



EDVINCIBLE
HOLDINGS

PTE LTD

AGRICULTURAL COMMODITY FACT SHEET

Helping match demand with supply.

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WHY ARE AGRICULTURAL COMMODITIES IMPORTANT?

Agricultural commodities are staple crops and animals produced or raised on farms or plantations. Most agricultural commodities such as grains, livestock and dairy provide a source of food for people and animals across the globe. However, some agricultural commodities have purely industrial applications. The building and furniture industries use lumber from trees, while manufacturers in several sectors use latex from the rubber tree. Wool from sheep provides fabric for the clothing industry and lanolin for skin-and-hair-care products.

Some agricultural commodities serve as both a source of food and an industrial ingredient. Both humans and animals consume corn, but the commodity is also an important ingredient in fuel production. Similarly, humans eat the beef of cows, while a variety of industries use beef hide, fats and bones to create products. Virtually every living being on the planet depends on the agricultural industry in one way or another. We eat the grains, fruits, vegetables and livestock that farmers produce; build the frames of our houses from lumber; make clothes from cotton and wool; and ride in cars with tires made from rubber.

In addition, over 1.3 billion people – nearly 20% of the global population – work in farming. In some regions of the world, such as South Asia and Sub-Saharan Africa, farming employs more people than any other industry. The global impact of the agricultural industry is enormous. According to the Food and Agricultural Organization of the United Nations, the economic value of the agriculture industry, in constant 2010 dollars, is more than \$3 trillion.

With the world population expected to climb from 7.5 billion to 11.8 billion by 2100, agricultural commodities are likely to play an even bigger role in the decades ahead.

WHAT ARE THE DIFFERENT AGRICULTURAL COMMODITIES?

Agricultural commodities fall into one of six categories:

1. Cereal Grains
2. Oilseed
3. Meat
4. Dairy
5. Other Soft Commodities

Cereal Grains

Farmers grow these commodities as (a) a food source for humans, (b) a food source for animals and (c) as a feedstock for fuels (in some cases).



The most common grain commodities include the following:

1. Wheat
2. Corn
3. Oats
4. Barley
5. Rough Rice

Grain commodities often serve similar purposes. For example, corn, oats and barley all function as food sources for livestock. Depending on price, farmers will choose one grain over the other. As a result, most grain commodities have a strong price relationship with one another. Traders monitor the spread between grain prices to determine the relative values of one grain versus another.

Meat

Meat commodities include (a) live animals raised for meat, hide, organs, bones and hooves and (b) cuts of meat produced during the butchering of animals:

1. Feeder Cattle
2. Live Cattle
3. Lean Hogs
4. Pork Bellies



Dairy

Dairy commodities include milk, butter, whey and cheese. Markets for these commodities date back to the 19th century when traders organized the Chicago Butter and Egg Board. Today these products trade on the Chicago Mercantile Exchange (CME).

Other Soft Commodities

Soft commodities refer to commodities that are farmed rather than mined. However, most commodity traders classify cereal grains, oilseeds, dairy and meat separately.

The remaining soft commodities all have developed and liquid global markets:

1. Cocoa
2. Coffee
3. Frozen Concentrated Orange Juice (FCOJ)
4. Sugar

Miscellaneous Agricultural Commodities

Some commodities have well-developed global markets, but don't fit easily into the above categories:

1. Lumber
2. Rubber
3. Wool

Population Growth

By 2040, the world's population is expected to exceed 9 billion. Demographers forecast that three-quarters of the world will reside in Asia or Africa at this time. Not only will population increase, but people will be richer. Most analysts agree that the greatest wealth gains will be in the developing world where people will migrate from rural areas into cities. Wealthier global citizens will mean more demand for agricultural products.

These trends could place strains on agricultural resources. Innovations in irrigation, biogenetics and land usage are among the many advances that will be needed to help feed a growing population. These innovations could produce new investment opportunities.

Agricultural Productivity

Emerging market economies have been growing at a much faster pace than developed economies over the last decade, and this trend is likely to continue. **Seven countries – Brazil, China, India, Indonesia, Mexico, Russia, and Turkey – accounted for 24% of world economic output between 2010 and 2016.** These countries comprised only 14% of global output in the 1990s.

However, despite these gains, productivity in agriculture is lagging badly in the developing world. A report by the Global Harvest Initiative (GHI) shows that productivity by small farmers in the lowest-income countries is growing at 1.3%. The average rate of productivity growth across all countries is 1.73%, which is below the 1.75% level needed to keep up with global demand.

To keep up with the demands of a growing world population, the agriculture sector in the developing world will need to increase its efficiency. Investors may find opportunities to invest in industries that help modernize small farms.

Technology and Big Data

Technology is one way that farms can drive productivity gains. Technology and Big Data are increasingly driving decisions by farmers. Crop monitoring technologies, apps that tell farmers the optimal time and place to plant crops and advanced DNA testing of livestock are among the many technological innovations in farming.

Modern farms will need to integrate the latest technologies into their operations in order to boost productivity and take on competition. However, in many areas of the developing and some areas of the developed world, there is a severe skills gap.

In order to bridge this gap, farms of the future will have to recruit an educated and technology-savvy workforce. Investors may find opportunities to invest both in the technology that farmers use and the human resources to help them employ it.

| BARLEY



WHY IS BARLEY VALUABLE?

Barley is a cereal grain that contains many important nutrients and vitamins. It is characterized by its rich nutty flavor and chewy consistency. Barley is one of the oldest grown cereal grains. Historians believe its origins trace to Egypt, Ethiopia, the Near East or Tibet, but the exact location is debatable. Middle Eastern farmers grew barley prior to 10,000 BC, and China began cultivating the crop around 1,000 BC.

Today barley serves as an important food source for humans and animals and a key ingredient in some alcoholic beverages. This versatility makes it a vital grain commodity in international markets.

HOW IS BARLEY GROWN?

Barley grows best in environments with cool ground temperatures. Barley farmers plant their crop in two growing seasons – winter and spring. October is the ideal month to plant winter barley, while January is the best month for the spring variety.

Barley requires well-drained soil and full sunlight to grow. Farmers grow crops in rows about 10 to 12 inches apart. Spring barley ripens in about 60 to 70 days, while fall barley ripens about 60 days after spring growth begins. This relatively quick ripening process makes barley ideally suited for crop rotations with other grains such as wheat.

TOP 3 USES OF BARLEY

1. Human Food Source

Barley can be prepared a number of different ways:

- Cooked in soups, stews, casseroles and breakfast items such as cereals, waffles and pancakes.
- Added as an ingredient in salads.
- Barley meal is used in porridges in Scotland.
- Barley flour is used for baking.

2. Beverages

Barley is a key ingredient in whiskey and beer production. Barley is also used to make flavored waters and teas.

3. Animal Feed

Barley is used as feed for livestock. In northern climates such as Canada, parts of Europe and the northern United States, barley is more popular than corn as animal feed. Barley is also used to make high-protein fish food.

COMPOSITION OF BARLEY

Barley is the world's most nutritional crop and is recommended for children during their growing up stage. This is because barley contains many elements that are rich sources of health and energy. The composition of barley, excluding the percentage of salt, gives a general idea about its uses in every day life. Barley contains about 15% water, 12.98% of nitrous compounds, 6.74% of gum, 3.2 % of sugar, 60% (approx.) of starch and 2.2% of fat.

BENEFITS OF BARLEY

Barley is considered to be the most nutritional cereal, comprising of the right quantity of all the vital nutrients. Fiber contains two types of nutrients, namely, soluble and insoluble fiber. The soluble fiber helps in lowering the level of cholesterol by eliminating the fatty acids, while the insoluble fiber keeps the digestive system in a proper order, thereby avoiding the risk of dreadful diseases like colon cancer. Pearl barley is a rich source of protein, fiber and other nutrients, and helps in maintaining health and vitality. Barley water is known to have many medicinal properties and helps in quick healing of many diseases and ailments.

The carbohydrates present in barley help in the regulation of the glucose level. Since barley has fiber levels, five times more than that of the other whole grains, it helps in steadying the sugar level as well. Barley is filled with many important nutrients like Vitamin B, Vitamin E and folic acid. Another major benefit of having barley is that it helps in reducing the body weight, as it makes a food appetite suppressant, making one feel filled and satisfied.

Barley has many health benefits, which account for its popularity as a food source in many parts of the world. In addition to containing many nutrients including manganese, molybdenum, selenium and B vitamins, barley consumption provides specific benefits:

1. Lowers Cholesterol
2. Provides intestinal protection
3. Protects against atherosclerosis
4. Provides cardiovascular benefits
5. Substantially lowers risk of type 2 diabetes
6. Prevents gallstones
7. Protects women against postmenopausal breast cancer

WHAT DRIVES THE PRICE OF BARLEY?

Global Production

The global supply of barley is a key determinant of its price. Political factors, such as crop subsidies in certain countries can have a significant effect on prices. If governments in key suppliers such as the European Union decide to end subsidies of major agricultural commodities, then farmers will shift their production accordingly.

The US Dollar

The US currency is the world's reserve currency. As a result, barley and other agricultural commodities are quoted in US dollars. **Barley producers receive fewer dollars for their product when the US currency is strong and more dollars when the currency is weak.** Factors such as US interest rates, trade surpluses/deficits, unemployment and GDP can all impact the value of the dollar versus other currencies.

Emerging Market Demand

A substantial amount of import demand for barley comes from China and Middle Eastern countries. As the Chinese economy expands, its demand for agricultural commodities will grow. Similarly, India and emerging countries in Africa and the Middle East will require more food to feed their people as their economies grow. **As emerging market countries grow wealthier, their consumption of meat will likely increase. Since barley is used as livestock feed, its price should respond favorably.** Of course, if emerging economies suffer economic setbacks, then barley prices could decline.

Substitution Effect

Barley competes with other grains such as wheat and corn as dietary staples. If the price of barley rises significantly higher than these other grains, then consumer preferences might shift toward consuming lower priced alternatives. Of course, if barley prices are significantly lower than competing grains, then consumers might increase their barley consumption. These changes in demand can impact barley prices.

Weather

Weather patterns can have a significant effect on crop prices, and barley is no exception. Barley grows best in cool, dry regions. Extreme heat, extreme cold or excessive rainfall could limit production and potentially send prices for barley much higher.

HEALTH NEWS

Barley has received considerable positive attention for its health benefits. Unlike other agricultural commodities such as soybeans, barley has remained free from negative publicity from the medical community. As consumers continue to become more health conscious, barley consumption could rise in many regions throughout the world.

WHAT DRIVES THE PRICE OF BARLEY?

Inflation and Weak Dollar Hedge

Investing in barley is a way to bet on a weak US dollar and higher inflation. Agricultural commodities such as barley are priced in US dollars, so the performance of the world's largest economy plays a crucial role in their pricing. The US Federal Reserve Bank has kept interest rates low and the US dollar weak. US central bankers are likely to continue these policies to support consumer borrowing and spending. **A weak dollar could stoke inflation concerns and bolster barley prices.**

Bet on Demand Growth

Barley is poised to benefit from strong global growth, especially in emerging market economies. The demand for barley in livestock feed, beer production and healthy foods should grow as the developing world becomes richer. Demand in the European Union and other Western economies could also outstrip supply in the coming years. Factors such as healthy eating could drive this demand.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as barley provide traders with a way to diversify and reduce the overall risk of their portfolios.

SHOULD I INVEST IN BARLEY?

Traders who want exposure to barley should consider purchasing a basket of commodities that includes other agricultural staples such as wheat, corn, soybeans and sugar. For additional diversification, they should also consider buying metals and energy commodities. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds overall diversification to a stock and bond portfolio. There are two specific trends that could raise barley prices in the years ahead:

Emerging Market Demand

The development of emerging economies could boost barley demand. Middle Eastern countries and China already import a significant amount of barley, and this demand could grow. Demand for livestock feed, beer, and healthy food could be the catalysts for this growth.

Climate Change

Global warming trends have the potential to wreak havoc on the production of many different crops including barley. **If recent weather patterns continue, the world's supply of food may not be able to meet demand in the years ahead.** Investing in agricultural commodities is a way to benefit from this trend.

However, traders should also consider the risks of investing in barley:

- Strength in the US dollar could be a negative for barley prices.
- Overproduction by large suppliers could depress prices.
- Economic or political turmoil in emerging markets could weaken the demand for agricultural commodities.

WHAT DO INVESTMENT EXPERTS THINK ABOUT BARLEY?

Experts see mostly positive news for the agriculture sector including barley in the years ahead. The USDA recently raised its Chinese import expectations for barley citing increased demand for feedstuffs.



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You can open a chain of restaurants in the agricultural areas of the world because the farmers are going to be much more successful in the next 30 years than in the last 30 years.”

Jim Rogers, founder of Quantum Fund

| CANOLA



WHY IS CANOLA VALUABLE?

Canola is a crop grown primarily for its seeds, which can be crushed to produce canola oil and canola meal.

In the 1960s, Canadian scientists created canola by conventionally breeding rapeseed plants. The idea was to eliminate the undesirable properties of rapeseed oil and create a new plant with a better nutritional profile. The term canola is a contraction of 'Canadian' and 'ola.'

Canola oil is one of the most versatile cooking oils and a healthy alternative to oils with higher saturated fat content. Canola meal is a staple in animal feed. These two products make canola an important global commodity.

HOW IS BARLEY GROWN?

Canola is a member of the Brassica family of crops, which includes broccoli, cabbage, cauliflower, mustard, turnip and radish.

The ideal habitat for growing canola is a grain farm with rainfall zones of between 450 and 700 mm, although newer varieties of the crop have been grown in drier climates. **The crop has a similar profile to wheat, and farmers often rotate wheat and canola on their acreage.**

Canola crops can be planted in the spring or winter. Spring canola grows in colder northern climates such as the US plains states and Canada. The crop is planted in rows in March and harvested in September or October. The slightly cooler summers in the northern growing regions allow the crop to prosper. Winter canola is planted in September and October and harvested in the spring.

Canola is considered a hardy crop that adapts well to variations in temperatures. As a result, it is grown in a wide variety of geographical regions in the United States, Canada and other regions of the world.

Canadian farmers began planting canola in 1974, and US farmers introduced the crop in 1988. **More than 80% of the canola in the United States is produced in the state of North Dakota.** Other key producing states include Oklahoma, Montana, Washington, Minnesota, Kansas and Idaho.

Canada is the world's largest single country producer of canola. It produces more than 25% of the global supply of canola and leads the world in exports. The European Union also produces a significant amount of canola.

TOP 3 USES OF CANOLA

1. Canola Oil

Its favorable nutritional profile makes canola a popular choice for sauteing, frying and baking.

2. Canola Meal

The canola meal that remains after oil extraction can be crushed and prepared as animal feed for poultry, pigs and cattle.

3. Non-food Ingredient

Canola is used in the following non-food products: Canola is used in the following non-food products: Biodiesel, Printing inks, Cosmetics, Toothpaste and more.

WHAT DRIVES THE PRICE OF CANOLA?

Canadian Market

Canada produces the largest share of the global supply of canola, so events in this country can have an important effect on prices. Extremely cold or warm temperatures can limit crop production. Also, decisions about how to allocate acreage for crop production can impact prices. If farmers believe the price prospects for wheat, for example, are more favorable, then canola production might suffer. This could send prices higher.

The US Dollar

The US currency is the world's reserve currency. As a result, canola and other commodities are quoted in US dollars. **Canola growers receive fewer dollars for their crop when the US currency is strong and more dollars when the currency is weak.**

Emerging Market Demand

Emerging market countries such as China, Mexico and Pakistan import significant amounts of canola oil, and consumption has been gradually growing over the years. As these and other emerging economies expand, their demand for agricultural commodities will grow. **Increasing wealth will also likely mean increased consumption of meat. Since canola is used to produce livestock feed, this should also boost prices for the commodity.** On the other hand, a global recession or severe emerging market slowdown could limit demand.

Substitution

Oil produced from canola meal competes with many other oil meals including castor, soybean, linseed and cottonseed. **The demand for these meals will fluctuate mostly based on price and availability.** Perception about health benefits could also impact the relative demand for different oils and oil meals.

Biofuel Demand

Surging demand for biofuels has contributed strongly to demand for canola. The European Union has not been able to produce enough canola for its biodiesel needs and imports the crop from Russia and Ukraine. The two countries have ramped up production, but **as more consumers turn to biofuels, supply may not be able to keep pace with demand.**

HEALTH NEWS

Canola growers tout the many benefits of canola oil consumption including **its low saturated fat and high omega fats profile. They call it the world's healthiest cooking oil.**

However, canola oil has its controversies. Some health experts warn that canola oil is really just modified rapeseed oil. Rapeseed oil has traditionally been used for industrial purposes such as in lubricants. It contains harmful substances such as erucic acid, which may cause heart damage.

In addition, **around 90% of the global canola crop is genetically modified**, and many scientists believe consuming genetically modified products can cause diseases. As more information becomes known about the positive and negative health effects of canola, consumption patterns may change.

REASONS YOU MIGHT TRADE CANOLA

Inflation and Weak US Dollar Hedge

Trading canola is one way to bet on a weak US dollar and higher inflation. Since agricultural commodities including canola get priced in US dollars, **the performance of the US currency plays a crucial role in their pricing.**

The US Federal Reserve Bank has generally pursued accommodative policies that have kept the US dollar weak. If US central bankers continue these policies, then agricultural commodities could see significant gains. Consumers concerned about protecting their purchasing power should consider investing in agricultural commodities. A weak dollar could stoke inflation concerns and raise canola prices.

Speculate on Demand Growth

Canola prices should perform well if the world economy grows at a strong rate. **Demand from emerging market economies could be the catalysts for significantly higher agricultural commodity prices.** As these countries become richer, they will probably increase their demand for livestock feed and oils. Canola prices should benefit from these trends.

Demand in the developed world may also outstrip supply in the coming years. Factors such as growth in biodiesels could contribute to this demand.

SHOULD I TRADE CANOLA?

Traders who want exposure to canola prices might want to consider buying a basket of commodities that includes other agricultural staples such as wheat, corn, barley and soybeans.

For additional diversification, they may want to trade in other commodities including metals and energy. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds overall diversification to an investment portfolio.

Canola is arguably an attractive commodity to consider trading. There are four specific trends that could boost canola prices in the years ahead:

- Emerging market demand
- Climate change
- Biofuels
- Health issues

Emerging Market Demand

The development of emerging economies could boost canola demand. As people in these countries accumulate wealth, they will probably start eating a more varied diet. The demand for livestock feed and canola oil may see significant growth.

Climate Change

Global warming trends have the potential to seriously disrupt the production of many different crops including canola. If recent weather patterns continue, the world's supply of food may not be able to meet demand in the years ahead. Trading agricultural commodities is a way to benefit from this trend.

Biofuels

The growth in biofuel consumption could lead to significantly greater demand for canola. The European Union is unable to meet its demand and is turning to Eastern European countries for its supply.

Health Issues

Canola is seen by many medical experts as a heart-healthy alternative to other oils with higher saturated fat content. The American Heart Association has added a new liquid vegetable oil category to its Heart-Check Food Certification program, and canola oil is on the list. More positive press about the health benefits of canola could lead prices higher in the years ahead.

However there are some risks to trading canola that should be considered:

- A strong US dollar could drive prices lower.
- Overproduction by large suppliers and exporters such as Canada could depress prices.
- Bad news on the health front could weaken consumer demand for canola products.

WHAT DO INVESTMENT EXPERTS THINK ABOUT CANOLA?

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“We’re definitely optimistic on grains and oilseeds.”

James Cordier, president and head trader of OptionSellers.com

“

“I’m still extremely optimistic about agriculture, more so than many sectors of the world economy.”

Jim Rogers, creator of the Rogers International Commodity Index

However, Canadian officials present a more muted outlook for canola. Although the Canadian farm ministry cut its harvest forecast, the country still produces record amounts of canola crops. Improvements in crop strains are the primary reason for this abundance.

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“Historically, the hybrid varieties grown across Western Canada proved to be remarkably drought tolerant.”

Canadian Farm Ministry

| COCOA



WHY IS COCOA VALUABLE?

Cocoa is a food derived from the dried and fermented seeds (beans) of the Theobroma Cacao plant, which means “food of the gods” in Greek. It’s primarily used to make chocolate. The Mayans first cultivated cocoa trees more than 5,000 years ago and made a ritual beverage from the seeds. In the 15th century, Spain began to acquire cocoa, and by the 17th century cocoa’s popularity had spread throughout Europe.

Today civilizations all around the world enjoy cocoa in thousands of different ways. With the annual consumption of cocoa beans topping 4.5 million tons, cocoa is an important commodity in world markets.

HOW IS COCOA GROWN?

Cocoa trees grow in tropical regions. They require humidity, good soil drainage and consistent rainfall to grow properly. There are three widely known species of the Theobroma Cacao plant:

Criollo – Primarily grown in Central America

Forastero – Primarily grown in West Africa and South America

Trinitario – Grown in all cocoa-growing regions

Growers use one of two methods to plant the crop:

1. They plant young trees between permanent or temporary plants such as coconuts, plantains and bananas. These crops provide shade for the young cocoa plants.
2. They thin out mature cocoa plants and place the young trees between the older plants.

The Theobroma Cacao plant that produces cocoa beans grows to be 30-feet tall and produces colorful flowers and white fruit. A cocoa tree takes five years to produce cacao pods, which are the name given to its fruit. Cacao pods have reddish-orange or yellow coloring and very hard shells.

The peak growing period for a cocoa plant is ten years, but some trees can continue to be productive for decades. Once cacao pods begin to grow, they take four to five months to mature and several weeks after that to ripen. Each cacao pod contains about 40 to 50 beans. Cacao pods grow from the trunk and branches of the cocoa tree. Since the beans begin to germinate if they are left on the tree for more than three to four weeks after ripening, the timing of the harvest is crucial.

Once they are ripe, farmers cut the fruit from the trees with machetes or sharp knives, extract the wet beans and begin the process of drying and fermenting. Fermentation takes three to seven days and the sun drying process takes several more days.

4 MAIN USES OF COCOA

1. Cocoa Liquor

The main ingredient in chocolate and confectionery products

2. Cocoa Powder

Used as an ingredient in chocolate-flavored drinks and desserts

3. Cocoa Butter

Used to manufacture chocolate as well as cosmetic products such as moisturizing cream and soap

4. Cocoa Husks

The husks of cacao pods and the pulp surrounding the beans have a variety of commercial uses:

- a. Animal feed
- b. Ingredient in the production of soft drinks and alcoholic beverages
- c. Soap manufacturing
- d. Fertilizer for cocoa, vegetables and other crops
- e. Pectin production for jams and marmalades
- f. Mulch

WHAT DRIVES THE PRICE OF COCOA?

Supply

The supply of cocoa is heavily concentrated geographically. Over 60% of global production comes from a few countries in Western Africa with the Ivory Coast being the largest grower. **Cocoa prices can experience wide swings as a result of news from this region.** Political and civil unrest and labor disputes can create supply bottlenecks that lead to sharp rises in prices. The Ivory Coast, for example, has experienced political corruption and instability since declaring its independence. A rise in political tensions in this country could severely hamper cocoa supply.

Climate

Cacao pods require a mix of wet weather and sunshine to ripen. Each stage of the five-year process from planting to fruit production requires ideal weather conditions. Episodes of long drought conditions or heavy rains can cause the pods to dry out or rot. Since weather determines the yield of the crop, it can have a major impact on cocoa prices.

Production Cycle

The production cycle from cocoa planting to harvesting is a multi-year endeavor. Farmers have to make decisions about crop production long before they will see profits from their investment. Factors including the future outlook for prices impact the quantity of production.

However, **because there is such a long growth cycle, the market supply of cocoa often can't quickly react to changes in demand.** This can lead to cocoa shortages and spikes in price. Compounding this problem is the fact that cocoa is perishable and can't be stored indefinitely.

Infrastructure and Transportation

Cocoa is grown in mostly impoverished parts of the world with limited infrastructure. Poor roads and transportation equipment make the region susceptible to supply disruptions. Excessive rain, for example, can lead to significant delays in transporting cocoa to consumers. These delays can result in supply shortages and higher prices.

Consumer Preferences

Changes in consumer tastes can affect demand for cocoa and impact prices. In many western countries, dark chocolate consumption is on the rise due to positive publicity about its health benefits. Dark chocolate requires more cocoa to produce than milk chocolate.

Emerging market consumers can also drive cocoa prices. Since chocolate is a discretionary item, wealth affects its demand. As emerging economies acquire more wealth, their demand for chocolate products will probably grow.

British Pound

Cocoa is one of the last remaining commodities to be traded in British pounds. **When the pound weakens, the price of cocoa becomes more expensive on the London futures market.** However, US futures for cocoa trade in dollars, so their price is affected by the US currency.

3 REASONS YOU MIGHT INVEST IN COCOA

Can You Speculate on the Price of Cocoa?

Most cocoa production occurs in a few countries in Western Africa. Weather and local politics play a big role in creating and alleviating supply bottlenecks.

Cocoa prices can be very volatile. Investors looking to speculate on short-term bottlenecks in supply might see cocoa as an attractive investment.

Is Cocoa a Bet on Growing Demand?

1. Emerging market countries are getting wealthier and adopting Western dietary customs. Chocolate is a luxury item that could see great demand as these countries get richer.

2. Dark chocolate is considered a health food. It is rich in antioxidants, lowers cholesterol and protects against cancers. As healthy eating habits become more prevalent worldwide, cocoa demand could grow sharply.

3. Western taste for chocolate is growing. Whether it's the perceived health benefits of dark chocolate or the sweet tooth of consumers, chocolate consumption in mature Western economies shows no signs of slowing down. Growth in demand in Europe and North America could push cocoa prices higher.

Diversifying Your Portfolio

Commodities such as cocoa provide portfolio diversification to traders. They generally have low correlation with other financial assets and offer protection during inflationary periods.

SHOULD I INVEST IN COCOA?

Cocoa prices can be very volatile, so investing in the commodity could produce big gains or big losses. Investing in cocoa can be more than just a speculative play on a supply shortage. An investment in cocoa is a way to diversify the assets in a portfolio away from financial products and into commodities.

A basket of commodities that includes cocoa, other soft commodities, metals and energy could mitigate overall portfolio risk and provide protection during times of inflation.

Investing in cocoa is also a way to profit from 3 long-term trends:

1. **Growing wealth in emerging markets** could boost cocoa consumption.
2. **Global warming trends** could damage the long-term production of cocoa trees and lead to supply shocks.
3. **Health-conscious consumers** might increase their consumption of dark chocolate in the years ahead. Chocolate is unusual among health foods in that most people enjoy its taste.

Cocoa traders should also consider the risks involved in investing:

1. **Global concerns about obesity could curtail demand.** Although dark chocolate has health benefits, it also has a very high fat content. Milk chocolate has both high amounts of sugar and fat.
2. **Strength in the British pound** could lower cocoa prices in some markets.
3. **Oversupply of cocoa could put pressure on prices.** If Western African cocoa-producing countries attain political stability and upgrade manufacturing facilities, cocoa production could increase and prices fall.
4. **Cocoa is a volatile commodity** that could move lower without any specific catalyst.

WHAT DO THE EXPERTS THINK ABOUT COCOA?

Experts see reasons for pessimism about cocoa prices in the short term, but they also see a favorable long-term backdrop for the commodity.

Ideal weather conditions in Western Africa may lead to bumper crops for the commodity in the near-term.

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“...weather conditions are seen to be improving, fueling the selloff.”

– Wilfred Chong, Phillip Futures commodities dealer

Other analysts point to waning consumer demand as the culprit for weak prices going forward.

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“Whilst consumers are still looking to indulge, they are also increasingly concerned with eating better.”

– Euromonitor analysts

However, despite his concern about the supply overhang on cocoa from the weather, Chong sees a reason to be optimistic about the long-term prospects for cocoa.

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“There may be a rising number of health conscious individuals but there is also a growing popularity over health benefits of cacao and cocoa. Such trends take a much longer period to make a significant difference.”

– Wilfred Chong, Phillip Futures commodities dealer

| COFFEE



WHY IS COFFEE VALUABLE?

Coffee is a soft commodity derived from a plant that grows mostly in subtropical and tropical climates. The beverage produced from the cherries on these plants is a primary source of caffeine in diets in both emerging and developed countries.

Coffee is such an important dietary staple across the world that it has spawned a staggeringly large economy of its own. Coffee roasters, packers, growers, marketers and coffee equipment manufacturers depend on the commodity as do dairy producers and restaurant operators. Coffee commodity prices, therefore, play a vital role in the global economy.

HOW COFFEE IS PRODUCED?

Coffee plants grow in two varieties – Arabica and Robusta. The cherry that grows on the plant contains seeds – known as beans – that are roasted to make coffee.

Arabica plants grow in subtropical and tropical climates in both lower and higher altitudes:

Lower Altitude Crops: These crops require well-defined rainy and dry seasons and altitudes of between 1,800 and 3,600 feet. Such conditions produce distinct growing and maturation seasons. Mexico, Jamaica, some areas of Brazil and Zimbabwe are countries with these types of conditions.

Higher Altitude Crops: These crops grow near the equator at altitudes of 3,600 to 6,300 feet. Coffee plants here require frequent rainfall and produce two harvesting seasons. Kenya, Colombia and Ethiopia are countries with these climate and geographical conditions.

Robusta plants generally grow at much lower altitudes than Arabica crops. Coffee producers plant Robusta in regions 10 degrees north or south of the equator at altitudes ranging from sea level to 3,000 feet. Robusta plants can tolerate warmer weather than Arabica plants.

Global production of coffee is measured in jute bags which can hold 60 kg of coffee. *One-ton polypropylene super-sacks have been replacing jute bags for coffee exports.

Total global production of coffee by exporting countries exceeds 150 million jute bags annually. Arabica beans generally comprise more than 60% of the total production.

WHAT DRIVES THE PRICE OF COFFEE?

Geopolitics

The top five coffee-producing countries account for about two-thirds of global production, and the two largest producers – Brazil and Vietnam – often account for about half of annual production.

All of these countries have histories of **political instability**. Political crises such as leadership vacuums or corruption scandals can unnerve markets and create concerns about supply disruptions.

Climate

Coffee crops are **highly sensitive to weather conditions**.

Crops need the right combination of rainfall and sunshine to yield maximum output. When these conditions don't materialize, supply becomes restrained and prices rise.

The fact that the bulk of coffee production is concentrated in a few countries exacerbates this problem. Global warming patterns have the potential to create long-term drought conditions in coffee-growing countries. If these patterns persist, coffee prices could head higher in the years ahead.

Discretionary Income

Although much of the world regularly consumes coffee, the beverage is **not a necessary staple** in the same way that grains such as wheat and rice are. Therefore, patterns in discretionary income and spending can play a significant role in moving prices.

In developed regions such as the EU and the United States, trends in unemployment and average hourly earnings could serve as important barometers for changes in coffee consumption. **In emerging markets, overall economic growth could impact coffee consumption.** China, for example, has shown a pattern of shifting toward Western dietary norms as its economy has matured. Although China has

Transportation and Oil Prices

Coffee growers have to transport their beans to consumers and businesses around the world, and all forms of transportation require fuel. **The price of oil can have a major impact on the price of coffee.**

Disruptions to refinery operations can cause the price of gasoline to rise. Buyers of coffee should expect prices for the commodity to have a positive relationship with energy prices.

Health Issues

The medical community has produced conflicting evidence about the health effects of drinking coffee. Coffee enthusiasts note the beverage's benefits for disease prevention and its numerous antioxidants including vitamins B2 (riboflavin), B5 (pantothenic acid) and B1 (thiamin).

However, caffeine in coffee can lead to anxiety and disrupt sleep in some people. It also is an addictive substance. The extent to which the public embraces the positive or negative message about coffee could impact demand and prices for the commodity.

The US Dollar

Commodities, including coffee, are priced in US dollars. Sellers of coffee receive fewer dollars for their product when the US currency is strong and more dollars when the currency is weak. A strong US dollar can potentially depress coffee prices, while a weak US dollar is usually good for prices.

5 REASONS YOU MIGHT INVEST IN COFFEE

Can You Hedge on the Supply Scarcity of Coffee?

Coffee has its source of supply concentrated heavily in a few countries. Since coffee growing requires the right climate and financial resources, this concentration is unlikely to change anytime soon. Conditions such as climate change and political upheaval have the serious potential to disrupt the supply of the crop and send prices higher.

Bet on Global Growth

As a discretionary item, coffee benefits from strong global economic growth. Investors optimistic about growth in emerging economies in Asia, Latin America and Africa may want to invest in coffee. As these countries accumulate wealth, their consumption of coffee is likely to increase. Similarly, investing in coffee is a way to bet on growing discretionary income in Western economies.

Bet on the Increasing Health Benefits of Coffee

Medical evidence paints an increasingly favorable picture of the health benefits of consuming coffee. If more medical evidence emerges about these benefits, then consumer behavior may shift toward greater consumption.

The Starbucks Effect on Coffee and Investments

Consumers increasingly see coffee shops as fun and productive places to congregate. Business professionals, students and civic groups perform work and hold meetings in them. As coffee shops proliferate in popularity, coffee consumption should benefit.

Diversify Your Investment Portfolio

Most traders have the vast majority of their assets in stocks and bonds. Investing in coffee is one way to diversify a portfolio.

SHOULD I INVEST IN COFFEE?

Coffee prices can be very volatile, so traders should take that into account when deciding whether or not to invest. An investment in coffee might make sense as part of an overall plan to allocate some assets to commodities. **Commodities provide traders with protection against inflation and a declining US dollar.** They also provide traders with asset diversification.

There are three compelling long-term trends that could boost coffee prices specifically:

- 1. Global Climate Change:** Coffee might be a way to profit from long-term shifts in weather patterns. Increasingly hot temperatures and unpredictable hurricane seasons could create upheaval in the production of many crops including coffee.
- 2. Emphasis on Healthy Living:** Studies in the medical community continue to show more benefits from coffee consumption. This news has the potential to convert more individuals into coffee drinkers and drive coffee prices higher.
- 3. Emerging Market Growth:** Rising wages in emerging economies have the potential to transform consumption patterns. Discretionary items such as coffee could be the beneficiaries of this trend.

However, coffee investing has several risks as well:

- 1. A strong US dollar** could drive prices lower
- 2. Overproduction** by large suppliers could depress prices
- 3. Economic weakness**, in general, could curb consumers' appetite for coffee

WHAT DO THE EXPERTS THINK ABOUT COFFEE?

Experts see favorable supply/demand fundamentals boosting coffee prices. They see weak harvests of Arabica beans and increasing demand for high-end gourmet coffee as the drivers of this trend.

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“We expect prices to hit further highs on production downgrades, the decline in global stocks and supply tightness that should keep markets fearful of any disruptions.”

Sudakshina Unnikrishnan, commodities analyst at Barclays Capital

James Hearn, co-head of agriculture at commodities broker Marex Spectron, agrees. He believes that low Arabica prices fail to take into account the impending shortage.

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“It’s a material deficit; everyone can see there’s a problem coming.”

James Hearn, co-head of agriculture, Marex Spectron

Hearn notes that crop conditions in Brazil and tight demand have the potential to lift prices much higher. He points to the Brazilian government’s sale of its supply, which was met with strong market demand. As government supplies get depleted, the potential for higher prices increases.

CORN



WHY IS CORN VALUABLE?

Corn, also known as maize, is a cereal grain native to Central America. It is a source of food for humans and animals, as well as being a key ingredient in fuel production. Ancient farmers in the region that is now Southern Mexico first domesticated corn about 10,000 years ago.

However, European countries didn't discover the crop until 1492 when Christopher Columbus brought it back from Cuba.

A growing number of diverse industries use corn to produce their products, with annual production of the crop now exceeding that of rice and wheat. Therefore, corn plays a critical role in the world economy.

HOW IS CORN GROWN?

Corn is a member of the grass family and grows in diverse climates and regions around the world.

There are six varieties of the crop. All varieties grow in a similar manner. Farmers deposit seeds in an inch or two of soil and the seeds germinate in 5 to 12 days. The corn variety and soil temperature impact the timing of this process.

As the seeds sprout, they develop little leaves that resemble blades of grass. After further growth, the plants develop thick stalks and flat pointed leaves. Stalks can grow as high as 15 feet.

Once the stalks reach two-thirds of their full height, they begin the process of reproduction through pollination by wind. To ensure successful fertilization, farmers plant the seeds in short rows or blocks. This allows the silks from the female flowers to easily reach neighboring plants.

THE SIX VARIETIES OF CORN

1. Sweet corn

A naturally sweet variety that is harvested immaturity.

2. Popcorn

Characterized by a hard outer shell and minimal soft starch content.

3. Flour Corn

One of the oldest varieties of corn with a soft starch content.

4. Dent Corn

Known as field corn, it accounts for 99% of US production.

5. Flint Corn

Characterized by a hard glassy outer shell and grown primarily in Central and South America.

6. Pod Corn

Grown mainly for ornamental purposes.

The timing of harvests can have a big impact on the flavor of the corn. Corn harvested during the earlier "milk" stage is characterized by its sweetness, while corn harvested in the later "dough" stage is characterized by its starchy interior.

Planting and harvesting seasons vary by region and climate conditions. In the United States, which is the largest corn producer, most corn grows in the plains of states of the Midwest. Planting occurs between April and June, and harvesting takes place between October and November. The southernmost regions generally plant first, while northern regions wait for the snow to melt and soil to thaw.

Corn can be rotated with other crops such as soybeans, so at the beginning of the planting season, farmers have to decide which crop to grow.

The corn-soybean spread is one tool farmers use to make this decision. This spread is the number of bushels of corn needed to buy a bushel of soybeans. When the ratio is below 2.2 to 1, corn is historically expensive, while a ratio above 2.4 to 1 signals historically expensive soybeans.

WHY IS CORN VALUABLE?

Livestock Feed

Corn accounts for more than 95% of feed grain production in the United States.

Ethanol

Corn is the main feedstock used to produce ethanol, which is an important ingredient in gasoline.

High-Fructose Corn Syrup

This product made from corn starch is used to sweeten many products including ketchup, candies and soft drinks.

Corn Starch

This kitchen ingredient is used to thicken sauces and is also a chemical additive in some medical products.

Cereal

Many breakfast cereals contain corn.

Alcoholic Beverages

Some whiskeys and spirits are made with corn.

Miscellaneous Uses

A diverse array of everyday items contain corn including:

- Plastics
- Batteries
- Deodorants
- Cough drops
- Diapers
- Matchsticks
- Carpets
- Crayons
- Glue

WHAT DRIVES THE PRICE OF CORN?

Ethanol Market

Corn is playing a growing role in ethanol production, so demand for this fuel additive could have a big impact on corn prices. The US government heavily subsidizes corn farmers to boost ethanol production, and farmers make decisions about which crops to grow based on subsidies. If ethanol demand were to dissipate, then markets would have an excess supply of corn, and prices would likely head lower.

Crude Oil Prices

Because corn is increasingly being used to make fuels, its relationship with oil prices can't be ignored. A rise in crude oil prices would likely cause a rise in demand for biofuels as consumers switch to cheaper alternatives. In fact, agricultural commodities used in fuel production have high price correlations with crude oil.

Chinese Demand

Analyzing corn prices without mentioning China would be a huge omission. China is the world's largest consumer of energy and largest importer of petroleum. The country's energy needs are expected to remain enormous as its economy continues to grow. China is seeking out cheaper and more environmentally-friendly energy sources, and biofuels will play some role in this plan. Any slow down in growth in China could spell trouble for corn prices, while an uptick could lead to higher prices.

The US Dollar

As the world's reserve currency, the dollar can often dictate the direction of commodity prices. When the value of the dollar drops against other currencies, it takes more dollars to purchase corn than it does when the price is high. Put another way, sellers of corn get fewer dollars for their product when the dollar is strong and more dollars when the currency is weak. The United States is the leading global corn producer, so it is unlikely that corn would be quoted in a different currency any time soon.

Climate

Climate can have a big effect on yields for corn crops. Moderate changes in weather patterns can increase the number of severely hot days in the growing season. These heat waves can dramatically reduce crop output and create price spikes. Farmers continue to try and develop more heat-resistant strains of corn, and production may shift north into Canada. In the meantime, corn traders have to carefully monitor weather patterns.

4 REASONS YOU MIGHT INVEST IN CORN

Betting on Ethanol Demand

Consumption of biofuels including ethanol is likely to grow in the years ahead, and investing in corn is a way to benefit from this trend. Over 60 countries, including the European Union nations, have ethanol targets or mandates in place, and this number is expected to grow as more countries seek cleaner energy sources.

Speculating on Chinese Demand

Chinese demand for corn is likely to grow for many reasons including: The country has targets in place to increase biofuel consumption in the years ahead. The country has over a billion people that it needs to feed. China's growing wealth may lead to more meat consumption and greater demand for livestock feed.

How Does Corn Act as an Inflation Hedge?

Investing in corn is one way to protect yourself against inflation. Agricultural commodities, including corn, are certain to become more expensive if world economies experience bouts of inflation.

Overly accommodative monetary policies from the world's largest central banks have kept global interest rates low and have created speculation in many different asset classes. At some point, this speculation could show up in commodity markets, and corn prices could soar. **A weak dollar, in particular, could create inflation and lead to higher corn prices.**

Diversify Your Portfolio

Most traders are overly concentrated in stocks and bonds. Investing in corn provides traders with a diversification of risk in their portfolios.

SHOULD I INVEST IN CORN?

Corn prices can be volatile, and traders should expect large price swings. However, investing in corn can be part of a sensible plan to mitigate risk and diversify the composition of assets in a portfolio.

Investing in a basket of commodities that includes corn, other agricultural commodities, metals and energy can accomplish two goals:

1. It can provide protection against inflation.
2. It can protect a trader from the volatility of movements in individual commodities.

Including corn in this basket may make sense since it benefits from two massive economic macro-trends:

1. Emerging Market Growth: China, India and Brazil are among the many fast-growing countries that will have enormous food and energy needs in the years ahead.

2. Climate Change: Global warming is a positive catalyst for corn prices in two ways – It could lead to lower crop yields and it could increase demand for biofuels.

However, traders should also consider the risks of investing in corn.

1. **An emerging market slowdown** could seriously limit demand for corn.
2. **Advancements in green energy sources**, such as solar, hydroelectric and wind power, could reduce demand for biofuels.
3. **Heavy subsidization** could lead to overproduction of corn.

SHOULD I INVEST IN CORN?

Experts see reasons for both optimism and pessimism about corn prices in the future. On the one hand, there is a massive supply of the commodity, which is creating a serious overhang on the market:

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“There's too much harvest yet to come, too much corn being stored on the ground that will be pushed into the pipeline early rather than later.”

Matthew M. Pierce, director of commodity consulting, Futures International LLC

However, despite the oversupply, there may be reasons for optimism. Jason Ward, director of grains and energy at Northstar Commodity, believes corn prices have room to move lower as excess supply gets absorbed by the market. However, he sees a silver lining in the ethanol market:

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“... a lot of ethanol plants are in expansion mode. We need all of that because these corn yields, this year, are unbelievable.”

Jason Ward, director of grains and energy, Northstar Commodity

| COTTON



WHY IS COTTON VALUABLE?

Cotton is a fluffy natural fiber that grows on shrubs in tropical and subtropical regions around the world. The commodity is a staple in the textiles industry.

Historians don't know the precise origins of cotton, but cloth found in caves in Mexico proves that the crop was around more than 7,000 years ago. Since the Age of Antiquity, civilizations around the world have spun cotton fibers into cloth garments.

However, two events in history – the Industrial Revolution in England and the invention of the cotton gin in the United States – profoundly changed the role cotton plays in world markets. These events led to widespread production of cotton garments and turned cotton into a multi-billion dollar global industry.

HOW IS COTTON GROWN?

Cotton plants grow in warm regions of the world where there is ample sunshine and limited frost. Cotton farmers plant their crop in the spring and harvest it in autumn. Prior to planting, farmers prepare the land using either the no-till method, where they use special equipment to deposit the seeds on the soil's surface, or the till method, where they plow the land into rows forming seedbeds for planting.

About two months after tilling, tiny flower buds appear on the green, bushy shrubs that grow from the ground. In another three weeks, the flowers begin to blossom.

The flower petals will begin to change color – from white to yellow to pink and finally red – and then fall off the shrubs. What remains are tiny green pods called cotton bolls. These bolls ripen further and develop small fibers inside of them. As these fibers expand from sunshine, they burst out of the pod in the form of fluffy cotton.

Machines then harvest the fully ripened cotton into conveying systems that process the crop for consumption.

The largest cotton producing county is China. It has 100,000 cotton farmers, 7,500 textile companies and \$73 billion in annual cotton cloth production.

4 MAIN USES OF COTTON

1. Cotton Fiber

Woven or knitted into a variety of fabrics used to make clothing and household items. These fabrics include:

- Corduroy
- Chambray
- Velour
- Jersey
- Flannel

Used in other miscellaneous products including:

- Fishnets
- Coffee filters
- Book binding
- Archival papers

2. Cottonseed

Used as a feed for livestock.

3. Cottonseed Oil

Used as a cooking oil. Cottonseed oil is also found in many consumer products including:

- Soap
- Margarine
- Emulsifiers
- Cosmetics
- Pharmaceuticals
- Rubber
- Plastics

4. Linters

These are small fibers that remain on cottonseed after processing. Linters are used to make:

- Bandages
- Swabs
- Bank notes
- X-rays

WHAT DRIVES THE PRICE OF COTTON?

Global Stockpiles

In the recent past, China has engaged in enormous stockpiling to ensure they have an adequate supply of cotton. These actions have often resulted in higher domestic prices for cotton in China than in the rest of the world. If China were to sell off all of its stockpiles because of weak domestic demand, then prices for cotton would likely go lower.

On the other hand, if Chinese hoarding creates global shortages, prices could go higher.

Government Policies

Numerous governments including the United States heavily subsidize cotton farmers. **Subsidies have the effect of keeping the supply of cotton artificially high and its prices artificially low.** Brazil has pursued and won cases against the United States through the World Trade Organization to stymie these subsidies. However, a recent US farm bill increased subsidies for cotton. The prevalence of subsidies can have a meaningful effect on cotton prices.

Global Demand

The global demand for cotton is mostly a function of the overall health of the economy. Cotton is largely a discretionary item, and consumers can choose other cheaper synthetic fabrics, such as polyester, if the economy is weak. China plays such a key role in the cotton market that its economy in particular bears watching.

Climate

As with all agricultural commodities, climate plays an important role in driving cotton prices. Cotton needs warm weather, adequate rainfall and little or no frost to grow properly. Poor weather conditions in key growing regions in India or China, for example, could create supply shortages and prices spikes. On the other hand, ideal weather conditions could create bumper crops.

Price of Substitutes

The production and price of substitute fabrics such as polyester can play a key role in determining cotton prices. China is a major producer of purified terephthalic acid (PTA), which is the raw material used to make polyester. Historically, production decisions related to PTA can dramatically impact its demand. These decisions, in turn, can affect cotton demand and prices. Cotton traders should pay close attention to the market dynamics of PTA.

Oil Prices

Cotton is an expensive crop to produce. The machinery and motor vehicles needed to operate farms represent a significant component of overall costs. Machines and equipment require fuel, so crude prices can greatly impact cotton production.

In addition, PTA is produced from oil, so **a rise in crude prices could make polyester more expensive and raise demand for cotton.**

The US Dollar

Most commodities, including cotton, are priced in US dollars. When the value of the dollar drops against other currencies, it takes more dollars to purchase cotton than it does when the price is high. Buyers purchasing cotton in other currencies see their purchasing power increase when the dollar is weak and decline when the dollar is strong.

4 REASONS YOU MIGHT INVEST IN COTTON

Betting on Global Stockpiling

China has shown a tremendous appetite for cotton and willingness in recent history to build up huge stockpiles. The country has taken these measures to support and subsidize Chinese farmers.

Chinese growth has stalled in recent years creating weakness in many commodity prices. The country has been selling its stockpiles, and this has offset the pickup in demand from Chinese consumers.

In addition, many other countries have diminishing stockpiles. If global growth accelerates, then some of these countries could resume stockpiling.

Is Cotton a Safe Haven?

Commodities such as cotton do well when global economies are growing at a healthy pace. In particular, emerging market countries with higher growth rates are likely to experience big increases in their demand for cotton clothing and cotton products as they grow wealthier.

How Does Cotton Act as an Inflation Hedge?

Investing in cotton and other commodities is a way to hedge against the loss of purchasing power caused by inflation.

As central banks print more money, the purchasing power of fiat currencies (i.e., the dollar, euro and pound) declines. However, there is a finite amount of natural resources, so agricultural commodities such as cotton are more likely to retain their value.

Speculating on Oil Prices

The high correlation of cotton prices with crude oil makes investing in cotton an interesting way to capitalize on a rise in crude prices. Since crude is both an important ingredient in polyester production as well as a cost of cotton farming, cotton may benefit more than crude oil if prices for crude oil move higher.

SHOULD I INVEST IN COTTON?

As with many other commodities, cotton prices can be very volatile. However, investing in cotton can be one way to mitigate risk and diversify the investments in a portfolio.

Investors should consider the advantages of investing in a basket of commodities that includes cotton, other agricultural commodities, metals and energy:

1. Protection against inflation.
2. Protection against price swings in individual commodities.

Including cotton in this basket may be a way to capitalize on these developments:

1. **Global Growth:** China and India are enormous countries with fast-growing economies. These and other emerging market countries will have huge needs for raw materials such as cotton in the years ahead.
2. **Climate Change:** Global warming has the potential to create supply shocks in the years ahead. Prolonged periods of drought might create diminished crop yields and higher prices.

However, traders should also consider the risks of investing in cotton:

1. **Sales of Chinese stockpiles of cotton** could create a serious overhang on the market.
2. **A fall in price or increase in production of competing materials** such as polyester could drive demand away from cotton.
3. **Subsidies of cotton in many countries** could lead to overproduction and trade wars.

WHAT DO THE EXPERTS THINK ABOUT COTTON?

Experts see the excess supply of cotton as a major headwind for the commodity's price. They note increased production as the main catalysts for lower prices.

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“The supply side should remain ample, and if we see production ramp up, cotton will see further losses.”

Lara Magnusen, portfolio manager, Altegris Advisors LLC

Other experts note the sale of China's stockpiles as a negative market factor:

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“People used to say that because so much of the world inventory was within China, that it was bullish, because it was never going to come out. Now, we are in the reverse situation.”

Gillian Rutherford, commodities portfolio manager, Pacific Investment Management Co.

However, one analyst believes the pollution caused by polyester manufacturing could provide a glimmer of hope for cotton prices in the years ahead:

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“China has now forced the closure of numerous polyester manufacturing facilities due to widespread pollution. Increasing cotton's share of the fiber market will be difficult at best, but as mills and textile operations understand that cotton is the only sustainable fiber being produced then that growth will come.”

O.A. Cleveland, Consulting Economist, Cotton Experts

FEEDER CATTLE



WHY ARE FEEDER CATTLE VALUABLE?

Feeder cattle are weaned calves that reach a weight of between 600 to 800 pounds. At this point, cattle producers feed them a diet of high-energy feed to promote weight gain. Ultimately, when they reach a weight of about 1,200 to 1,400 pounds, feeder cattle are slaughtered to produce beef.

Worldwide consumption of beef approaches nearly 60 million metric tons annually.

The economic impact of the meat and poultry industry in the United States alone is over \$1 trillion. Beef production creates millions of jobs including suppliers, distributors and retailers. Feeder cattle are a vital part of the global ecosystem of beef production and an important commodity in world markets.

HOW DO RANCHERS PRODUCE FEEDER CATTLE?

Producing feeder cattle is a complex, high-stakes business. Successful production relies on proper animal husbandry techniques as well as good economic decision-making.

Ranchers begin the process by breeding cows (females) with bulls (males) either naturally or with artificial insemination (A.I.). Ranchers traditionally breed cattle in the summer to produce calves in the spring.

A natural breeding process generally requires one bull for each 20 to 25 cows. Many producers prefer A.I. because they can better control the genetics of the calves.

Ranchers must allocate a set amount of acres of pasture or grazing land for each cow and its calf offspring. This set amount of land is known as the stocking rate, and it varies from region to region based on weather conditions and maintenance procedures.

In the United States –the top cattle producing nation in the world – the stocking rate can be as low as five acres per cow-calf pair in high precipitation regions of the East to 150 acres in dry, arid regions of the West and Southwest.

A group of cows on a ranch is called a herd. Each cow generally gives birth to one calf, although some may occasionally produce twins. Not all cows conceive; weather, disease and nutrition can all affect conception rates.

Each year ranchers typically cull about 15 to 25% of the cows in their herd and send them to slaughter. The most common reasons for culling a cow include:

1. Failure to reproduce
2. Advanced age
3. Bad teeth
4. Drought conditions
5. High feed costs.

Once the calves are born, a certain number of females are held back to replace the cows that are culled. The remaining calves are raised for eventual slaughter. The timeline for raising feeder cattle is as follows:

- 1. First six months:** Calves remain with the cow and receive their initial nutrition from nursing. Over time, ranchers supplement this nutrition with grass feeding and eventually with grain.
- 2. Six to eight months of age:** Calves typically weight 500 to 600 pounds at this stage. Ranchers wean the calf from the cow. Some very heavy calves go directly into feedlots, but most pass through stocker operations.
- 3. Stocker operations:** Calves get fed on summer grass, winter wheat or some other roughage until they reach the weight of 600 to 800 pounds, which is when they become feeder cattle. This phase generally lasts between six to 10 months.
- 4. Feedlot:** A rancher with feeder cattle has three options:
 - Continue to raise the cattle on the rancher's property until they reach the designated weight for slaughter
 - Send the cattle to a commercial feedlot. A rancher would retain ownership of the cattle while the commercial feedlot feeds them.
 - Sell the feeder cattle to another rancher or feedlot operation.

Feeder cattle receive high-energy feed to promote weight gain. They are usually either steers (castrated males) or heifers (females that have not given birth). Cows (females that have given birth) and bulls (sexually intact males) generally are kept for production and not placed in feedlots.

TOP 5 USES OF CATTLE

1. Beef

Hamburgers, steaks and roast beef are among the many products produced from beef.

2. Food By-Products

By-products of beef production include the following:

- Liver, kidney, brains, tripe, sweetbreads and tongue are food sources in many countries
- Oleo oil and stock are produced from beef fat and used to make margarine and shortening
- Oleo stearin is an edible solid beef fat used to make some chewing gums and candies
- Gelatin from cattle bone and skins is used to make marshmallows, ice cream, canned meats and desserts

3. Beef Hide

Beef hide is used to make a variety of items:

- Leather
- Felt
- Some textiles
- Base for ointments
- Binder for plaster and asphalt
- Base for insulation material
- Brushes
- Footballs

4. Non-Food Uses (Beef Fats and Fatty Acids)

Some industrial oils, lubricants, soaps, lipsticks, face creams, hand creams, chemicals, pesticides and detergents derive from beef fat products.

5. Bones, Horns and Hooves

Buttons, piano keys, glues and fertilizers are some of the many products made from bones, horns and hooves of cattle.

WHAT DRIVES THE PRICE OF FEEDER CATTLE?

Feed Prices

Historically the price of livestock feed, especially corn, is inversely related to the price of feeder cattle. The rationale is that as the cost of producing the “finished” animal declines, buyers are willing to pay more for the “intermediate” product.

Corn is such an integral part of the process of raising feeder cattle that many ranchers and others dependent on cattle prices will hedge their exposure to this risk. **Traders looking to invest in feeder cattle should keep a careful eye on grain markets and the factors that influence grain prices.**

Feed Prices

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Weather

Weather can affect feeder cattle prices in several ways. First, weather has a big impact on grain prices. Severe drought conditions or excessive cold spells can diminish grain supply and send prices higher. This, in turn, usually has a negative effect on feeder cattle prices. Weather can also directly affect the process of raising feeder cattle. Excessive heat can lower cattle appetite and lengthen the time it takes to produce fully-fed cattle.

Global Demand for Beef

Beef is a discretionary item and generally more costly than other animal and vegetable food sources.

Demand for beef is historically correlated with overall wealth. As emerging market economies have grown wealthier, beef consumption has risen. Similarly, in developed economies, the level of beef consumption has often been tied to overall economic growth. Therefore, feeder cattle traders should pay attention to metrics such as GDP growth and unemployment for clues about future feeder cattle prices.

Substitution

Beef competes with other animal products such as chicken, pork, lamb and fish. Many factors can impact which of these products consumers choose, but cost often plays the biggest role. As the cost of beef rises, consumers may substitute other animal proteins in their diets.

Other factors that could lead to substitution are the discovery of diseases in cattle such as Bovine Spongiform Encephalopathy (BSE or mad cow disease).

Energy Prices

The energy required to raise cattle far exceeds that of other food sources. By some estimates, raising beef requires 10 times the resources needed to raise poultry, dairy, eggs and pork. Many of the added input costs of beef production – land use, water and nitrogen fertilizer, just to name a few – are very sensitive to energy prices. Ultimately, the price of oil, natural gas, coal and other energy sources can greatly impact beef prices.

3 REASONS YOU MIGHT INVEST IN FEEDER CATTLE

Bet on Global Growth

Growth in the global economy might be the best reason to invest in feeder cattle. As emerging economies expand, their appetite for animal proteins including beef is likely to continue to increase.

After the United States, China and Brazil now consume the second and third most beef globally. China, South Korea and Russia comprise three of the top five global importers of beef. Buying feeder cattle is a bet on continued solid growth from emerging market countries.

Inflation Hedge

Investing in feeder cattle is a way to hedge against the loss of purchasing power from inflation. Livestock is certain to become more expensive if the world economy starts to overheat. Easy money policies from the Federal Reserve and other central banks have kept global interest rates low and created speculation in many different asset classes. At some point this speculation could show up in food markets such as feeder cattle, particularly if there is a global food shortage. A weak dollar, in particular, could signal inflation and higher feeder cattle prices.

Portfolio Diversification

Investing in feeder cattle might be a way to diversify a portion of a portfolio out of stocks and bonds and into commodities.

SHOULD I INVEST IN CATTLE?

Feeder cattle prices can be volatile. Changes in weather, corn prices and beef demand, among other things, could lead to large price swings. **However, traders might want to consider including feeder cattle as part of an investment in a diversified basket of commodities.**

Investing in a basket of commodities that includes feeder cattle, other livestock and poultry, other agricultural commodities, metals and energy can accomplish two goals:

- It can protect a portfolio against inflation
- It can protect a trader from the volatility of movements in individual commodities

However, traders should also consider these three risks of investing in feeder cattle:

1. **An emerging market slowdown** could seriously limit demand for beef
2. **Trends toward healthier living** are creating negative perceptions about beef consumption
3. **Beef production is heavily energy intensive.** Environmental concerns and the green energy movement have created negative publicity for the beef industry

WHAT DO INVESTORS THINK ABOUT FEEDER CATTLE?

Experts generally have a pessimistic outlook about feeder cattle prices. One analyst cites the abundant supply of three sources of meat – poultry, pork and beef – as reasons to sour on the market:

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“All three of the major meats are in expansion mode, and that’s scary.”

Randy Blach, CEO CattleFax



Another expert concurs. Jeremy Klassen, manager of the Canadian office of Swiss-based grain trader GAP SA Grain Products Ltd., believes growth in the calf crop signals problems for the market:

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“...the 2017 calf crop was estimated at 36.5 million head, up 3.5 per cent from the 2016 calf crop of 35.0 million head. The last time the U.S. calf crop was this large was back in 2007 when it reached 36.8 million head. We haven’t seen a sharp increase in the cow slaughter so the U.S. cattle herd continues to expand at a rapid pace.”

Jeremy Klassen, Manager GAP SA Grain Products Ltd.

LEAN HOGS



WHY ARE LEAN HOGS VALUABLE?

Lean hogs are the most commonly traded commodity product for gaining investment exposure to whole hog prices.

The importance of lean hogs is directly linked to the massive global pork industry. **More people in the world consume pork than any other animal protein.** Worldwide consumption of pork products exceeds 100 million metric tons annually and spans across diverse geographies, economies and cultures.

Companies and individuals involved in the production, distribution and sale of pork products use lean hog futures and options as tools for hedging risk. As a result, these financial products occupy a critical role in global food commodity markets.

HOW DO FARMERS PRODUCE HOGS?

Successful production relies on proper animal husbandry techniques and good economic decision-making. The hog industry has evolved dramatically in recent years as large private and corporate operations have replaced small family farms.

Farms with larger head counts (number of pigs) have at least two economic advantages:

- 1. Lower production costs:** Economies of scale allow farmers to feed pigs more efficiently and better utilize their labor.
- 2. Negotiating leverage:** Larger farms can enter into better contracts with packing operations – the companies that slaughter, process, pack and distribute hogs – since they can offer packers a more consistent supply of hogs.

Hog production takes place in five stages:

1. Reproduction

Gilts (young females that have not yet given birth) and sows (mature female breeders) breed twice annually to ensure a steady flow of pigs for the operation. Operators seek out gilts that show excellent growth, leanness and breeding potential. Farmers purchase boars (sexually mature males) from breeding farms.

Hog breeding takes place in one of three ways:

- a. Pen mating:** One or more boars are placed with a group of sows.
- b. Hand mating:** One boar is placed with one sow or gilt.
- c. Artificial insemination:** A more labor intensive method that allows farmers to control genetics.

2. Gestation and Birth

Female pigs have gestation periods of 4 months and give birth to average litters of 9 -10 pigs. This number has steadily increased in recent years due to improvements in health, genetics and production methods. Traders pay close attention to these yield figures as they determine the future supply of hogs coming to market.

3. Weaning

Females wean baby pigs for three to four weeks. After this time, sows are either re-bred or sent to market. During the weaning stage, about 5% of pigs die from suffocation, disease, weather and other factors. Changes to this attrition number can affect supply and hog prices.

4. Feeding

Grains including corn, barley, milo, oats, distiller's grains and wheat comprise the main diet of young pigs. Farmers often supplement the diet with oilseed meals and vitamins.

5. Finishing

It takes about six months to raise a pig from birth to slaughter. A barrow (castrated male) or gilt typically gains on average about 1 pound a day during the finishing stages and will weigh about 270 pounds when they are ready for market. Producers usually sell pigs directly to packers.

6. Packing

Packers slaughter the pigs and butcher the carcasses into cuts that they sell to retailers. A typical 270 pound pig will yield a 200 pound carcass with an average of 25% ham, 25% loin, 16% belly, 11% picnic, 5% spareribs and 10% butt. Jowl, lean trim, lard and miscellaneous cuts and trimmings comprise the rest of the production.

TOP 3 USES OF LEAN HOGS

1. Pork

Ham, pork loins and pork chops and are among the many food products produced from lean hogs.

2. Pharmaceutical Co-Products

Pharmaceuticals rank second to meat in products obtained from lean hogs. The following are a small handful of the pharmaceutical products we obtain from hogs:

- Cortisone
- Blood Albumens
- Heart valve replacements
- Heparin
- Estrogens
- Insulin
- Melatonin
- Antidiuretic Hormone (ADH)
- Oxytocin
- Pespín
- Thyroxin

3. Industrial Co-Products

Lean hogs make contributions to the production of many industrial products including the following:

- Leather treatment agents
- Plywood adhesives
- Glue
- Gloves and shoes
- Buttons
- Bone china
- Bone meal
- Brushes
- Insulation
- Upholstery
- Insecticides
- Cosmetics
- Crayons
- Floor waxes
- Antifreeze
- Plastics

WHAT DRIVES THE PRICE OF LEAN HOGS?

Feed Prices

The cost of grains and feeds represents more than two-thirds of the production costs of producing pigs. Historically the price of livestock feed, especially corn, is inversely related to the price of lean hogs. As the price of corn rises, farmers take their hogs to market at lower weights to save on the higher costs. This creates an excess supply of hogs in the marketplace.

Corn is such an integral part of the process of raising pigs that many farmers dependent on lean hog prices will hedge their exposure to corn prices. Traders looking to invest in lean hogs should keep a careful eye on grain markets and the factors that influence grain prices.

Weather

Extremely warm weather in the late summer and early fall can make hogs inactive and lessen their desire to mate. This could result in a smaller number of births in the winter months. The reduced supply can translate into higher prices at market in the following summer months when the pigs are taken to market.

On the other hand, cold winter weather can increase the number of births that take place in the spring months. Lean hog traders should pay close attention to weather patterns in key hog production regions.

China

China is a behemoth when it comes to pork production and consumption. The country produces and consumes about half of the world's supply of pork products. In addition, China accounts for about 20% of the global supply of pork imports.

As China continues its transformation into a world superpower, it will require more food to feed its growing population. The country will likely increase its volume of pork consumption as its population gets wealthier. Other emerging economies such as Mexico and South Korea may also have greater demand for pork as their economies get stronger.

Substitution

Pork competes with other animal protein products such as chicken, beef, lamb and fish. Many factors can impact which of these products consumers choose, but price often plays the biggest role. If pork prices rise, consumers may substitute other animal proteins in their diets.

Other factors that could lead to substitution are the health benefits of the various choices. Hog farmers in the United States have made efforts to reduce the antibiotics used to produce pigs. In addition, the industry has changed the diet fed to pigs in an effort to produce leaner and healthier meat. How the public perceives these benefits can determine demand and price for lean hogs.

WHAT DRIVES THE PRICE OF LEAN HOGS?

Bet on Demand from China

Growth in Chinese demand for pork might be the best reason to invest in lean hogs. The global supply of pork has tightened in recent years as Chinese imports have risen sharply. If these patterns continue, there could be supply shortages and higher lean hog prices.

Of course, the biggest determinant of demand in China will be the economy. However, pork has long been the favored animal protein in the country, and demand elasticity might be less than for other types of meat.

Inflation Hedge

Investing in lean hogs is a way to hedge against the loss of purchasing power from inflation. Livestock is almost certain to become more expensive if the world economy starts to overheat.

Low interest rates from the Federal Reserve and other central banks have produced speculative bubbles in assets ranging from equities to high-yield debt to cryptocurrencies. Yet food remains the most basic and fundamental necessity. Food commodity prices could see the largest increases if the economy experiences higher inflation. Lean hog prices could benefit from these conditions.

Portfolio Diversification

Investing in lean hogs might be a way to diversify a portion of a portfolio out of stocks and bonds and into commodities.

SHOULD I INVEST IN LEAN HOGS?

Lean hog prices are extremely volatile. Unlike crude oil or gold, the primary traders of the commodity are not speculators, but industry players hedging their risk exposures.

Changes in weather, corn prices and demand from China, among other things, often create huge price swings. For this reason, traders may want to avoid taking large speculative positions in the commodity.

However, traders might want to consider buying a diversified basket of commodities that includes lean hogs. Investing in a basket of commodities that includes lean hogs, other livestock and poultry, other agricultural commodities, metals and energy can provide a portfolio with protection against inflation. It could also insulate against large movements in individual commodities.

Traders should also consider specifically investing in lean hogs because of the enormous importance of the Chinese market. Investing in lean hogs provides a way to participate in future economic growth in this huge economy.

However, traders should also consider these three risks of investing in lean hogs:

1. **An economic slowdown in China** could seriously limit demand for pork.
2. Better hog breeding techniques and animal husbandry practices could create **oversupplies of lean hogs**.
3. **Health and environmental concerns** could lead to decreases in pork consumption. In particular, hog producers have come under attack from environmental groups for waste and animal cruelty. Changes in perceptions about the industry could dampen demand.

WHAT DO EXPERTS THINK ABOUT LEAN HOGS?

Pork industry experts are generally very optimistic about the prospects for lean hog prices in the future. Experts cite demand, especially from international sources, as the main catalyst for higher prices.

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“We’re currently seeing so far this year in 2017, 15 percent more exports of pork, and it’s all going to foreign consumers. Strong demand is how we would explain the situation of more supply but even higher prices.”

Chris Hurt, agricultural economist at Purdue University

Another expert shares this optimism and believes higher beef prices in the United States might fuel more pork demand.

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“We’re pushing 4 percent more pork this year and 4 percent more pork next year. We’re going to be pushing those per capita offerings over 52 pounds per person [domestically], which is about as high as we’ve ever seen.”

Steve Meyer, vice president for EMI Analytics-Pork

| LIVE CATTLE



WHY ARE LIVE CATTLE VALUABLE?

Live cattle are full-grown cattle that have reached the necessary weight for slaughter. Cattle typically get slaughtered for meat and other by-products when they reach a weight of between 1,200 and 1,400 pounds, but this can vary.

For example, in 2016, the average, live federally inspected slaughter weight in the United States was approximately 1,384 pounds.

The beef industry is a global industry with an economic impact in the trillions of dollars. Beef production creates millions of jobs including suppliers, distributors and retailers. Ultimately, live cattle produce the beef and by-products consumed around the globe.

WHAT IS THE DIFFERENCE BETWEEN FEEDER CATTLE AND LIVE CATTLE?

Livestock traders distinguish between two types of cattle – feeder cattle and live cattle. The difference between these two commodities is the stage of the production cycle.

Feeder cattle are weaned calves that have reached a weight of between 600 and 800 pounds. At this point, feeder cattle are put in a feedlot where they consume a high-energy feed diet consisting mainly of corn and other grains. Feeder cattle typically need to gain more than 500 pounds before they reach slaughter weights, so corn prices have a big impact on feeder cattle prices.

Live cattle, on the other hand, are ‘finished’ products that are ready for sale to slaughterhouses. **Supply and demand factors for beef typically play the biggest role in determining live cattle prices.**

HOW DO RANCHERS PRODUCE LIVE CATTLE?

Production of live cattle begins with breeding cows (females) with bulls (males) either naturally or with artificial insemination (A.I.). Cows bred in the summer will produce calves in the spring. A natural breeding process generally requires one bull for each 20 to 25 cows. Many producers prefer A.I. because they can better control the genetics of the calves.

Ranchers allocate a certain amount of acres of pasture or grazing land for each cow and its calf offspring. This is known as the stocking rate, and it varies from region to region based on weather conditions and maintenance procedures.

In the United States –the top cattle-producing nation in the world – the stocking rate can be as low as five acres per cow-calf pair in high precipitation regions of the East to 150 acres in dry, arid regions of the West and Southwest.

A group of cows on a ranch is called a herd. Each cow generally gives birth to one calf, although some may occasionally produce twins. Not all cows conceive; weather, disease and nutrition can all affect conception rates.

Each year ranchers typically cull about 15 to 25% of the cows in their herd and send them to slaughter. The most common reasons for culling a cow include:

1. Failure to reproduce
2. Advanced age
3. Bad teeth
4. Drought conditions
5. High feed costs

Once the calves are born, a certain number of females are held back to replace the cows that are culled. The remaining calves are raised for eventual slaughter. The timeline for raising cattle is as follows:

1. First six months: Calves remain with the cow and receive their initial nutrition from nursing. Over time, ranchers supplement this nutrition with grass feeding and eventually with grain.

2. Six to eight months of age: Calves typically weight 500 to 600 pounds at this stage. Ranchers wean the calf from the cow. Some very heavy calves go directly into feedlots, but most pass through stocker operations.

3. Stocker operations: Calves get fed on summer grass, winter wheat or some other roughage until they reach the weight of 600 to 800 pounds, which is when they become feeder cattle. This phase generally lasts between six to 10 months.

4. Feedlot: A rancher then has three options:

- Continue to raise the cattle on the rancher's property until they reach the designated weight for slaughter
- Send the cattle to a commercial feedlot. A rancher would retain ownership of the cattle while the commercial feedlot feeds them.
- Sell the feeder cattle to another rancher or feedlot operation.

Feeder cattle receive high-energy feed to promote weight gain. They are usually either steers (castrated males) or heifers (females that have not given birth). Cows (females that have given birth) and bulls (sexually intact males) generally are kept for production and not placed in feedlots.

WHAT DRIVES THE PRICE OF CORN?

1. Beef

Hamburgers, steaks and roast beef are among the many products produced from beef.

2. Food By-Products

By-products of beef production include the following:

- Liver, kidney, brains, tripe, sweetbreads and tongue are food sources in many countries
- Oleo oil and stock are produced from beef fat and used to make margarine and shortening
- Oleo stearin is an edible solid beef fat used to make some chewing gums and candies
- Gelatin from cattle bone and skins is used to make marshmallows, ice cream, canned meats and desserts

3. Beef Hide

Beef hide is used to make a variety of items:

- Leather
- Felt
- Some textiles
- Base for ointments
- Binder for plaster and asphalt
- Base for insulation material
- Brushes
- Footballs

4. Non-Food Uses (Beef Fats and Fatty Acids)

Some industrial oils, lubricants, soaps, lipsticks, face creams, hand creams, chemicals, pesticides and detergents derive from beef fat products.

5. Bones, Horns and Hooves

Buttons, piano keys, glues and fertilizers are some of the many products made from bones, horns and hooves of cattle.

WHAT DRIVES THE PRICE OF LIVE CATTLE?

Beef Demand

Consumer incomes are one of the major drivers of beef demand and live cattle prices. Beef is more expensive than pork or poultry, and demand for animal proteins often shows price elasticity. During previous recessions, beef prices have fallen in response to lower demand and during robust economic expansions, beef demand and prices have risen.

Cattle Feeding Spreads

Cattle traders often construct hedges to trade the relationship between (1) the price of live cattle and (2) the price of feeder cattle and grains. One such spread is the cattle crush. In this spread the trader might buy (or sell) feeder cattle and corn futures and sell (or buy) an equivalent weight amount of live cattle. Traders have to estimate the hedge ratios of the different components in order to be completely hedged.

As the price of feeder cattle moves higher (or lower), spread traders expect the price of live cattle to follow in the same direction. In other words, market participants generally expect for there to be a high correlation between feeder cattle and live cattle prices.

Cattle on Feed Report

This monthly report by the United States Department of Agriculture (USDA) contains important data that can often dramatically move markets. The report lists three key pieces of data:

- 1. Cattle and calves on feed** – A measure of how many cattle will end up for processing in a few months.
- 2. Placements** – The number of cattle in feedlots that are being fed to produce a grade of 'select' or better by the USDA.
- 3. Marketings** – Cattle shipped out of feedlots to be slaughtered.

Feed Prices

As with feeder cattle, the price of corn and other feeds is inversely related to the price of live cattle. However, the reason for this inverse relationship with live cattle is slightly different. With feeder cattle, corn prices influence the cost of finishing the product. As finishing costs (corn) decline, buyers are willing to pay more for the “intermediate” product.

With live cattle, a rise in corn prices may lead ranchers to bring cattle to market prematurely. This, in turn, creates an oversupply and lower prices.

3 REASONS YOU MIGHT INVEST IN LIVE CATTLE

Bet on Global Growth

Growth in the global economy might be the best reason to invest in live cattle. As emerging economies expand, their appetite for animal proteins including beef is likely to continue to increase.

After the United States, China and Brazil now consume the second and third most beef globally. China, South Korea and Russia comprise three of the top five global importers of beef. Buying live cattle is a bet on continued solid growth from emerging market countries.

Inflation Hedge

Investing in live cattle is a way to hedge against the loss of purchasing power from inflation. Livestock is almost certain to become more expensive if the world economy starts to overheat.

Low interest rates from the Federal Reserve and other central banks have produced speculative bubbles in assets ranging from equities to high-yield debt to cryptocurrencies.

Yet food remains the most basic and fundamental necessity. Food commodity prices could see the largest increases if the economy experiences higher inflation. Live cattle prices could benefit from these conditions.

Portfolio Diversification

Investing in live cattle might be a feasible way to diversify a portion of a portfolio out of stocks and bonds and into commodities.

SHOULD I INVEST IN LIVE CATTLE?

Live cattle prices are extremely volatile. Unlike crude oil or gold, the primary traders of the commodity are not speculators, but industry players hedging their risk exposures.

Changes in feeder cattle supply, corn prices or demand for beef, among other things, could create enormous volatility. Traders should think carefully before taking large speculative positions in the commodity. **However, traders might want to consider buying a diversified basket of commodities that includes live cattle.**

Investing in a **basket of commodities** that includes live cattle, other livestock and poultry, other agricultural commodities, metals and energy can provide a portfolio with **protection against inflation**. It could also insulate against large movements in individual commodities.

The specific reasons for including live cattle in this basket are **to capitalize on growing global demand for food**. As incomes and wealth rise in emerging market countries such as China, India and Brazil, the demand for beef products will certainly grow as well.

However, traders should also consider the potential risks of investing in live cattle:

1. **A global economic slowdown** could seriously limit demand for beef.
2. **Trends toward healthier living** are creating negative perceptions about beef consumption.
3. **Beef production is heavily energy intensive**. Environmental concerns and the green energy movement have created negative publicity for the beef industry.
4. **Bovine spongiform encephalopathy (BSE)**, also known as mad cow disease, has the potential to cripple demand for beef products.

WHAT DO EXPERTS THINK ABOUT LIVE CATTLE?

Experts have a cautiously optimistic view about live cattle prices. On the one hand, placements remain high, which suggests that more feeder cattle will be coming into production shortly. On the other hand, beef consumption remains strong:

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“...all year long we have seen beef demand defy expectations. The economy is in good shape, unemployment is low and the consumer appears willing and able to pay for beef.”

Daily Livestock Report

OATS



WHY ARE OATS VALUABLE?

Oats are a cereal grain with high soluble fiber content. They are a source of food for both humans and animals and an ingredient in the production of cosmetics. Oats have been growing wild in West Africa since around 12,000 B.C. The first wheat and barley farmers viewed the plant as a weed and a nuisance.

Around 2,000 BC, when wheat farming began in Scandinavia and Poland, farmers observed that oats grew better than wheat in the cold, wet climate of Northern Europe. Nearly 500 years later, farmers in this region began intentionally growing oats. Therefore, oats were one of the last cereal grains to be domesticated. Today, oat production exceeds 22 million metric tons annually and takes place in diverse countries across the globe. The importance of the crop as both a source of animal feed and a highly nutritious food for humans ensures it will remain a leading global commodity.

HOW ARE OATS GROWN?

Oats are a member of the grass family and grow best in cool weather conditions with full sunlight and average, well-drained soil. The crop can tolerate light frosts, but will die when temperatures drop below 5 degrees Fahrenheit.

One of the advantages of growing oats is that the crop does not require intensive maintenance. When planted with other cover crops such as winter peas or winter beans, oats require no additional feeding.

Farmers generally plant oats either in the spring or late summer. Using a broadcast seeding method, they spread the seeds in rows about 3 inches apart.

The crop goes through several stages of growth before it is ready for harvesting. Oats planted in September will have the following developmental timeline:

Foundation

During the first six months of the plant's life cycle, three important developments take place:

1. **Root growth** – the oat plant produces roots between September and March.
2. **Leaf production** – the plant begins leaf production in September and develops its first visible unfolded leaves in November. By December the plant will have developed nine or more unfolded leaves.
3. **Tillering** – In December the plant develops its main shoot. By February it develops nine or more tillers.

Construction

The next phase of the crop growth occurs between April and May. Three developments occur:

1. **Stem elongation** – The crop's ears and nodes appear.
2. **Booting** – The flag leaf sheaths extend and open.
3. **Ear emergence** – The ear emerges above the flag leaf.

Production

Between June and August, the crop completes the final stages before harvesting:

1. **Flowering** – the plant begins to flower, which signals the beginning of the harvesting season
2. **Milk development** – the grain becomes watery ripe.
3. **Dough stage** – the grain accumulates starches and proteins and increases its dry weight
4. **Ripening** – the grain hardens and becomes difficult to divide.

Oat harvesting times vary by region. Typically farmers try to time the harvest to occur when the grains have reached 35% moisture – when the green kernels on the plant are beginning to turn a cream color. Harvesting occurs by swathing, or cutting the plants to about 4 inches above the ground. The swathed grains are placed in windows and dried in the sun.

TOP 7 OAT PRODUCTS

1. Whole oat groats

Oats that had the hulls removed and have been heat treated to inactivate enzymes

2. Steel cut oat groats

Whole oat groats that have been divided into two or four pieces

3. Whole oat flour

Whole oat products that have been ground through hammermills or rollstands

4. Low bran oat flour

Flour produced through bran production that has lower protein and fiber content than whole oat flour

5. Crushed oats

Lightly ground whole groats, steel cut or flakes

6. Large flake rolled oats

Rolled whole oat groats that have been cut into various thicknesses

7. Quick, baby and instant rolled oats

Manufactured by rolling steel cut oat groats

The majority of harvested oats – 95% in the United States – are used in animal feed. Yet oats have many health benefits for humans:

1. High soluble fibers – Oats make you full longer and regulate blood sugar and cholesterol.

2. Anti-inflammatory properties – Oats have been clinically shown to prevent inflammation and heal dry, itchy skin.

3. Best amino acid balance of all cereal grains – Oats are used as a water-binding agent in skin care products, shampoos, moisturizers and cleansing bars. Some food products that use oats include cookies, cereals, bread, muffins, crackers, snacks and even beer.

WHAT DRIVES THE PRICE OF OATS

Supply

The United States Department of Agriculture (USDA) publishes monthly data on global production, consumption, trade and stocks of oats. Traders carefully monitor these numbers for evidence of supply shortages or surpluses. In recent years, these numbers have been very consistent with only small year-to-year fluctuations in output and consumption.

However, sudden positive or negative surprises could move markets. Traders should monitor the dates of these releases as they can produce volatile trading conditions.

Weather

Weather affects all agricultural crops, and oats are no exception. If crop yields suffer as a result of a prolonged freeze or an extended drought, then oat prices could spike higher. On the other hand, ideal weather conditions could produce a bumper crop and depress prices.

One factor that somewhat mitigates the role weather plays in oat prices is the global nature of production. Unlike commodities such as coffee or orange juice, where production is heavily concentrated in a small number of countries, oat production is spread out across many regions. Poor growing conditions in one region of the world are sometimes offset by favorable conditions in another area. Nonetheless, weather still has the potential to impact prices.

Price of Corn

Since the primary use of oats is as a feed grain, the price of competing feed grains – especially corn – can impact its price. If the price of oats rises significantly higher than corn, then farmers might shift toward corn for their feed. Of course, if oat prices are significantly lower than corn, then oat consumption could increase.

Over the last several decades, the price of oats has been highly correlated with corn prices. Many professionals trade the spread between these two commodities by buying the one that's historically cheap while simultaneously selling the one that's historically expensive. Traders looking for clues about oat prices should pay attention to the spread between these two commodities.

3 REASONS YOU MIGHT INVEST IN OATS

Inflation Hedge

Investing in oats is a way to bet on higher inflation. The US Federal Reserve Bank and central banks around the world have kept interest rates low for a long time. These policies are likely to continue since they support consumer borrowing and spending. Low interest rates have produced speculative bubbles in many assets classes, but not yet in agricultural commodities. Yet food remains the most basic and fundamental necessity. **Food commodity prices could see the largest increases if the economy experiences higher inflation.** Oat prices could benefit from these conditions.

Bet on Demand Growth

Oat prices may benefit from strong global economic growth. **The demand for oats in livestock feed could grow as the global population gets wealthier and consumes more meat.** As corn and other 'fuel' grains get siphoned into biofuel production, farmers will need grains for producing livestock. Oat consumption could benefit from this development. Oat demand may also benefit from the population seeking healthier foods to consume.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as oats provide traders with a way to diversify and reduce the overall risk of their portfolios.

SHOULD I INVEST IN OATS?

Oats are a cereal grain that compete for demand with the other cereal grains. Consumer preferences for one grain over another largely depend on price. As a result, the prices of many of the cereal grains are highly correlated with one another.

On the other hand, grain prices are often negatively correlated with other agricultural commodities such as livestock. Therefore, traders wanting to hedge their bets might want to invest in a basket of commodities that includes grains and livestock as well as metals, energy and other commodities.

Investing in a basket of commodities that includes oats and other commodities can mitigate risk and diversify the composition of assets in a portfolio. A basket of commodities can also provide protection against inflation and protect a trader from the volatility of movements in individual commodities.

Including oats in this basket may make sense for the following reasons:

- 1. Emerging Market Growth:** China, India and Brazil are among the many fast-growing countries that will have enormous food needs in the years ahead. As these countries increase their meat consumption, their demand for oats may grow.
- 2. Climate Change:** Global warming is a positive catalyst for oat prices. Lower crop yields from droughts and excessive heat could boost the price of all agricultural commodities including oats.
- 3. Health Concerns:** Oats are an extremely healthy grain. Demand could benefit as a response to the global obesity epidemic.

However, traders should also consider the risks of investing in oats:

- 1. A global economic slowdown** could reduce demand for oats.
- 2. A sustained drop in the price of other grains** could siphon demand away from oats. While, usually, such price drops are temporary, there is no guarantee that this will be the case in the future.
- 3. Overproduction** of oats could cause prices to slump.

WHAT DO EXPERTS THINK ABOUT OATS?

Experts are generally optimistic about oat prices. They cite the drought conditions in the northern plains states as a factor that could limit the supply of wheat. One analyst believes these poor weather conditions should impact oat production as well.

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“Oats has basically the same growing patterns, same fundamentals as spring wheat. It’s a bullish commodity.”

Brian Hoops, president and senior market analyst at Midwest Market Solutions

| ORANGE JUICE



WHY IS ORANGE JUICE VALUABLE?

Orange juice is a beverage made from squeezing the fleshy fruit of the orange tree. In many countries, particularly in the western hemisphere, it is a staple item on breakfast tables.

Historians don't know the precise origins of oranges, but Chinese manuscripts from 2200 BC reference the fruit. In the 15th century, Spanish explorers introduced oranges in the New World, and by the 19th century, orange trees grew wild in Florida.

People throughout history have produced juice from oranges, but it wasn't until more recent history that large-scale orange juice production became practical. In the 1940s, Cedric Donald Atkins invented a process for producing concentrated juice that could be frozen. Combined with the expansion of modern home refrigeration, frozen concentrated orange juice (FCOJ) brought orange juice to millions of consumers.

Today, FCOJ is a popular global commodity traded on futures exchanges and part of the multi-billion dollar orange juice industry.

| HOW ARE ORANGES GROWN?

Orange trees are grown in tropical and subtropical climates with warm or hot summers and mild winters. Although they grow in many different varieties, the two basic categories are the sweet orange and the bitter orange. Sweet oranges are used to produce orange juice and can be divided into four classes:

1. Common Orange

Popular varieties among the dozens of common oranges include the Valencia, Hart's Tardiff Valencia and the Hamlin. The Valencia is the most popular juicing orange.

2. Blood or Pigment Orange

Two varieties - the light blood orange and deep blood orange. These fruits have a deep red hue.

3. Navel Orange

A common grocery orange that comes in several varieties including Cara cara, Bahia and dream navel.

4. Acid-Less Orange

Low acid fruits that are not cultivated in great quantities.

Orange trees are very climate-sensitive plants and need specific temperatures and precipitation levels to thrive. FCOJ traders must carefully monitor climate conditions in key growing regions; slight changes in temperatures or rainfall can create enormous price volatility for the commodity.

When they are actively growing outside of the winter months, orange trees do best in temperatures of between 55 and 100 degrees Fahrenheit. In the winter they are dormant and require temperatures higher than 35 degrees Fahrenheit. Trees are frost-sensitive and enter a danger zone if temperatures stay below 25 degrees for extended periods.

Orange trees do best in areas that receive between 40 to 45 inches of annual rainfall. They can tolerate drought conditions, but they tend to produce less fruit under extended dry conditions.

All citrus, including orange, must ripen on trees. The harvesting season for each variety of orange is different. Valencia oranges, which are the main juice crop, are harvested between March and July. In Florida, the main orange-producing state, oranges bloom between March and April.

Growers in Florida harvest 96% of the crop by hand using wooden ladders and canvas pick sacks. Mechanical harvesters pick the remainder of the crop. Pickers and mechanical harvesters dump the fruit into plastic tubs that hold about 900 pounds each of oranges. Special trucks called goats then load the tubs on to tractor-trailers that hold 45,000 pounds of fruit. Truck tractors then drive the tractor trailers to fruit processing plants.

HOW IS ORANGE JUICE PRODUCED?

FCOJ juice competes with two other juices not squeezed directly at the time of consumption: reconstituted liquid juice and not-from-concentrate (NFC) juice. In the mid-1980s, NFC juice surpassed FCOJ in sales. However, FJOC is the easier product to store (it doesn't perish) and ship (it's condensed). Therefore, FCOJ remains the benchmark commodity for measuring the price of orange juice.

Producers in Florida take the following steps when making FCOJ:

1. Sample the fruit to ensure quality
2. Clean and wash the fruit
3. Recover orange oil from the peel of the fruit
4. Extract juice from the fruit. Approximately 50% of the weight of an orange is juice. Screen the juice to remove seeds and large pieces of pulp
5. Heat the juice to inactivate natural enzymes that inhibit the quality of the product
6. Concentrate the juice in a high vacuum evaporator to remove the water and concentrate the juice sugars and solids
7. Freeze and store the concentrate
8. Blend the concentrate with fresh juice to enhance the flavor of the final product

Over 90% of oranges grown in Florida go into juice production in all forms. Unlike most other agricultural commodities, orange juice is purely a dietary staple and doesn't have other industrial or consumer uses.

WHAT DRIVES THE PRICE OF ORANGE JUICE?

Weather

Weather plays an enormous role in moving orange juice prices. **Florida is the epicenter of orange juice production in the United States, and the state experiences very volatile weather conditions.** In recent years, damage from hurricanes in the fall and excessive frost in the winter has decimated many orange groves.

Orange juice traders pay very close attention to weather forecasts. Sometimes anticipation of bad weather, such as an approaching hurricane, can cause big spikes in orange juice prices. If the damage from bad weather turns out to be less than expected, prices can retrace back to where they started.

Consumer Demand

Consumer demand for orange juice is surprisingly more volatile than other agricultural commodities. In recent years demand has been declining precipitously, particularly in the United States.

There are many potential explanations for this decline. The diminishing cultural importance of breakfast and the high sugar content of orange juice are two possible reasons. However, most of the consumption declines have occurred in the United States and Germany, while emerging countries such as China, Brazil and Russia are seeing increases.

Orange juice traders should pay attention to these consumption patterns as they can offer important clues about future prices.

USDA Production Estimates

The United States Department of Agriculture (USDA) publishes estimates each October that forecast orange production for the coming year.

Satellite imagery of orange groves and modern advances in estimating agricultural yields should make this number fairly predictable, but it's not predictable at all. In recent years, forecasting errors have led to supply surprises, and these surprises can move markets.

Supply surprises from Brazil, the world's largest producer of orange juice, can also create price volatility. In fact, despite declining global demand for orange juice, prices have stayed firm due to supply shortages from both the United States and Brazil.

Food Safety Concerns

Food safety concerns can cause supply shocks and higher orange juice prices. Growers often use chemicals and pesticides to protect their crop from insect damages. In the past, use of these products has led to **bans on orange imports and higher orange juice prices.**

Diseases

Crops in both Brazil and the United States have faced threats in the recent past from diseases that kill orange trees. Whether or not scientists are successful in eradicating these diseases could have a big impact on orange juice prices.

HOW IS ORANGE JUICE PRODUCED?

Bet on Global Warming

Unusual weather patterns have had such a devastating effect on orange crops in the recent past.

Many scientists attribute increased hurricane activity in Florida to global warming. Similarly some blame drought conditions in Brazil on a rise in temperatures. These weather conditions have produced supply shocks for orange juice in the past and may do so again in the future.

Bet on Emerging Market Demand

Emerging market countries such as China and Russia have not consumed orange juice for as long as Western countries have. These countries have been surprising bright spots in an otherwise bleak picture for orange juice demand. As emerging market countries grow their economies, their demand for orange juice may increase. Buying orange juice futures may be a way to participate in that demand.

Inflation Hedge

Investing in orange juice is a way to hedge against the loss of purchasing power from inflation. Low interest rates from the Federal Reserve and other central banks have produced speculative bubbles in many assets classes. Although food remains the most basic and fundamental necessity, agricultural commodities have yet to experience significant price hikes. However, inflation has the potential to change that. Since orange juice has essential nutrients including vitamin C and potassium, it could be a food commodity that garners huge demand.

SHOULD I INVEST ON ORANGE JUICE?

Orange juice prices are extremely volatile. For the most part, industry players that want to hedge risk utilize orange juice futures. However, traders that want to speculate on orange juice prices might consider doing so as part of a diversified basket of commodities.

Investing in a basket of commodities that includes orange juice, other agricultural commodities, metals and energy can accomplish two goals:

- Protection against inflation
- Protection against the volatility of individual commodities

Although the demand picture for orange juice has been weak in the United States and Western European countries, there is still likely ample demand for orange juice prices to stabilize. The supply picture, on the other hand, continues to look great for traders. The leading producing countries – Brazil and the United States – face ongoing and seemingly insurmountable production problems due to weather and disease.

Traders should, however, consider these three risks of investing in orange juice:

- 1. Growing concerns about obesity and diabetes** have put all items with sugar in the crosshairs of health advocates. Orange juice has high levels of natural sugars.
- 2. Efforts to eradicate tree diseases may be successful.** This could lead to bumper orange crops.
- 3. Global warming may be over-hyped or not the cause of stronger hurricanes.** If calmer weather patterns return to Florida, then maybe the citrus industry can rebuild.

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WHAT DO EXPERTS THINK ABOUT ORANGE JUICE?

Experts generally have an optimistic outlook about orange juice prices due to severe supply shortages. One expert cites record low Florida orange production:

“

“It could be pretty bad — lowest since around 1946. About 70 percent of what they were projecting is lost across the board.”

Gene McAvoy, agriculture expert, University of Florida

Another analyst agrees and notes that the market is on edge. Jack Scoville, vice president for Price Futures Group in Chicago, cites very low production estimates from the Florida Citrus Mutual, a trade organization, as reasons for optimism about prices:

“

“If the crop is anywhere near that small, even with the lousy [orange juice] demand outlook and things like that, we'll have a chance to push the market up around \$2 [a pound].”

Jack Scoville, vice president for Price Futures Group in Chicago

| PALM OIL



WHY IS PALM OIL VALUABLE?

Palm oil is an edible vegetable oil derived from the reddish pulp of the palm fruit. The fruit grows on the oil palm tree, which is native to West Africa. The history of the oil palm plant spans more than 5,000 years. Evidence shows that early West Africans consumed the fruit as a food staple, while the ancient Egyptians buried their dead with casks of palm oil. However, it wasn't until the 1700s that palm oil became an important international commodity. The use of palm oil in industrial lubricants, candle-making and other industries fueled the British Industrial Revolution and ushered in the modern era.

Today, palm oil is used in everything from food products to detergents to cosmetics. It is even increasingly being used as a biofuel. The size of the global market for palm oil is expected to reach more than \$90 billion by 2021. As a result, the commodity plays an important role in world markets.

HOW IS PALM OIL PRODUCED?

Oil palm trees are tropical plants that grow in climates with warm temperatures, sunlight and plenty of rainfall. The crops do not produce fruit until three to four years after planting, so establishing a profitable plantation requires advanced planning.

Oil palm production begins by clearing the site of the palm grove and removing tree stumps. However, the crops do not get planted in the grove for another 19 to 20 months. Growers must first nurture the seeds in other environments. The process begins by germinating the oil palm seeds in very hot rooms. The high temperatures help facilitate faster growth. Typically after about 90 to 100 days, a seed germinates and produce a seedling with a young stem and root. The seedlings are then planted in small plastic containers to mature. They remain in the containers for four to five months, where they grow a new leaf about every month. When a plant grows a two-pointed (bifid) leaf, it is removed from the container and transplanted into a nursery.

The seedlings stay in the nursery for about a year. When the plant has 15 green leaves, it is planted in the palm grove. For the next several months, the plant begins to produce first male flowers, which are grouped in spikes, and then female flowers, which form their own clusters. The male flowers fertilize the female flowers and produce clusters of fruit. The trunk, called the stipe, contains one bud, which is the growing point. If this dies, the tree dies as well. The growing point produces 20 to 25 leaves each year, and each leaf produces a flower that eventually yields fruit. Each fruit of the oil palm contains pulp, which is crushed to yield palm oil, and a single seed, which is crushed to yield palm kernel oil.

Oil palms generally produce fruit 30 months after planting in the fields and harvesting begins six months later. Plants between 7 and 18 years old yield the most fruit. Once harvested, the fruits must be processed within 24 hours to prevent a buildup of fatty acids.

Fresh fruit bunches are transferred to palm oil mills where they are sterilized with high-pressure steam. After steaming, pressing machines crush the fruit to extract crude palm oil. The palm seed (or kernel) is crushed to produce palm kernel oil. Palm oil is cultivated in 43 countries in Asia, Africa, and South America. However, 85% of production takes place in Indonesia and Malaysia.

The top importers of palm oil are India, European Union, China, Pakistan and Bangladesh. The versatility of palm oil makes it popular in a variety of products. **An estimated 50% of food and non-food items on supermarket shelves contain palm oil.**

4 MAIN USES OF PALM OIL

1. Food

Palm oil is rich in carotenoids and vitamins D, E and K. It has a high resistance to oxidization, which gives it a long shelf life. In addition to its use as a frying oil, palm oil is found in many foods including the following:

- Margarine
- Non-dairy creamers
- Ice cream
- Cookies
- Cereals

2. Consumer Items

Many everyday consumer items contain palm oil:

- Soaps
- Detergents
- Greases

- Lubricants
- Candles
- Personal care and cosmetics (mainly palm kernel oil)
- Bactericides
- Pharmaceuticals
- Water treatment products

3. Animal Feed

Palm kernel expeller is used in some animal feed.

4. Biofuels

Palm oil is often the feedstock for the production of biodiesel.

WHAT DRIVES THE PRICE OF PALM OIL?

Supply

Most of the supply of palm oil comes from two countries – Indonesia and Malaysia. As a result, the price of the commodity can be heavily influenced by government policies and news from these countries.

The expanding population in Indonesia and the government's push to support biodiesel has resulted in higher domestic consumption. If these trends continue, Indonesian exports of palm oil could decline in the years ahead. This could lead to higher prices. Indonesia also levies export taxes on palm oil, which have varied throughout the years. Changes to this tax could also have an effect on palm oil prices.

Weather

The concentration of palm oil supply in a small handful of countries also magnifies the role that weather plays in determining prices. The tropical climates of Indonesia and Malaysia make them susceptible to heavy rains and flooding. These conditions could delay the harvesting and processing of crops and create supply shortages. Extreme dry weather could also impact prices. Oil palm plants depend on ample rain to grow and flower. Drought conditions might not only limit fruit yields on plants, but they also have the potential to kill entire plants.

Competing Oils

Oil produced from palm fruit and kernels competes with many other oils including sunflower, soybean, rapeseed, corn, canola and cottonseed. The demand for these oils will fluctuate mostly based on price and availability. Political and weather events in regions that produce these other grains could impact their price and availability.

Perception about health benefits and risks could also play a big role in determining demand for competing oils. Palm oil is high in saturated fats, and consumption of this type of fat is a source of controversy.

Environmental Concerns

Palm oil has received a great deal of bad publicity because its production has led to deforestation in large parts of Indonesia. Producing the crop requires clearing large plots of land, and these actions impact the biodiversity and ecosystems of the growing regions.

Critics say that production of oil palm has a devastating environmental impact. Habitat degradation, climate change, animal cruelty and indigenous rights abuses are among the potential consequences of growing the crop. Some organizations, including SPOTT, are promoting sustainable oil palm practices. However, if the public mood about palm oil production sours, prices could suffer.

Biofuel Demand

Biofuels currently represent a small but growing use for palm oil. Factors such as the price of corn and other sources of feedstock could impact this demand.

3 REASONS YOU MIGHT INVEST IN PALM OIL

Inflation Hedge

Investing in palm oil might be a way to hedge against the loss of purchasing power from inflation. Global central banks have kept interest rates low for an extended period of time. This has led to speculation in many asset classes including equities, bonds and real estate. At some point, the low rate environment could produce serious inflation. Some commodities have been strong in recent years, but on average they have not kept pace with gains in other asset classes. In periods of inflation, food prices are almost certain to rise. Investing in palm oil may be a way to profit from asset inflation.

Bet on Demand Growth

Three of the top five importers of palm oil are the fast-growing countries of India, China and Pakistan. As the populations of these countries increase, their demand for food is certain to grow. The presence of palm oil in so many items means it is likely to see higher prices.

As many emerging countries grow wealthier, their consumption of meat should rise. Since palm kernel is used in animal feed, demand for this product may grow as well.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as palm oil provide a way to diversify and reduce overall portfolio risk.

SHOULD I INVEST IN PALM OIL?

Investors that want exposure to palm oil prices might consider buying a basket of commodities that includes other agricultural staples such as wheat, corn, barley, soybeans, and canola. For additional diversification, they may want to invest in other commodities including metals and energy. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds overall diversification to an investment portfolio.

There are two specific trends that could boost palm oil prices in the years ahead:

- 1. Emerging market demand:** China, India and Pakistan could all play critical roles in driving palm oil prices higher in the years ahead. The countries have enormous populations to feed.
- 2. Biofuel demand:** Almost all countries are focused on sustainable sources of energy, and biofuels may play an important role in this endeavor. Buying palm oil is a way to bet on this trend.

However, traders should consider these risks of investing in palm oil:

- **Health concerns may sour consumers on palm oil consumption.** The high saturated fat content in palm oil makes it a controversial dietary choice. If more studies show detrimental health effects from palm oil consumption, demand could suffer.
- **Environmental concerns about palm oil production have the potential to lessen demand.** In particular, Indonesia is now the third largest greenhouse gas emitter after China and the United States. If concerns about global warming intensify, demand for palm oil could suffer.

WHAT DO EXPERTS THINK ABOUT PALM OIL?

One of the leading experts on palm oil is bullish about the prospects for prices. He cites the tightness of supply and weakness in production from the two main suppliers – Indonesia and Malaysia – as sources for his optimism:

“

“Peak stocks in Malaysia will not exceed 2.3 million tonnes by January 2018. After that stocks will decline ... all the way to July 2018 and we shall have a period of the tightest ever stocks in history.”

Dorab Mistry, leading edible oils analyst

| PORK BELLY



WHY ARE PORK BELLIES VALUABLE?

Pork bellies are cuts of meat taken from the pig's stomach. The high fat content of this cut makes it ideal for producing bacon. Pork bellies have a long and storied tradition in financial markets. In 1961, their commoditization ushered in the first livestock trading markets on the Chicago Mercantile Exchange (CME). Over the years, they attracted a wide following from market analysts and traders eager to try to profit from the ups and downs of this niche market.

In 2011, the CME announced the end of pork bellies trading on its exchange. Extreme volatility coupled with dwindling trader interest made the product no longer relevant to financial markets. However, pork bellies and bacon remain dietary staples for many people around the world, and demand for these products remains robust. For this reason, prices for pork bellies still influence global commodity markets.

WHY DID PORK BELLIES BECOME A COMMODITY?

The market for pork bellies started as a result of Americans' love affair with bacon. Before the advent of a transparent futures market for pork bellies, pork manufacturers experienced wild swings in their cost of producing bacon. The reason for this volatility was the seasonal nature of bacon demand in the United States in the 1950s and 1960s.

Although hog farms produced a steady supply of pork year-round, **demand for particular cuts of pork varied by the calendar**. In the hot summer months, Americans grilled more foods and used bacon as a topping on items ranging from summer salads to hamburgers. In the cold winter months, demand for bacon declined. Pork producers aware of these seasonal fluctuations began buying, freezing and warehousing pork bellies. The idea was to smooth out their production costs and make their profits more predictable.

Since pork bellies can be frozen for up to a year, the idea made economic sense. Not only could pork manufacturers insulate themselves from seasonal fluctuations in bacon demand, they also could protect against other supply shocks such as declines in hog production. Ultimately, the growing interest in buying and selling pork bellies ushered in the pork belly futures contract on the CME.

Traders looking to capitalize on arbitrage opportunities began trading contracts to buy and sell standardized lots of pork bellies in the future. **A standard lot consisted of a 40,000-pound frozen slab made up of eight- to 18-pound individual cuts**. These standardized contracts provided traders, slaughterhouses and manufacturers with a transparent market for pricing pork bellies and conducting business.

Over the years, the seasonal patterns of bacon consumption became less pronounced. Americans began consuming more bacon year-round for a variety of reasons:

1. **Migration and demographic shifts** resulted in more Americans moving south to states with less extreme seasonal weather differences.
2. **The fast-growing Latino population in the United States** has fueled year-round demand for pork products including bacon.
3. **Americans are dining out more** and the food service industry is supplying more recipes with pork bellies.
4. **The Pork Board**, a leading industry group, is promoting consumption of a variety of cuts of pork including pork bellies.
5. **The growing popularity of Asian foods** such as banh mi has created demand for pork bellies.

The unpredictability of seasonal bacon demand may have contributed to excessive volatility and dwindling interest in the CME pork bellies futures contract. **However, overall pork belly demand is greater than ever, and pork producers still need to purchase the commodity to satisfy consumer demand**.

| HOW ARE PORK BELLIES PRODUCED?

The production of pork bellies begins on hog farms that raise the animals for food. Modern hog farms have evolved dramatically in recent year as large private and corporate operations have replaced small family farms. The advantages of these mega-farms are two-fold:

1. **Lower production costs**: Economies of scale allow farmers to feed pigs more efficiently and better utilize their labor. This results in more affordable cuts of pork for food manufacturers.

2. Negotiating leverage: Larger farms can enter into better contracts with packing operations – the companies that slaughter, process, pack and distribute cuts of meat such as pork bellies. Packers are usually willing to pay more for hogs if a farmer can offer a consistent supply of the animals.

It takes about six months to raise a pig from birth to slaughter. At the time of slaughter, a typical hog weighs about 270 pounds. Packing facilities purchase whole hogs from hog farms, slaughter them and process them into a variety of cuts of meat, which they sell to retailers. **A typical 270-pound hog will yield a 200-pound carcass with an average of 25% ham, 25% loin, 16% belly, 11% picnic, 5% spareribs and 10% butt.**

TOP 3 USES OF PORK BELLIES

1. Bacon

This product from the pork belly is usually cured with nitrites and nitrates and smoked over various types of wood. Bacon is used in a variety of recipes:

- Sandwiches including the famous BLT
- An accompaniment to eggs at breakfast
- An accent to salads
- An ingredient in pasta dishes
- A flavor enhancement for vegetable dishes
- An ingredient in chocolate bars, potato chips and other snacks

2. Roasted Pork Belly

Pork belly can be seasoned with spices and oven-roasted. It can be sliced and used in a variety of dishes:

- Barbeque sandwiches
- Chinese pork buns
- Tacos
- Cantonese roast pork belly
- Chinese scallion pancakes

3. Braised Pork Belly

This long and slow cooking process melts the fat and creates a tender final product. Braised pork belly can be shredded and used in tacos, sandwiches or skillet dishes among other things.

WHAT DRIVES THE PRICE OF LIVE CATTLE?

Belly Stocks

Pork bellies typically go into cold storage at the end of each calendar year. Historically, winter has been the season with the lowest demand for pork belly products. However, recent consumption patterns show less seasonal differences in demand. **Strong demand for pork bellies during the winter can cause a dwindling of stocks.** This, in turn, can create tightness in the supply and higher prices.

The United States Department of Agriculture (USDA) publishes data tracking monthly cold storage stocks for pork bellies. Traders carefully monitor this data for clues about the future price of pork bellies. Unexpected reductions or increases in belly stocks can have dramatic effects on prices.

Chinese Demand for Pork Products

China is a giant in both pork production and consumption. The country produces and consumes about half of the world's supply of pork products. In addition, China accounts for about 20% of the global supply of pork imports.

Consumption of pork products around the globe had been rising at a very robust rate until a few years ago. Since then consumption has risen modestly. Some of the slowdown in growth is attributable to a moderation in Chinese demand as consumers substitute more vegetables for pork in their diets.

China will undoubtedly continue to dominate the world in pork consumption. The country has a long history of favoring pork over other animal proteins. As its population grows and gets wealthier, it will likely ramp up consumption again. Pork belly prices are very likely to be correlated with overall pork demand. Since China drives the pork market, traders should pay attention to its consumption patterns.

US Demand for Bacon

US consumption of bacon has been on the rise in recent years. The bacon industry generates more than \$4 billion in annual sales in the country. Moreover, bacon is no longer just a breakfast item in the United States. The product appears in everything from desserts to alcoholic beverages.

There are many explanations for the rise in bacon consumption. The popularity of high-protein diets and the emergence of bacon as a trendy food are two possible reasons. **Increased US bacon demand has produced tremendous volatility in pork belly prices.** Supply shortages have caused prices to skyrocket and then eventually retrace. This price action suggests US consumers are sensitive to higher bacon prices. Traders should pay close attention to US per capital consumption patterns for clues about pork belly prices.

Supply of Hogs

The pork belly market requires a steady supply of hogs to meet demand, so surpluses or shortfalls can impact prices. These factors play the biggest role in determining hog supplies:

- 1. Weather:** Extreme hot weather in the late summer and early fall can make hogs inactive and impede breeding. On the other hand, cold weather in the winter can promote breeding and increase the supply of hogs in the spring.
- 2. Feed Prices:** The cost of feeds and grains represents more than two-thirds of the production costs of raising hogs. Interestingly, as feed costs rise, the supply of hogs rises and prices fall. This is because farmers take their hogs to market at lower weights to avoid paying these high feeding costs.
- 3. Diseases:** Diseases and viruses can decimate hog inventories and cause prices to spike.

Opaque Marketplace

The lack of a transparent public marketplace for pork belly futures can cause huge price swings in the commodity. Up until 2011, traders could rely on the benchmark CME contract for price discovery. The USDA National Daily Hog and Pork Summary is the only reliable data on negotiated sales of pork bellies.

SHOULD I INVEST IN PORK BELLIES?

Chinese Pork Demand

The world could be facing critical food shortages in the years ahead as the population in China and other emerging economies continues to grow.

Despite a slowing growth rate for pork demand in recent years, China continues to be the largest global importer of pork. The USDA estimates that consumption of pork in China will begin to rise again in the coming year.

Of course, the biggest determinant of demand in China will be the economy. However, pork has long been the favored animal protein in the country, and demand elasticity might be less than for other types of meat.

Inflation Hedge

Investing in pork bellies is a way to hedge against the loss of purchasing power from inflation. Livestock is almost certain to become more expensive if the world economy starts to overheat.

Food remains a basic and fundamental necessity so prices for pork bellies and other food commodities could see the largest increases if the economy experiences higher inflation.

Portfolio Diversification

Investing in pork bellies might be a way to diversify a portion of a portfolio out of stocks and bonds and into commodities.

WHAT DO EXPERTS THINK ABOUT PORK BELLIES?

Analysts see the pork bellies market as very sensitive to supply and price changes. When supplies are tight and prices are low, demand tends to surge and prices move higher. However, high prices have proven that demand for the commodity is highly elastic:

“

What goes up must come down. The retail bacon price spike dampened consumer and food service sales. That, in turn, has sent wholesale pork belly prices falling about 50 percent in the past few weeks.”

Steve Meyer, a pork analyst at Indiana-based EMI Analytics

RANDOM LENGTH LUMBER



WHY IS LUMBER VALUABLE?

Lumber is the term for wood that has been processed into beams or planks of varying lengths. It is a key commodity for a variety of industries including **homebuilding, furniture manufacturing, wood flooring and kitchen cabinetry**. Evidence shows that the use of wood in construction precedes written history. In a site near Nice, France, archaeologists discovered a hut constructed with wooden supports that was built more than 400,000 years ago. Early craftsmen used iron axes, saws and chisels to cut wood. However, by around 375 AD, sawmills – facilities for processing wood – began operating in Northern Europe.

Today lumber, which is also known as timber, contributes \$600 billion to the global economy. This equates to 1% of total global GDP. With demand for lumber expected to quadruple over the next three decades, the commodity will play a vital role in the international marketplace.

HOW IS LUMBER PRODUCED?

Loggers use two categories of trees to produce lumber – hardwoods and softwoods.

About 80% of all lumber comes from softwood trees.

Description

Hardwoods: Produced from flowering trees that usually have broad leaves . Hardwood trees shed their leaves in the winter.

Softwoods: Produced from trees that don't produce flowers or fruits and usually have needles and cones. Softwood trees don't shed their needles and remain green throughout the year.

Uses

Hardwoods: High-quality furniture, decks, flooring and higher-end construction projects including paneling and trim work.

Softwoods: Windows, doors, lower-end furniture, medium-density fiberboards, paper, Christmas trees and construction including wall studs, rafters, beams and posts.

Examples

Hardwoods: Alder, balsa, beech, hickory, mahogany, maple, oak, teak, walnut

Softwoods: cedar, Douglas fir, juniper, pine, redwood, spruce, yew

Density

Hardwoods: High

Softwoods: Low

Cost

Hardwoods: High

Softwoods: Low

Growth

Hardwoods: Trees take longer to grow

Trees grow more quickly

Fire Resistance

Hardwoods: High

Softwoods: Low

Length Availability

Hardwoods: 4 - 16 feet

Softwoods: 4 – 24 feet

Both hardwood and softwood lumber receive grades based on the quantity and types of defects in the wood.

The lumber manufacturing process takes place in several steps:

1. Felling

Loggers visually inspect trees and designate those ready to be cut down. Most felling takes place using gasoline-powered chainsaws. Workers make two cuts at the base of the tree to control the direction of the fall. Once the tree has fallen, loggers trim the limbs with chainsaws and cut the tree into pieces for transportation. Diesel tractors or self-propelled yarders drag the tree pieces to a cleared area where they are loaded on trucks for transportation to lumber mills.

2. Debarking and Bucking

Sharp-toothed grinding wheels or high-pressure water jets remove the bark from the tree pieces. Chain conveyers then carry the pieces into the mill where they are cut into predetermined lengths.

3. Sawing

Millworkers saw the log pieces in one of two ways depending on the size of the logs. Logs larger than two to three feet in diameter are clamped into a movable carriage and scanned with optical sensors. These sensors determine the optimal cutting pattern to maximize the lumber yield from the log.

A vertical band saw called a headrig saw makes a series of cuts. The first cut produces a piece of wood known as the slab. This piece is usually discarded and ground into paper pulp. Subsequent cuts produce logs of varying sizes. Band saws process the logs smaller than two feet in diameter by cutting them into one-, two- or four-inch thick pieces with one cut.

4. Re-sawing

Chain conveyers move the large pieces cut by the headrig saw. Multiple-blade band saws then cut these pieces, which are known as cants, into predetermined sizes and trim the outside edges into squares. Drying (Seasoning) Kilns or air dryers remove the moisture from the cut pieces. The pieces are stacked in covered areas with space between each stack to allow air to circulate. Air-dried lumber typically retains about 20% moisture while kiln-dried lumber retains less than 15% moisture. Interior floors, molding and doors often require kiln-dried lumber since its lower moisture content means less shrinkage.

5. Grade Stamping

Mechanical or manual inspectors then grade each finished piece of lumber and stamp this information on the lumber along with the identification number of the mill and the moisture content. Workers then bundle the pieces with steel bands and load them on to trucks for shipment to lumber yards. Lumber yards then sell the products to consumers.

3 MAIN USES OF LUMBER

1. Construction

Lumber is used in a variety of residential construction projects:

Paneling ● Trimwork ● Windows ● Doors ● Beams ● Studs ● Rafters ● Posts

2. Furniture

Many home and office furnishing items are made from lumber including chairs, desks, beds, tables and nightstands.

3. Flooring

Lumber is used in constructing indoor flooring and outside decks.

WHAT DRIVES THE PRICE OF LUMBER

Construction and Housing Data

Lumber is, by far, the most important building material used to construct new homes. On average, a new home contains 15,000 board feet of softwood. In addition, new home buyers typically purchase furniture and accessories made from both softwoods and hardwoods.

Lumber traders carefully monitor housing starts and construction data for clues about future demand. A surge in new home starts could mean a tight supply for the commodity and higher prices in the near- and intermediate-term. More generally, macroeconomic data such as nonfarm payrolls and GDP can also impact future lumber demand.

Trade Policies

The United States is the largest consumer of roundwood and, along with China, consumes the vast majority of the global supply of sawnwood. However, the United States is unable to meet its demand through domestic production and relies heavily on imports from other countries. Canada supplies nearly one-third of US annual lumber consumption.

Although the two countries share a border and a long history of friendly relations, they also have a history of trade tensions. The imposition of tariffs and quotas in the United States can have a major impact on lumber prices. Similarly, the extent to which Canada and other exporters subsidize lumber production can also impact prices.

Availability and Price of Substitutes

Wood competes with other building materials such as plastics and metals. The demand for each of these materials will fluctuate mostly based on price and availability. If manufacturers can source alternatives at a lower cost than lumber, then they will usually substitute those materials for wood.

Of course, if lumber prices are significantly lower than other materials, then builders might increase their demand for wood as a building material. These changes in demand can impact lumber prices.

Supply

Forest loss and forest change are two factors that can influence the supply of trees and, ultimately, the price of lumber. Forest loss, also known as deforestation, occurs when people clear forests in order to make land available for industry. **Deforestation can limit the availability of trees and the supply of lumber.** Fears of deforestation can also lead countries to impose restrictions on logging and limit the availability of land allocated to the industry. Ultimately, deforestation can lead to higher prices for lumber.

Forest change can occur when the composition and fertility of soil diminishes. This can lead to lower forest yields and smaller harvests. Ultimately, diminished output produces higher lumber prices.

3 REASONS YOU MIGHT INVEST IN LUMBER

Inflation and Weak US Dollar Hedge

Investing in lumber is a way to bet on a weak US dollar and higher inflation. Commodities such as lumber are priced in US dollars, so the performance of the world's largest economy plays a crucial role in their pricing. The US Federal Reserve Bank has kept interest rates low and the US dollar weak for many years.

US central bankers are likely to continue these policies to support consumer borrowing and consumer spending. These conditions are likely to be very beneficial for lumber prices. A weak dollar could stoke inflation concerns. Since there are a limited supply of trees, the price of lumber would likely benefit from fears of inflation.

Bet on Demand Growth

A low interest rate environment combined with a rebounding housing market is likely to be a very beneficial environment for lumber prices. Housing prices are very sensitive to interest rates since interest rates determine mortgage rates. As long as rates remain near historically low levels, demand for housing, and therefore lumber, should continue to remain strong.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as lumber provide traders with a great way to diversify and reduce the overall risk of their portfolios.

SHOULD I INVEST IN LUMBER?

Traders who want exposure to lumber prices should consider purchasing lumber along with a basket of other commodities that includes agricultural commodities (i.e., dairy, meats and grains), as well as metals and energy. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds overall diversification to a stock and bond portfolio. There are two specific trends that could raise lumber prices in the years ahead:

Housing Demand: Demand for housing is likely to rise worldwide in the years ahead. Emerging market countries such as China and India are building more wealth and creating rising middle classes. Demand for lumber products to construct and furnish homes should continue to grow as a result of housing demand.

Deforestation: There is a limited amount of land, and many industries such as livestock and farming compete with loggers for land. This competition has the potential to create lumber shortages.

However, traders should also consider the risks of investing in lumber:

1. A global spike in interest rates could weaken housing demand and depress lumber prices.
2. Overproduction by large lumber companies could depress prices.
3. Global economic or political turmoil could weaken demand for commodities in general.

WHAT DO EXPERTS THINK ABOUT LUMBER?

Experts are generally ambivalent about the direction of lumber prices. In the view of one National Association of Home Builders (NAHB) economist, a pattern of devastating natural disasters in the United States, including wildfires and hurricanes, should fuel demand for lumber as homeowners rebuild. However, this demand may come at the expense of lumber demand for new construction:

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“Across the nation, there typically is no persistent impact [on lumber prices] over the medium-term. One of the reasons is that construction activity during the rebuilding process will often times partially offset the decreased demand for lumber in new-home construction.”

Robert Dietz, NAHB Chief Economist

Another NAHB economist believes more time is needed to assess the effects of natural disasters and new trade policies on lumber prices:

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“Other factors are also at play right now, which further complicates things. The wildfire outlook is uncertain at this point, and duty rates on Canadian lumber are being reevaluated.”

David Logan, NAHB economist

| ROUGH RICE



WHY IS ROUGH RICE VALUABLE?

Rough rice is the whole rice grain that is harvested from the rice plant. It includes the hull, which is the hard protective covering that accounts for 20% of the grain's size.

Also known as paddy rice, rough rice has a coarse consistency. It can be transformed into brown rice by removing the hull or white rice by removing the hull, bran layer and cereal germ.

Archaeological evidence shows that rice domestication began more than 8,000 years ago in the Yangtze Valley in China. The crop steadily proliferated to other regions, and by around 2,000 BC, the ancient peoples in the Ganges region of India were cultivating rice as a food source.

Today rice is a staple in the diets of more than half of the world's population, especially in Latin America, Asia and the Middle East. Annual production of milled rice tops 480 million metric tons, which makes it the third most produced grain in the world after corn and wheat. Rice is a member of the grass family (Gramineae). There are more than 10,000 species of grasses, and they grow worldwide in a variety of climates. (Other grass crops that grow primarily as agricultural crops for humans include corn, wheat, sorghum, barley, oats and sugar cane.)

HOW IS ROUGH RICE GROWN?

Rice is cultivated in many diverse climates across the globe. As a result, four different growing methods have evolved:

1. Irrigated: Primarily found in East Asia, irrigated farming supplies 75% of global rice production. Irrigated rice grows in paddy fields.

2. Rain-fed Lowland: This farming method produces one crop per growing season and requires flooding of the rice fields with almost 20 inches of water. Growing regions include East India, Bangladesh, Indonesia, Philippines, and Thailand. Production is variable and inconsistent due to poor soil quality and drought and flood conditions in these regions.

3. Upland: These farming zones are located primarily in Asia, Africa and Latin America. Upland rice fields are usually dry, and the land can be low-lying, drought-prone, rolling or steep. Upland rice plants are usually rotated or interspersed with other crops.

4. Flood-prone: These farming zones are located mostly in South and Southeast Asia. Flood-prone zones are characterized by extreme flooding or drought conditions. As a result, yield is inconsistent and volatile. June to November is the rainy season in this region.

7 STEPS IN RICE PRODUCTION

Preparation

During this step, the soil is leveled and fields are plowed to prepare for planting. A key component of preparation is ensuring an adequate supply of water for the crop. Farmers surround fields with a water source controlled by dikes or levees. Pumps and reservoirs may be used to control the amount of water the crop receives.

Planting

Rice seeds are first soaked and then sown in flooded fields (or first in nurseries) either by machine or hand. Typical distribution is 15 to 30 seedlings per square foot.

Harvesting

Approximately three months after planting, the grains begin to ripen. The tops will droop and the stems will turn yellow. At this time, farmers drain water from the fields and begin the harvest. Sharp knives or sickles or mechanized harvester cut, thresh and stack the grains.

Drying

Machines that heat air or natural sunshine dry the grains to decrease moisture content to around 20%. Once dried, the grains are ready for processing.

Hulling

Machines or farmers clean the grains and remove the hulls. Milling Brown rice requires no further processing. To produce white rice, mills remove the outer bran layers and polish the remaining grain. They may coat it with glucose to increase its shine.

Enriching

During this step, the white rice grains are processed further to restore vitamins and minerals back into the finished product.

Global rice production is heavily concentrated in a small number of countries. China and India produce more than half of the annual global output, and the top five producers supply more than 70% of the global supply of rice.

WHAT DRIVES THE PRICE OF ROUGH RICE?

China and India Demand

Any discussion of rice prices inevitably centers on China and India. Although these two countries are the main producers of the commodity, they also combine to consume about half of the world's supply of rice. There are two possible scenarios to consider. As the population in India and China increases, their demand for food will grow. This could help boost rice prices. However, as these countries grow wealthier, they are also likely to adopt Western dietary norms. This could mean increased consumption of meat and other Western foods such as pasta and bread. Since rice has traditionally been viewed as a cheap source of food, its consumption may decline. Investors in rice should keep careful tabs on consumption patterns in these two countries for clues about future prices.

Inventories

Rice inventories can offer key information about supply surpluses and shortages. In recent years, China has been stockpiling more rice. While other countries including India and Thailand have diminishing stockpiles, these decreases pale in comparison to the size of China's increases. Elevated stockpiling by the world's largest consumer should be a troubling sign for prices. As these inventories increase, it lessens the chances for a supply shortage and increases the chance for a supply overhang on the market.

Climate

As with all agricultural commodities, climate plays a key role in determining rice supply and prices. Rice production, in particular, is highly sensitive to the availability of an ample water supply. Drought conditions in major rice-producing regions could create shortfalls in supply and lead to higher prices. Rice traders should pay close attention to precipitation levels and temperatures in key growing regions.

Trade Policies

Policies that affect the importing and exporting of rice have a significant effect on prices. India, for example, has placed limits or bans on rice exports in the past. Fears that these policies could resurface have the potential to create price spikes.

Crude Oil Prices

Rice production is an energy-intensive endeavor. Large-scale production requires machinery to irrigate fields and control water levels. During the harvest, mechanized cutters cull the crop, while other machines dry the grains. Each step of the process requires energy consumption. As a result, a rise in crude oil prices can make rice more expensive.

4 REASONS YOU MIGHT INVEST IN ROUGH RICE

Betting on Global Demand

Demographic trends across the globe bode well for rice consumption. Population growth in Europe and North America is stagnating, but in Africa, the Middle East and Asia, population growth is on the rise. These regions have traditionally consumed rice as a staple in their diet. As their populations increase, their demand for affordable food sources for their citizens will increase. Rice consumption should benefit from this trend.

Speculating on Climate Change

Rising global temperatures have the potential to wreak havoc on global crop outputs. As more regions experience drought conditions, the potential for food shortages increases. Rough rice prices should benefit.

How Does Rice Act as an Inflation Hedge?

Investing in rough rice is a way to bet on higher inflation. The US Federal Reserve Bank and central banks around the world have kept interest rates low for a long time. These policies are likely to continue since they support consumer borrowing and spending. Low interest rates have produced speculative bubbles in many assets classes, but not yet in agricultural commodities. Yet food remains the most basic and fundamental necessity. Food commodity prices could see the largest increases if the economy experiences higher inflation. Rough rice prices could benefit from these conditions.

Diversify Your Portfolio

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as rough rice provide traders with a great way to diversify and reduce the overall risk of their portfolios.

SHOULD I INVEST ON ROUGH RICE?

Rough rice competes for demand with the other agricultural commodities such as wheat and corn. Consumer preferences for one food staple over another often depend on price. As a result, the prices of many agricultural commodities are correlated with one another. Therefore, traders wanting to hedge their bets might want to buy a basket of commodities that includes rough rice, other grains, livestock, metals, energy and other staples.

Investing in a basket of commodities that includes rough rice and other commodities can mitigate risk and diversify the composition of assets in a portfolio. A basket of commodities can also provide protection against inflation and protect a trader from the volatility of movements in individual commodities.

Including rough rice in this basket may make sense for the following reasons:

- 1. Emerging Market Growth:** Africa, Asia and the Middle East have fast-growing countries that will have enormous food needs in the years ahead. These countries have a long history of consuming rice in their diets. As their populations grow, demand for rice may follow suit.
- 2. Climate Change:** Global warming is a positive catalyst for rough rice prices. Lower crop yields from droughts and excessive heat could boost the price of all agricultural commodities including rough rice.
- 3. Weak Dollar:** A weak US currency could be beneficial to agricultural commodities including rough rice.

However, traders should also consider the risks of investing in rough rice:

- 1. A global economic slowdown** could reduce demand for all agricultural commodities including rough rice.
- 2. A sustained drop in the price of other agricultural commodities** could siphon demand away from rough rice. While usually, such price drops are temporary, there is no guarantee that this will be the case in the future.

1. Changes in consumer preferences in India and China have the potential to depress demand for rough rice. These countries may adopt more Western dietary norms in the future. This could lead to reduced demand for rice products.

WHAT DO EXPERTS THINK ABOUT ROUGH RICE?

One agricultural economist for the United States Department of Agriculture (USDA) believes that tightening world supplies could produce higher prices in the months and years ahead. He believes that **poor weather conditions combined with diminishing global stocks could end the price slide for the commodity:**

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“You can see prices have been dropping, dropping for a while. But now we’re beginning to see tighter supplies in this country and in some other parts of the world.”

Dr. Nathan Childs, USDA Economic Research Service

However, Dr. Childs is still cautious. He notes that the excessive inventory buildup will take time to work itself out. In the meantime, there is no shortage of rice:

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“I look at the all rice ending stocks, and, as I said earlier, we came off three years of abnormally high global ending stocks with high stocks-to-use ratios of 24 percent to 25 percent. That’s too high. ”

RUBBER



WHY IS RUBBER VALUABLE?

Rubber is an important industrial material that derives from a runny liquid plant byproduct called latex. Latex is most often cultivated from the rubber tree, which is indigenous to the Brazilian rainforests. Other plants such as dandelions also produce the milky-white substance. The origin of rubber traces back to the early civilizations of Central and South America. Long before European conquerors arrived, the indigenous people of the New World used rubber to make bouncy balls, glues and even rubber sandals.

However, the discovery by Charles Goodyear in 1839 of a process called vulcanization transformed rubber from a craft material to a breakthrough product of the Industrial Age. **Vulcanization enabled manufacturers to convert natural rubber into more durable materials.** With the invention of the automobile in the late 1800s, rubber became an essential material in the production of tires, gaskets, hoses, floor mats and other automotive parts.

Beginning in the early 20th century, demand for rubber expanded as products ranging from bike tires to erasers to footwear employed the material in construction.

Today synthetic rubbers made from petroleum products compete with natural rubber in industrial applications. In recent years global consumption of natural rubber exceeded 12.5 million tons, while global synthetic rubber consumption approached 15 million tons. The importance of rubber to so many industries ensures that it will remain a leading commodity in global markets.

HOW DID THE RUBBER INDUSTRY EVOLVED?

Most natural rubber production comes from latex produced from the Brazilian rubber-tree (Hevea Brasiliensis). Although other species of plants excrete latex when the bark is cut, few produce enough of the substance to make them economically viable. Despite being native to Brazil, the rubber tree plant is almost exclusively produced in Asia.

Beginning in the late 1800s, English planter Henry Wickham exported 70,000 seeds from Brazil to England. These seeds soon made their way to Southeast Asia where farmers in Ceylon (modern day Sri Lanka) experimented with the plant. By 1895, more than 300,000 hectares of rubber plants grew in Ceylon and Malaysia. However, the beginning of World War II caused profound changes in rubber production. Realizing that Japan controlled large amounts of rubber-producing territory, the United States sought other sources of production.

The Rubber Development Corporation, finance by US industry, tried many ideas. They sent explorers into the Amazon to search for superior strains of rubber that could be grown closer to home. They even planted dandelions in 41 states. Ultimately, the venture that proved most successful was the development of synthetic rubber using petroleum products. By 1964, synthetic rubber accounted for 75% of the rubber market.

However, the OPEC oil embargo of 1973 created a new disruption for the rubber industry. Surging oil prices caused synthetic rubber prices to double. At the same time, the increasing popularity of radial tires, which required stronger natural rubber, lessened demand for synthetic rubber. By 1993, natural rubber consumption climbed to 39% of US market share. Today both natural and synthetic rubbers are used to make automobile tires and many other industrial products.

HOW DO YOU PRODUCE NATURAL RUBBER?

Rubber trees are tropical plants that require high year-round rainfall with little or no dry season. Dry spells or temperatures below 65 degrees Fahrenheit won't necessarily kill the trees, but it will reduce the latex output.

Many farmers grow rubber trees with oil palm as they both require deep soil, stable high temperatures and continuous moisture. Both trees often require extensive deforestation of land to make room for the crops to grow.

Rubber trees grow quickly and rarely exceed 25 meters in height in plantations. Growers plant the seeds in rows and space them appropriately so that the developing trees receive optimal sunlight.

Once the buds begin to grow, they each form a stem. Each stem produces shoots, which are removed through a process known as disbudding. The stem forms into a fine trunk with branches that form the crown of the tree.

After the first year, farmers replace the trees that have not grown with new seedlings. During this time, the growing trees must be periodically pruned. Between the fifth and seventh year of growth, rubber trees are ready for tapping. This is the process by which latex is removed from the trunk. Tapping continues for another 25 to 30 years. Rubber tree farmers use a special knife to cut a wide, V-shaped incision in the tree's bark and collect the latex that drips from the plant. They then filter and wash the latex before combining it with acid to get the particles to coagulate.

The unprocessed latex then goes through four more steps to produce commercial rubber:

1. Mastication

Machines grind up the raw rubber using mechanical rollers and presses. This makes the material more sticky and pliable.

2. Mixing

Chemicals are added to the raw rubber to make it more durable.

3. Calendering

Rollers squash the raw rubber into predetermined shapes. Some of the rubber may be squeezed through hollow tubes in a process known as extrusion.

4. Vulcanization

Workers add sulfur to the mixture and heat it to a temperature of 250 degrees Fahrenheit. This process makes the rubber stronger and more durable. Natural rubber production is highly concentrated in a small handful of countries. About 70% of the global supply comes from three countries – Thailand, Indonesia and Malaysia.

WHAT DRIVES THE PRICE OF RUBBER

1. Tires

Automobile tires are made up of about 50% natural rubber, while aircraft tires use 100% natural rubber.

2. Other Automotive

Rubber is used in many automobile parts including brake pads, gaskets, hoses and seals on windows, doors and windshields. Rubber is also used to make airbags.

3. Flooring

Gyms, commercial kitchens, animal shelters and playgrounds are a few types of floors often constructed from rubber.

4. Clothing

Natural rubber forms elastic, which is used in wetsuits, cycling shorts and other stretchable clothing items.

5. Erasers

Rubber can wipe away pencil marks.

6. Miscellaneous

Rubber is used to produce a variety of common items:

- Rubber gloves
- Adhesives and coatings
- Nozzles Gaskets for mechanical parts
- Flotation devices
- Ducting
- Gum
- Boots

WHAT DRIVES THE PRICE OF RUBBER?

Automobile Demand

About 75% of rubber produced worldwide goes to manufacture tires for automobiles. In addition, automobile manufacturers use rubber in many other car parts including bumpers, airbags, mats, hoses and seals. As a result, demand for automobiles is the most critical determinant of rubber prices. Rubber traders should closely follow global automobile sales for clues about the market. Emerging markets, in particular, may be important predictors of rubber prices. China is the largest market for vehicle sales, and, until 2015, was the fastest growing market in the world. India is the largest three-wheeler and second largest two-wheeler market in the world. Changes in vehicle purchase patterns in these economies can greatly impact rubber prices.

Crude Oil Prices

Increases in crude oil prices make synthetic rubber more expensive relative to natural rubber, while decreases have the opposite effect. Rubber traders should pay attention to the main factors that can influence crude oil prices. Changes in production levels by the OPEC countries have the potential to move markets, as do changes in production from the increasingly large US shale segment. A sustained rise in crude oil prices could be very bullish for natural rubber prices. Growers need time to clear land and grow rubber plants. This could create a temporary shortfall in natural rubber and higher prices.

Trade Policies

The concentration of rubber production means that a few countries wield incredible influence oversupply and prices. A group called the International Tripartite Rubber Council (ITRC), which is made up of top rubber-producing countries Thailand, Indonesia, and Malaysia, has historically instituted export curbs on rubber to help boost prices. With 90% of global rubber production earmarked for export to big economies such as the United States and China, decisions by this group can have a big impact on supply and prices.

4 REASONS YOU MIGHT INVEST IN RUBBER

Bet on Automobile Demand

The automobile market is the most critical industry for rubber producers. Investing in the commodity might be a way to bet on surging demand for automobiles in emerging market countries such as China and India.

Similarly, the low interest rate environment in the United States and Europe should bode well for the automobile industry. Low rates mean affordable access to credit markets. Since most buyers finance automobile purchases, rates play an important role in determining demand. As long as rates remain near historically low levels, demand for cars, and therefore rubber, should be strong.

Bet on Crude Oil Prices

An investment in natural rubber should perform well when crude oil prices are strong. As crude oil prices rise, synthetic rubber becomes less attractive relative to natural rubber. Growing demand for energy from emerging markets is one reason crude oil prices might perform well. Similarly, economic growth in developed Western countries remains strong. These factors, along with relatively dovish policies from central banks, could boost crude oil prices.

Inflation and Weak US Dollar Hedge

Investing in rubber is a way to bet on a weak US dollar and higher inflation. Rubber is priced in US dollars, so the performance of the world's largest economy can impact its price. The US Federal Reserve Bank has kept interest rates low and the US dollar weak for many years.

US central bankers are likely to continue these policies to support consumer borrowing and spending. These conditions are likely to be very beneficial for rubber prices. A weak dollar could stoke inflation concerns. Since there are a limited supply of rubber trees, the price of the commodity would likely benefit from fears of inflation.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Investing in rubber provides a way to diversify and reduce the overall risk in a portfolio.

SHOULD I INVEST IN RUBBER?

Traders who want exposure should consider purchasing rubber as part of a basket of commodities. To achieve true diversification, the basket should include rubber along with grains, livestock, lumber, metals and energy. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds diversification to a stock and bond portfolio.

There are three specific trends that could boost rubber prices in the years ahead:

Automobile Demand

Demand for automobiles should rise globally in the years ahead. Emerging market countries such as China and India are building more wealth and purchasing more cars, motorcycles and trucks. Demand for rubber to make tires and other car parts should expand with the auto market. Even electric cars require rubber for tires.

Crude Oil Demand

A growing global economy will likely create increasingly intense competition for energy resources. As oil prices rise, the demand for natural rubber as an alternative to synthetic rubber will grow.

Deforestation

There is a limited amount of land, and many crops such as palm oil compete with rubber for land. This competition has the potential to create natural rubber shortages.

3 RISK OF INVESTING IN RUBBER

1. Global spike in interest rates

A global spike in interest rates or a global recession could depress automobile demand.

2. Sustained fall in crude oil prices

A sustained fall in crude oil prices could lead to a drop in synthetic rubber prices. This could lead to an increase in demand for synthetic rubber and a drop in demand for natural rubber.

3. Global economic or political turmoil

Global economic or political turmoil could strengthen the US dollar and weaken demand for commodities.

EXPERTS OPINIONS ON RUBBER

Natural rubber prices have been sitting well below long-term averages in recent years. However, the CEO of a Singapore-based supplier of the commodity believes that the depressed environment may be coming to an end. He argues that commodity speculators have bundled rubber in with other poor-performing commodities and driven prices lower:

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“Shanghai futures are more driven by what they call the black commodity complex, so rubber is bundled with iron ore, with rebar, with coal and that is subject to a lot of speculative interest. With that, the raw material prices move around.”

Robert Meyer, CEO of Halcyon Agri

However, Meyer sees a change in the supply/demand fundamentals that could lift rubber prices along with other commodities:

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“This is an extremely interesting time for the rubber market. On a macro level, commodities have been in decline for a number of years, so the supply/demand is tightening. From a price point, this is a very good time to look at this market.”

| SOYBEANS



WHY ARE SOYBEANS VALUABLE?

Soybeans are an edible legume native to Asia and are an important source of protein in many modern diets. Chinese farmers first domesticated soybeans around 1100 BC. Since that time, cultures around the world have cultivated the crop as a food source.

In the 1920s, the A.E. Staley Manufacturing Company began crushing soybeans and produced two new products: unrefined soybean oil and defatted soybean meal. The former soon became an important ingredient in margarine and shortening, while the latter became a staple in livestock feed.

HOW ARE SOYBEANS GROWN?

Soybean plants grow in any climate with a warm growing season and ample water and sun. Farmers plant seeds in rows, and in four to seven days they sprout into plants. The planting season in the United States is between May and July, and harvesting occurs around September when the crop has fully matured. Soybeans grow in very similar conditions to corn, so many farmers grow both crops on the same acreage. At the beginning of the planting season, farmers choose which crop to plant. To make this decision in an economically rational way, they compare the new crop futures prices for each of the two commodities. December is the new crop month for corn, while for soybeans it's November. The relationship between corn and soybean prices, therefore, is an important inter-commodity spread. The corn-soybean spread is the number of bushels of corn needed to buy a bushel of soybeans. When the ratio is below 2.2:1, corn is historically expensive, while a ratio above 2.4:1 signals historically expensive soybeans.

| TOP 3 USES OF SOYBEANS

1. Soybean Oil

Soybean processors extract oil from the soybean, which can then be refined into cooking oil or used as an ingredient in food products such as margarine, salad dressings and mayonnaise. Many breads, crackers, cakes, cookies and pies also contain soybean oil. Biodiesel producers also buy soybean oil and use it to make fuels.

2. Soybean Meal

The soybean meal that remains after oil extraction can be toasted and prepared as animal feed for poultry, pigs, cattle and other farm animals.

3. Miscellaneous Uses

Soy is used in a variety of other products: Bio-composite building materials. Particleboard, laminated plywood and lumber products. Commercial carpets and home upholstery. Solvents and industrial lubricants. Soy ink and crayons. Foams for automobile upholstery.

WHAT DRIVES THE PRICE OF SOYBEAN?

US Production

The United States is the largest producer and exporter of soybeans, so events in the country bear watching. Political factor, such as crop subsidies, can have a significant effect on prices. In addition, US weather conditions could impact production numbers.

The US Dollar

The US currency is the world's reserve currency. As a result, soybeans and other commodities are quoted in US dollars. Soybean producers receive fewer dollars for their product when the US currency is strong and more dollars when the currency is weak. In addition, since the United States is the leading soybean producer, its price will likely continue to be quoted in US dollars.

Emerging Market Demand

China imports more soybeans than it produces. As its economy expands, its demand for agricultural commodities will grow. Similarly, India and emerging countries in Africa will require more food to feed their people as their economies grow. As emerging market countries grow wealthier, their consumption of meat will likely increase. Since soymeal is used to produce livestock feed, this should also boost prices for the commodity.

Of course, if emerging economies suffer economic setbacks, then soybean prices would probably suffer.

Alternative Oils

Oils produced from soybean meal compete with many other oil meals, including castor, rapeseed, linseed, and cottonseed. These meals are taking an increasing market share away from the soybean oil market. Ultimately, the pricing and availability of alternative oils can have an effect on soybean pricing.

Ethanol Subsidies

The US government heavily subsidizes corn farmers to boost ethanol production. US farmers make choices about growing corn and soybean crops at the beginning of the growing season. If corn subsidies were to end, farmers might devote more acreage to soybeans. The resulting increase in soybean supply would probably put pressure on prices.

Health News

News about the health benefits or detriments of consuming an agricultural commodity can often have a long-term impact on demand. Therefore, traders should pay close attention to medical studies on the health effects of soy consumption. If new information becomes available, prices could respond accordingly.

3 REASONS YOU MIGHT INVEST IN SOYBEANS?

Can Soybeans Serve as a Hedge on Inflation and Weak US Dollar?

Soybeans are a way to bet on a weak US dollar and higher inflation. Since agricultural commodities, such as soybeans, are priced in US dollars, the performance of the world's largest economy plays a crucial role in their pricing. Easy-money policies from the US Federal Reserve Bank have kept the US dollar weak. Furthermore, US central bankers are likely to continue these policies to support consumer borrowing and spending.

Will the Demand for Soybeans Rise?

Soybeans are likely to be a big beneficiary of strong global growth, especially in emerging market economies. Their demand for livestock feed and in oils will probably grow as the developing world becomes richer. Demand in the developed world may also outstrip supply in the coming years. And factors such as growth in biodiesels could contribute to this demand.

Diversifying Your Investment Portfolio

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as soybeans provide traders another way to diversify and reduce the overall risk of their portfolios.

SHOULD I INVEST IN SOYBEANS?

Investors who want exposure to soybeans should consider buying a basket of commodities that includes other agricultural staples such as wheat, corn, barley, and sugar. For true diversification, they should add metals and energy as well. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds overall diversification to an investment portfolio.

There are two specific trends that could boost soybean prices in the years ahead:

1. Soybeans and Emerging Market Demand

The development of emerging economies could boost soybean demand. As people in these countries accumulate wealth, they will probably start eating a more varied diet. The demand for livestock feed, soybean oils, and soy food products may grow.

2. How Will Climate Change Affect Soybean Production?

Global warming trends have the potential to wreak havoc on the production of many different crops including soybeans. If recent weather patterns continue, the world's supply of food may not be able to meet demand in the years ahead. Investing in agricultural commodities is a way to benefit from this trend.

However, traders should also consider the risks of investing in soybeans:

1. A strong US dollar could drive prices lower.
2. Overproduction by large suppliers could depress prices. This scenario could unfold, for example, if the United States ends corn subsidies.
3. More bad news on the health front could weaken consumer demand for soy products.

WHAT DO EXPERTS THINK ABOUT SOYBEANS?

Experts see both potential risks and rewards from investing in soybeans.

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“In general, I think the commodity complex is poised to move higher.”

Robert Chesler, vice president of the foods group at INTL FCStone

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“You can open a chain of restaurants in the agricultural areas of the world because the farmers are going to be much more successful in the next 30 years than in the last 30 years.”

Jim Rogers, founder of Quantum Fund

However, the US Department of Agriculture notes some data that should give traders reasons to be cautious. US farmers have been producing record amounts of corn, soybeans, and wheat in recent harvests. Furthermore, farmers are increasing their allocation of acreage to soybeans at the expense of corn.

| SUGAR



WHY IS SUGAR VALUABLE?

Sugar is a carbohydrate that has been used as an ingredient in food for thousands of years. Evidence suggests that people in New Guinea domesticated the sugarcane plant as far back as 8,000 BC and that civilizations in Asia began extracting sugar from the crop shortly thereafter. Today consumers use sugar to flavor foods (e.g. chocolates), to help retain moisture in baked goods (e.g. cakes), and to preserve and gel other foods (e.g. jellies and jams). Sugar can also be used to make ethanol fuel. These diverse applications make sugar an important commodity on the global markets.

HOW IS SUGAR PRODUCED?

Global production of sugar exceeds more than 120 tons annually and takes place in 121 countries. Although sugars reside in the tissues of most plants, the sugar cane and sugar beet plants provide most of the sugar grown commercially for production. The sugarcane plant, which is a tall grass with thick stems, accounts for about 70% of the annual global supply of the commodity, while the sugar beet plant supplies the remaining 30%. Historically, only the sugarcane plant produced sugar, and it yielded very small quantities. However, modern technology has increased the yield.

Although sugar is produced all over the world, the ten largest producing countries account for about three-quarters of all sugar production. Two countries, Brazil and India, produce about half of the global supply. This concentration of production makes sugar an especially volatile commodity.

WHY IS SUGAR VALUABLE?

1. Baked Goods

- Sugar inhibits the growth of certain microorganisms. This in turn slows down the spoilage of baked goods and helps them maintain their moisture.
- Sugar softens bakery products.
- Sugar provides a source of nutrition for the growth of yeast, which helps the leavening process.

2. Jellies and Preserves

- Sugar enhances the colors and flavors of many fruits, which makes it ideal in jellies and jams.
- Sugar aids the gelling process, which helps give texture to these products.

3. Candies

Sugar is the main ingredient in most candies. Its solubility makes sugar perfect for forming and shaping candies. Cooking Save Sugar is a key ingredient in custards and puddings as well as in savory dishes in many cultures.

4. Non-Food Uses

- The fermentation process to make alcoholic beverages uses sugar.
- Certain pharmaceuticals contain sugar.
- The textile industry uses sugar to size and finish fabrics.
- Sugar slows the setting of cements and glues.
- Sugar can be used to produce biofuels.

WHAT DRIVES THE PRICE OF SUGAR

Global Supply

The key driver of sugar prices is the global output of the commodity. The typical planting to harvest of sugarcane takes 12 to 18 months. Farmers have to prepare the soil, seed, irrigate and harvest the crop during this cycle. When farmers expect a favorable demand climate, they plant more crops, and when they expect weak demand, they plant fewer crops. When demand exceeds or fall short of supply, prices react accordingly.

Global Demand

An important constituent of global demand is the correlation between affluence and sugar consumption. Since sugar is viewed as more of a luxury than a necessity, wealthier economies generally have higher consumption than poor economies. Emerging economies in Asia and South America are the fastest growing consumers of sugar, so continued strength in these economies is positive for prices, while an emerging market bust could depress prices.

The Brazilian Real

Brazil produces and exports such a large percentage of the annual sugar crop that fluctuations in its currency can have a major impact on sugar prices.

When the real is weak, Brazilian farmers have an incentive to produce more sugar for export to countries with strong currencies and greater purchasing power. When the real is strong, Brazilian farmers are more likely to sell in the local market, where sugar is used to make ethanol, and receive reals for their sugar. **A weak real means greater supply on global markets and lower prices.**

Government Subsidies

The sugar industry has a long history of government subsidies and tariffs being used to protect local sugar producers. Subsidies and tariffs distort the market by creating artificially high supply and depressing prices. If the largest sugar-producing countries stopped subsidizing growers, then production could fall and prices could rise.

Weather

Successful sugar crop production requires frost-free conditions and ample rain during the growing season. Since sugar production is heavily concentrated in a small handful of countries, poor weather conditions in one or more of these countries can have a very disruptive effect on supply.

Health Concerns

Sugar consumption has been linked to diabetes, obesity, heart disease, tooth decay and other ailments. Governments are under pressure to address high obesity rates, and this could lead to taxes and restrictions on high-sugar items. Health concerns could lead to a decline in sugar consumption and a fall in prices.

Ethanol Demand

Sugar can be crushed and used as an ingredient to make ethanol. Since ethanol competes with gasoline as a fuel source, its demand often moves inversely with oil and gasoline prices. A fall in oil prices could depress sugar demand for ethanol, while higher oil prices could increase demand.

The US Dollar

Sugar, like other commodities, is quoted in US dollars. Sellers of sugar receive fewer dollars for their product when the US currency is strong and more dollars when the currency is weak. A strong US dollar depresses sugar prices, while a weak US dollar lifts them.

4 REASONS YOU MIGHT INVEST IN SUGAR

Speculating on Sugar Prices

Most sugar production occurs in a few countries, and weather patterns play an important role in determining supply. Sugar prices can be very volatile. Investors looking to speculate on short-term bottlenecks in supply might see sugar as an attractive investment.

How Does Sugar Act as an Inflation and Weak US Dollar Hedge?

Most commodity investments, including sugar, are priced in US dollars and, therefore, are a way to bet on a weak US dollar. The US economy has relied disproportionately on consumer and government borrowing and spending over the past few decades. To incentivize borrowing, the Fed has kept interest rates low for a long period of time. **Growing debts and deficits in the United States could put pressure on the dollar and boost sugar and other commodity prices.**

Betting on Emerging Market Demand Growth

Asian and other emerging economies are growing wealthier. As consumers in these countries accumulate more purchasing power, their appetite for sweet foods may grow as well. Investing in sugar might be a way to capitalize on these global trends.

Diversify Your Portfolio

Commodities such as sugar have historically had low correlations with stocks, bonds and other financial assets. Investing in sugar provides a way to diversify a portfolio and smooth out investment returns.

SHOULD I INVEST IN SUGAR?

Sugar is a volatile commodity, so investing in it could produce big gains or losses. However, investing in sugar isn't just for speculators. Commodities such as sugar can be a way to mitigate risk in an investment portfolio by providing asset diversification. A basket of commodities that includes sugar, other soft commodities, metals and energy insulates a buyer from events that affect a particular commodity's price.

Investing in sugar is also a way to profit from 3 long-term trends:

1. **Growing wealth in emerging markets** could boost sugar consumption.
2. **Global warming trends** could disrupt sugar production and lead to supply shocks.
3. Demand for oil and gasoline could decline in the coming decades, and demand for ethanol could grow. **Overconsumption of fossil fuels** combined with heightened environmental concerns could hasten this trend and produce higher sugar prices.

Investing in sugar, however, has its risks including:

1. **Heightened concerns about a global obesity epidemic** could curb demand.
2. **Strength in the US dollar** could lead to weakness in commodities across the board.
3. **Increased government subsidies** of sugar could produce an oversupply that dwarfs demand.
4. **Sugar substitutes** such as aspartame and stevia could drive market demand away from sugar.
5. **Sugar is a volatile commodity** that could move lower without any specific catalyst.

WHAT DO EXPERTS THINK ABOUT SUGAR?

Shawn Hackett, President of Hackett Financial Advisors, believes that demand for sugar is strong and that the futures market suggests a rally might be coming soon. Mike Ciccarelli, a commodity and stock trader at Briefing.com agrees. He believes that small changes in weather patterns could be the catalyst for a supply disruption and a rise in prices.

“

“There’s minimal downside versus the potential for greater upside.”

Mike Ciccarelli, commodity and stock trader

The United States Department of Agriculture (USDA) notes lower supplies in China and Mexico could offset record production in the near future. In sum, all of these experts see supply/demand imbalances favoring sugar prices in the future.

WATER



WHY IS WATER VALUABLE?

Water is arguably the most important commodity on Earth. As important as crops, metals and energy are to the planet, none of them is possible without water.

Every agricultural crop that feeds the planet needs it to grow. Farmers couldn't raise chickens, cows, pigs or any livestock without massive quantities of it. Miners couldn't extract and process metals without it, and energy companies couldn't generate fuel without it. In fact, human beings couldn't survive without water. Yet despite these realities, many overlook water as an investment.

Although 71% of the Earth's surface is covered with water, only 0.3% of this water is usable by humans. The rest is in oceans, soils, icecaps or the atmosphere. Of the amount that is usable, an even smaller quantity is easily attainable from sources such as rivers and streams. **In fact, rivers and streams contain 300 cubic miles of water, which represents 1/1000th of 1% of the total found on Earth.** Most of the water we consume and use in industry comes from deep underground aquifers, which are underground layers of porous stone. About 30% of liquid fresh water is found in aquifers, while more than 69% is stored in glaciers and icecaps. Tapping into the supply of fresh groundwater requires natural springs or pumps.

HOW DID MODERN WATER TREATMENT DEVELOPED?

The history of using stored water for agricultural and human consumption dates back more than 10,000 years. In 8,000 BC, farmers in Egypt and parts of Asia trapped rainwater for their crops. By 2,000 BC, farmers in Egypt and Peru were using irrigation canals to transport underground water to crops, and by 1,000 BC, a city in modern-day Jordan built aqueducts – artificial channels for conveying water from one place to another – to supply water to its population.

Surprisingly, civilizations throughout history showed awareness of the need to maintain a clean source of drinking water.

Ancient Sanskrit and Egyptian manuscripts advised that drinking water should be stored in copper vessels, placed in sunlight and filtered with charcoal. The Greek physician Hippocrates, considered the father of modern medicine, advised that water should be boiled and strained through cloth. However, for many years, people drank untreated water from rivers and streams. With the Industrial Revolution and the expansion of population in European cities, sources of drinking water were increasingly contaminated. Sewage dumped in rivers and streams led to outbreaks of cholera, typhoid and other water-borne diseases in the 1700s, and cities urgently sought solutions to these deadly afflictions.

In 1800, British chemist William Cruikshank discovered that chlorine could disinfect water, and by the 1890s, many cities discovered that filtering water through beds of sand could trap many deadly bacteria. By the early 1900s, public outcries led to the installation of water treatment facilities in most major US cities.

Despite the advent of water treatment facilities, rampant industrialization was creating problems for the water supply. Contaminants such as lead, arsenic, and pesticides were finding their way into drinking water. This led the US government to pass the Water Pollution Control Act of 1948. Eventually, the US Environmental Protection Agency (EPA) produced even tougher water pollution standards.

TYPES OF WATER

1. Tap water

Municipal water treated to kill bacteria and remove sediments and odors. Often tap water contains other chemicals such as fluoride.

2. Hard water

Contains high amounts of calcium and magnesium salts. Permanent hard water contains sulfates, chlorides, or nitrates of calcium and/or magnesium and is not impacted by heating. Temporary hard water, on the other hand, contains bicarbonates of calcium and/ or magnesium. When heated, hard water forms scale, a substance which clogs heaters and pipes.

3. Soft water

Contains low amounts of calcium and magnesium salts.

4. Mineral water

Contains large amounts of dissolved minerals. Mineral water can be further divided into five types: saline, alkaline, ferruginous, sulfurous, and potable. Carbonated water and soda water are examples of mineral water.

5. Spring water (artesian)

Distinguished only by the fact that it flows from the ground naturally without the aid of drills or pumps. Otherwise spring water is no different than other water sources.

6. Purified water

Contains the fewest impurities. Distilled water is purified by an evaporation-condensation process. Other types of purification include deionization, carbon filtration, reverse osmosis and ultraviolet sterilization. However, many “impurities” are important to human health.

HOW IS WATER TREATED?

1. Collection

Groundwater or surface water is collected using drilling wells or dams. It is then carried to the treatment facility in open canals or closed pipes. Some water treatment facilities are located hundreds of miles from the water source. In these cases, the water may be stored in intermediate reservoirs.

2. Disinfection

In most European plants, ozone-rich air is used to disinfect water followed by a small dose of chlorine. Most American plants simply use chlorine.

3. Coagulation

Flash mixers circulate the water particles with chemicals called coagulants. The chemicals cause suspended particles in the water to adhere to each other and form flocs.

4. Settling

Settling tanks separate flocs from the partially cleaned water.

5. Filtering

The partially cleaned water is filtered further using sand and pulverized coal.

6. Adsorption

Some plants use an additional filtration process to trap more impurities.

7. Aerating

In areas with large amounts of manganese, iron or dissolved gases, water treatment plants use an aeration process to remove these impurities.

8. Fluoridating

In some areas, fluoride is added to the water to prevent tooth decay.

5 MAIN USES OF FRESH WATER

1. Thermoelectric

Electricity-generating equipment is cooled with fresh water.

2. Irrigation

Fresh water provides important nutrients to crops.

3. Public supply

Drinking, bathing and washing clothes and dishes comprise the third largest category of fresh water usage.

4. Industrial

Metal, wood, paper products, chemicals, gasoline and oils industries are major users of water, although virtually every manufactured product uses water during some part of the production process.

5. Aquaculture

Fish farming is the largest use of fresh water in aquaculture.

WHAT DRIVES THE PRICE OF FRESH WATER

Climate

Severe drought conditions, which are more common in a dry country like Australia, can cause major spikes in water demand, while periods of excessive rainfall can reduce demand. One of the most intriguing reasons some traders find water attractive is global warming. As the planet heats up, it could reduce the volume of available water sources and raise prices.

Agricultural Demand

The agriculture sector is one of the largest users of water. In addition to irrigation for crops, livestock farming uses an enormous amount of water. It takes 1,799 gallons of water to produce one pound of beef and 576 gallons to produce a pound of pork. By comparison, the water usage for a pound of corn and soybeans is 216 gallons and 108 gallons, respectively.

Electricity Demand

So much energy is used to cool electricity-generating equipment that it would be difficult to ignore the impact of this industry on water prices. Electricity demand is a function of overall economic activity, so water prices should react favorably to a strong economy.

There are several water-themed ETFs that invest in shares of water companies. The companies that comprise these funds operate in many business segments of the water industry.

Examples of water businesses include utilities that provide water service, water equipment manufacturers, wastewater disposal and water infrastructure manufacturing. Because of the diversity of these businesses, it is impossible to generalize about what factors move these investments. Complicating this analysis further is the fact that most utilities are regulated entities and, therefore, have restrictions on how much they can raise prices. Therefore, when an event like a drought, for example, causes water scarcity, utilities do not necessarily benefit.

However, utilities that provide water react mostly to these two factors:

1. Interest Rates
2. Dividends

Interest rates

Waterworks companies constantly invest in infrastructure and rely heavily on bond issuance to fund these projects. As a result, utility shares are very sensitive to a rise and fall in interest rates since changes in rates affect their borrowing costs.

Dividends

Most utilities are regulated entities and operate as monopolies or duopolies. In exchange for the lack of competition, they have restrictions on how much they can raise prices. As a result, they tend to generate steady, consistent returns, which they pay in the form of dividends to shareholders. Changes in dividends (increases and decreases) can have a big effect on water utilities' share prices.

3 REASONS YOU MIGHT INVEST IN WATER

Emerging Market Growth

The growth of the global economy is a significant factor that could lift both the shares of water equipment manufacturers as well as physical water prices. As emerging countries in Africa, the Middle East and Asia modernize their economies, the need for clean, potable water for irrigation, drinking, electricity and industry will grow.

Climate Change

Climate change has the potential to be the biggest catalyst for a rise in physical water prices. As global temperatures rise, glaciers could melt and rivers and streams could recede. These events have the potential to create major water shortfalls across the globe.

Portfolio Diversification

Investing in a vital natural resource can add diversification to a portfolio. In many cases, factors that move water investments are different than the factors that affect stock and bond prices.

SHOULD I INVEST IN WATER?

Emerging Market Growth

China, India, Brazil, the Middle East and Africa are among the many fast-growing countries and regions that will have enormous food and energy needs in the years ahead. Demand for water should grow as these economies expand.

Climate Change

Global warming is a positive catalyst for water prices. Higher temperatures will diminish the global supply of fresh water and could lead to a water crisis.

Infrastructure Demand

The United States has not invested in major infrastructure in decades. Pipes and equipment that carry water require upgrades in many developing Western economies. Water equipment manufacturers should benefit from an infrastructure overhaul.

It is difficult to envision bearish scenarios for the water industry. However, an economic slowdown that affects emerging markets or a reversal of global warming could put pressure on water equipment manufacturers.

EXPERTS OPINION ON WATER

A leading international body ranked water crises as some of the great threats facing global civilizations:

“

Climate change risk will, in practice, flow through either excess or lack of water with the potential for severe impacts to societies globally.”

World Economic Forum annual report

A leading investment research firm concurs that investing in water assets is a timely and profitable idea:

“

Demand for fresh water – which accounts for a meager 2.5% of the world's total water content – is growing along with urbanization and an ever-increasing global population. Today, a major part of water infrastructure in the United States is approaching the end of its useful life.”

Zacks Equity Research

WHEAT



WHY IS WHEAT VALUABLE?

For centuries, wheat has been one of the most important food crops cultivated by civilizations around the world. Evidence shows that wheat production began around 10,000 B.C., and that the Egyptians produced and baked breads in ovens over 5,000 years ago. Today wheat ranks as the second most consumed grain in the world, trailing only rice in annual consumption. Farmers can easily grow wheat in a multitude of different climates. The crop stays fresh for a long time and has a high nutritional value. These facts ensure that wheat will remain an important food staple and a valuable commodity for the foreseeable future.

WHAT IS WHEAT USED FOR?

Wheat is a member of the grass family and contains several essential vitamins and minerals including B vitamins, calcium, iron and protein. As a result, food products represent the major demand component for wheat. Wheat used for foodstuffs gets classified by its end use into five groups:

1. High protein, premium bread making
2. Premium bread making
3. General purpose bread making
4. Biscuit and cake making
5. Animal feed

In addition to foodstuffs, wheat is used in other industries:

- The pharmaceutical industry uses gluten in wheat to manufacture capsules.
- The paper industry uses gluten to coat paper products.
- The health and beauty industry use wheat germ, a part of the wheat plant rich in vitamin E, in soaps and creams. Wheat germ is also a healthy food source.

Wheat plays a small role in bioethanol production, although its use is limited compared to other crops such as corn. Wheat is also used to feed livestock.

WHAT DRIVES THE PRICE OF WHEAT?

The US Dollar

The US currency is the world's reserve currency. As a result, wheat, like other commodities, gets quoted in US dollars. Sellers of wheat receive fewer dollars for their product when the US currency is strong and more dollars when the currency is weak. Therefore, a strong US dollar depresses wheat prices, while a weak US dollar lifts them. In addition, since the United States is a major exporter of wheat, its price will likely continue to be quoted in US dollars.

Supply/Demand Imbalances

Governments often take actions that result in supply/demand imbalances in the wheat market. For example, in recent years, India has enacted import duties on wheat in an attempt to support domestic production. These taxes could lead to depressed demand for exports and lower global prices.

On the other hand, countries that subsidize wheat with tax or other incentives may cease to do so in the future. Farmers would then switch to growing other crops, which could cause wheat supplies to diminish and prices to rise.

Emerging Markets

Global demographic patterns are shifting. Population growth in the developed world is stagnant or declining, but Africa, Southeast Asia and the Middle East are experiencing a population boom. As the population in these areas increase, their demand for food will also grow. Wheat is a nutritious food source that grows in a variety of different climates, so it will likely become a staple item in emerging markets. Also, as these countries grow wealthier, their consumption of meat will likely increase. Since wheat is an important source of livestock feed, this should also boost prices for the grain. Of course, if major economic or political setbacks occur in these regions, wheat prices would probably suffer.

Weather

Weather conditions play a role in determining wheat prices. If crop yields suffer as a result of either too much rain or drought-like conditions, then prices for wheat could spike higher. On the other hand, ideal weather conditions could boost crop outputs and depress wheat prices. However, the wheat supply is global, so poor growth conditions in one region of the world are often offset by favorable conditions in another area.

Ethanol Subsidies

The United States government subsidizes corn farmers to help boost ethanol production. As a result, US farmers have increased corn acreage in recent years at the expense of wheat. This has resulted in a smaller output of wheat and has probably helped boost wheat prices. The corn subsidies are politically controversial, and should they end, wheat production will probably increase and prices may head lower.

3 REASONS TO TRADE WHEAT

How Does Wheat Act as an Inflation and Weak US Dollar Hedge?

Wheat is a way to bet on a weak US dollar and higher inflation. Since commodities such as wheat are priced in US dollars, the performance of the world's largest economy plays a crucial role in its pricing. In recent years, the US Federal Reserve Banks have supported easy monetary policies that have kept the US dollar weak. US policymakers need this weakness to bolster US exports and support consumer borrowing and spending. A continuation of these policies could spur inflation and will very likely help wheat prices.

Speculating on Demand Growth

Wheat has many favorable properties that could support continued global demand growth. It's a hearty crop that's easy to grow. Unlike rice, it doesn't require much water or labor. This could make wheat the grain of choice in developing economies across the world. Wheat also competes for acreage with corn. If trends in biofuel production continue, there could be a shortfall in wheat supply and higher prices.

Diversify Your Portfolio

Most traders have the vast majority of their assets in stocks and bonds. Commodities such as wheat provide traders with a way to diversify their portfolios.

SHOULD I START WHEAT TRADING?

Traders that are bullish on emerging market economies might consider trading wheat. As these economies grow, they will require affordable crops that grow easily and can be used to produce a variety of different foods. Also, as consumption of meat grows in emerging markets, demand for wheat as a source of animal feed will climb as well.

However, fiscal hawkishness by the Federal Reserve accompanied by strength in the US dollar could depress commodity prices including wheat. Also, a reduction in biofuel demand could lead farmers to allocate more acreage to wheat and cause prices to fall.

Finally, traders should understand that wheat is a commodity that is subject to the whims of the marketplace. A change in market sentiment toward agricultural commodities could send prices lower without a specific catalyst.

WHAT DO EXPERTS THINK ABOUT WHEAT

Jim Rogers, who co-founded the Quantum Fund and created the Rogers International Commodity Index, sees agriculture as the commodities sector with the best potential. Rogers sees wheat as one of many agricultural commodities that should be watched closely in the coming years.

Robert Chesler, vice president of the foods group at Chicago-based INTL FCStone, agrees with this opinion. Chessler sees agricultural commodities, in general, attracting more money from traders. He cites the relatively low prices in this sector as the catalyst.

However, it is worth noting that some experts see China's growing stockpile of grains as a possible overhang on the market.

WOOL



WHY IS WOOL VALUABLE?

Wool is a textile fiber obtained mainly from shearing the fleece of sheep. It is a fabric prized for its durability, comfort and resiliency. Wool plays an important role in producing items such as clothing, blankets, carpets and upholstery.

Wool production dates back to prehistoric man. As far back as 10,000 BC, primitive tribes domesticated sheep both for the food they provided and for their pelts. Since early man found the pelts both durable and comfortable, he soon began to develop the tools and methods for making wool. By 4,000 BC, the ancient Babylonians were wearing garments crafted from woven wool fibers.

Today modern production techniques have transformed wool manufacturing into an enormous global industry. Worldwide production of the commodity is estimated at 5.5 billion pounds. Although cotton ranks as the top overall fiber used by industry, wool reigns as the number one global source for animal fiber.

TYPES OF SHEEP THAT PRODUCE WOOL

About 90% of the world's sheep produce wool, and each sheep can produce between two to 30 pounds annually. A sheep's breed, genetics and nutrition are the main determinants of wool production, but the interval between shearing also impacts yield. Lambs produce smaller quantities of wool than ewes or rams. Generally, a ram produces more wool than a ewe of the same breed. (The wool from one sheep is known as fleece, while the wool from a group of sheep is known as a clip).

There are approximately 1,000 different sheep breeds, including more than 50 varieties in the United States alone. Each of these breeds has different features such as hair color and length, body type and breeding characteristics. Sheep are raised for milk, meat or wool depending on the breed and its physical characteristics.

Some breeds of sheep called hair sheep are covered in hair instead of wool. These sheep represent 10% of the global population and are raised mostly for meat. Hair sheep shed some fibers, but they are of no use in wool production. They can't be dyed like other wools, and their presence can contaminate usable fibers from wool sheep. For this reason, farmers avoid raising hair sheep with wool sheep.

SHEEP TERMINOLOGY

Sheep

Animal over one year of age that has usually produced offspring

Lamb

Animal less than one year of age with no offspring

Ewe

A female sheep. A young female is called a ewe lamb.

Ram

A male sheep that is sometimes referred to as a buck. A young male is known as a ram lamb.

Wethers

A castrated male sheep. Wethers are less aggressive than rams.

Yearling

An animal between one and two years. Yearlings may or may not have produced offspring.

Flock

A group of sheep

Shepherd

A caretaker of sheep

Shepherder

The individual responsible for keeping the sheep together in a flock.

COMMON CATEGORIES OF WOOL SHEEP

CATEGORY	FIBER DESCRIPTION	GLOBAL PRODUCTION	BREEDS	FARMING FACTS
Fine Wool Sheep	Small fibers - diameters of less than 20 microns.	About 37% of global output is fine wool. Fine wool is versatile and produces garments less likely to itch.	Merino, Rambouillet (found in Western United States)	Best adapted to dry and semi-dry regions. Known for their longevity and instincts to flock.
Long Wool and Carpet Wool Sheep	Large fibers - diameters generally greater than 30 microns. Carpet wool sheep produce the coarsest grade of wool, usually over 38 microns. As their name implies, these sheep produce wool for carpets.	Coarse wools represent about 41% of global production.	Border Leicester, Coopworth, Cotswold, Leicester Longwool, Lincoln and Romney. Carpet wool sheep varieties include Icelandic, Karakul, Navajo Churro and Scottish Blackface.	Adapt best to cool areas with high precipitation levels and ample crops for foraging. Carpet wool sheep are well adapted to extreme environments.
Medium Wool Meat Sheep	Can produce medium or long fibers. Farmers mostly raise these sheep for meat.	Produce the lightest and least valuable fleeces. Some medium wool can be made into blankets, sweaters and socks. This category represents 22% of global production.	Dorset, Hampshire, Shropshire, Southdown and Suffolk	Adapt to a variety of climates.

HOW IS WOOL PRODUCED?

Shearing

Farmers usually shear sheep once a year in the spring, although in some countries this occurs more frequently. Most shearing takes place by hand, although new technologies allow computers and robots to complete the task. Experienced shearers can shear up to 200 sheep a day. Each sheep yields between six and 18 pounds of fleece, which shearers attempt to recover in one piece.

Grading and Sorting

Sorters break up the fleece according to the quality of the product. The best quality wool derives from the head and sides of the animal and is used to make clothing. Lesser quality wool comes from the legs and is usually used for making rugs.

Cleaning and Scouring

Wool taken directly from sheep is called grease wool. It contains contaminants such as sweat and dirt that comprise 30 to 70% of the total fleece weight. Alkaline baths clean the fleece and remove byproducts called lanolin. These byproducts are used in the production of many household products.

Carding

During this process, the fibers are passed through metal machines and straightened into slivers.

Spinning

Spinning machines form yarn by spinning the fibers together.

Weaving

Two types of machines – plain weaves and twills – weave the yarns into fabrics. Plain weaves produce looser fabrics, while twills can produce tightly woven smooth fabrics with elaborate patterns.

Finishing

Several finishing processes ensure that the fibers interlock and do not shrink. During this stage, some garments are dyed as well. According to the Food & Agricultural Organization (FAO) of the United Nations, the global inventory of sheep exceeds 1.1 billion.

4 MAIN USES OF WOOL

1. Clothing

Most fine wool is woven or knitted into a variety of clothing items:

- Sweaters
- Suits
- Coats
- Scarves
- Socks
- Gloves

2. Furnishings

Thicker wools can be used to produce a variety of furnishings:

- Blankets
- Bedding
- Mattresses
- Upholstery

3. Carpets

Coarse wools can be woven into carpets.

4. Lanolin (wool grease)

Lanolin is a byproduct of wool production and an active ingredient in many skin, hair care and cosmetic products. Lanolin is known for its ability to moisturize and soothe skin and hair.

WHAT DRIVES THE PRICE OF WOOL?

Wool Stocks

The supply of yarn and wool tops, the semi-processed product used to make yarn, in warehouses can impact the price of wool. As these stocks build to higher levels, spinners have a diminished demand for wool tops. This, in turn, can cause the price of greasy wool to fall. On the other hand, if demand for finished clothing products accelerates, then wool top and yarn inventories can get depleted. This can lead to a supply shortage of greasy wool and higher prices.

Consumer Preferences

Consumers increasingly demand thinner apparel fabrics, although this trend can certainly change in the future. To keep pace with these trends, the wool industry is increasingly spinning finer wool and producing more breathable, lightweight garments. However, other natural fabrics (e.g., cotton and silk) and synthetic fabrics (e.g., polyester and acrylic) compete in this lightweight segment of the market. Traders should keep careful tabs on these trends. Wool manufacturers are revising their production practices to develop sportswear and next-to-skin lightweight garments. Their failure or success in these endeavors could impact wool prices.

Workplace Trends

In addition to consumer preferences for lighter garments, workplace trends also impact wool prices. In recent years, there has been a trend toward casualization of offices in many Western countries. These trends are detrimental to wool demand since the vast majority of business suits are made from worsted wool. However, in many emerging market countries, increased economic activity is producing more demand for suits and other wool products. Traders should pay attention to overall white-collar employment and workplace trends for clues about wool prices.

Australian Dollar

The main futures markets for both greasy wool and fine wool futures are in Australia. Unlike most commodities, which are priced in US dollars, wool futures are priced in Australian dollars. When the value of the Australian dollar drops against other currencies, it takes more Australian dollars to purchase wool than it does when the price is high. Therefore, the price of wool rises. Put another way, sellers of wool get fewer Australian dollars for their product when the currency is strong and more Australian dollars when the currency is weak.

3 REASONS YOU MIGHT INVEST IN WOOLS

Bet on Emerging Market Demand

Fashion and consumer preferences play an important role in determining wool prices. Trends in these areas in emerging market seem favorable for the commodity. China has a GDP of over \$11 trillion, while the size of India's economy is over \$2 trillion. Both of these economies are expected to continue to grow strongly in the years ahead.

Chinese consumers have shown a strong preference for wool products in recent years. As the economies in these two emerging powerhouses continue to grow, the demand for wool could outpace supply.

Inflation Hedge

Investing in wool is a way to bet on higher inflation. The Reserve Bank of Australia, like virtually all major central banks, has kept a very accommodating monetary stance for the past several years. These easy money policies have the potential to stoke inflation.

Global central bankers are likely to continue these policies to support consumer borrowing and spending, and these conditions are likely to be very beneficial for wool prices. Since there is limited land and a limited supply of sheep, the price of wool and other commodities would likely benefit from fears of inflation.

Portfolio Diversification

Most traders have the vast majority of their assets in stocks and bonds. Investing in wool provides a sensible way to diversify and reduce the overall risk in a portfolio.

SHOULD I INVEST IN WOOL?

Wool prices can be volatile and subject to changes in fashion trends and fickle consumer preferences. Traders who want exposure should consider purchasing wool as part of a basket of commodities. To achieve true diversification, the basket should include grains, livestock, lumber, metals and energy in addition to wool. Purchasing a basket of commodities helps protect traders from the volatility of any individual commodity. It also adds diversification to a stock and bond portfolio.

There are two specific trends that could boost wool prices in the years ahead:

Innovation

The wool industry is being proactive in dealing with changing consumer preferences. The implementation of new processes to produce lighter weight garments could create new pockets of demand for the commodity. In particular, the industry is now focusing on developing better quality superfine Merino fleece wool, which could have special appeal to the suit and luxury apparel markets.

Emerging Market Growth

Emerging market countries such as China and India are building wealth and purchasing more high-end clothing. Demand for wool to produce both work clothes and fashion items should grow.

However, traders should also consider the risks of investing in wool:

1. A global spike in interest rates or a global recession could depress demand for wool clothing items.
2. A shift in consumer preferences could benefit cotton or synthetic fabrics at the expense of wool.
3. Overproduction of wool by farmers could create a supply glut and depress prices.

EXPERT OPINIONS ON WOOL

Analysts are impressed with recent strength in wool prices, but many wonder whether it is sustainable.

One expert attributes strong Chinese demand and a weak Australian dollar for the price performance:

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“The somewhat lower Australian dollar, to which the wool industry is usually very sensitive, has probably helped in the last month. Still, it is unclear whether prices are sustainable at their current levels. While we see good signs in the form of very strong Chinese demand, this is not guaranteed to continue.”

Phin Zieball, National Australian Bank, agribusiness economist

However, another industry expert sees new pockets of demand that point to longer-term price strength for the commodity.

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“One key point is consumer appetite has moved distinctly in favour of natural fibres, with health, sustainability and ethical practices leading the way. Consumers know what they want and wool is certainly much higher on the shopping list today than it has been for many years.”

Matthew Hand, Australian Council of Wool Exporters and Processors president