billion per year}$$

The total interest cost by the time the bonds mature is calculated as:

$$C_{\text{total interest}} = B \times r \times T = \$15 \text{ billion}$$

Step 3 is calculating the storage costs of goods. The storage of bulk commodities purchased by the government incurs direct warehousing costs and natural depreciation costs. Assuming the annual storage cost accounts for a proportion β (set as 0.01) of the total value of the goods and the storage period is T years, the total storage cost can be calculated as follows:

$$C_{\text{storage}} = M \times \beta \times T = 1000 \times 0.01 \times 5 = \$5 \text{ billion}$$

Step 4 is estimating the returns from buying low and selling high. The revenue generated by the government from eventually selling the goods at a higher price can be expressed by the following formula:

$$R_{\text{sell}} = M \times (1 + g) = 1000 \times 1.2 = \$120 \text{ billion}$$

Where g represents the rate of price increase (e.g., $g = 0.2$ indicates a 20% price increase).

Step 5 is comprehensive cost calculation. The comprehensive cost (or net cost) is calculated as the government's total costs minus the revenue from selling the goods:

$$C_{\text{net}} = C_{\text{total interest}} + C_{\text{storage}} - (R_{\text{sell}} - M)$$

$$C_{\text{net}} = 150 + 50 - (1200 - 1000 = 0$$

Through the "buy low, sell high" strategy, the government ultimately manages to fully cover its costs. The critical factor determining the success of this strategy lies in whether the government can accurately predict the troughs and peaks of commodity prices.

8. Stagflation and economic crisis

Stagflation is a distinctive phenomenon in economics, referring to an economic state where stagnation in growth and inflation occur simultaneously. Specifically, stagflation is characterized by the simultaneous presence of three conditions within an economy: stagnation in economic growth, high unemployment rates, and elevated inflation levels. This phenomenon is particularly unique in economic theory because, under normal circumstances, economic stagnation is typically associated with low inflation, while high inflation is often accompanied by robust economic growth.

The occurrence of stagflation is usually the result of a combination of multiple factors. The following are some of the primary causes: cost-push stagflation, demand-pull stagflation, structural factors, policy missteps, and external shocks. Below is a detailed explanation of these causes. Cost-Push Stagflation: This occurs when rising production costs lead to higher prices, reducing corporate profits and slowing down economic activity. For example, a sharp increase in international oil prices can raise costs across multiple industries such as transportation, production, and energy (as seen during the oil crisis of the 1970s). Demand-Pull Stagflation: This arises when excessively loose monetary or fiscal policies cause aggregate demand to grow too quickly, outpacing the supply side's ability to keep up. Structural Factors: Stagflation driven by structural issues may include imbalances in industrial structure, rigidities in the labor market, technological stagnation, or insufficient investment. Each of these factors contributes to the complex dynamics of stagflation, making it a particularly challenging issue for policymakers and economists to address.

We believe that stagflation is an economic issue distinct from both inflation and deflation. This problem arises from disruptions in a specific segment of the production chain (for instance, a shortage of oil leading to production bottlenecks). The inflation and stagnation that occur during this period merely reflect a return to the normal price levels and economic growth rates that correspond to the constrained production conditions. In response to this, the government's priority should be to address the root causes of the production disruption. If these disruptions cannot be resolved due to objective factors, we must redefine the resulting price levels and economic growth rates as a new equilibrium or "normal" state of development. Within this framework, we can then adjust for inflation or deflation accordingly.

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