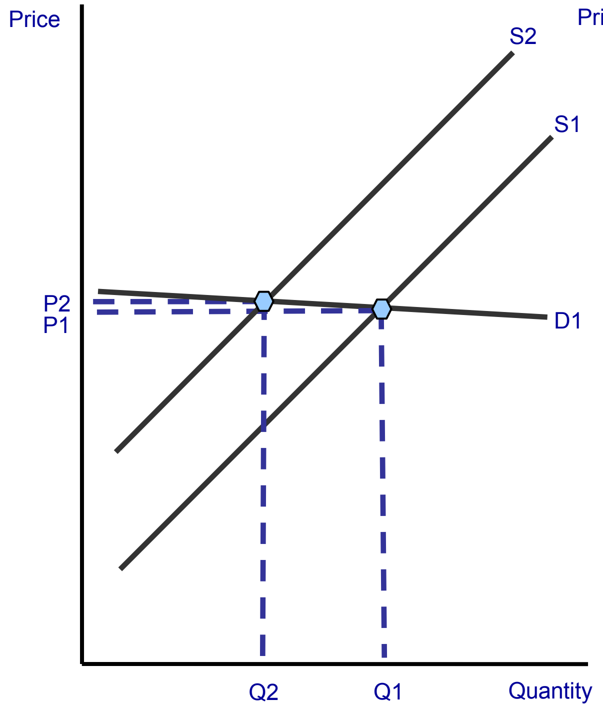
Price Volatility in Markets

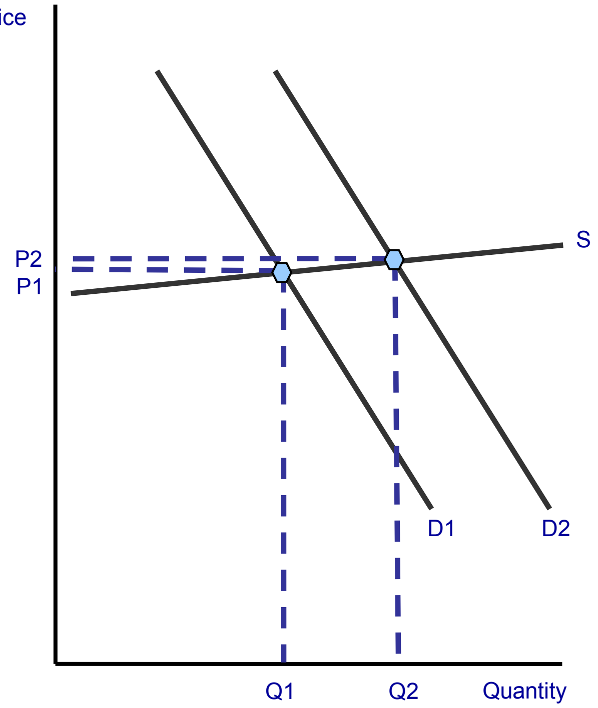
Price stability

Not all markets experience volatile prices. They tend to be markets with products where the conditions of supply and demand are stable from year to year and where the price elasticity of demand and the elasticity of supply are both high. We can see this in the diagram below.

When demand is highly elastic, shifts in the supply curve have little effect on the market equilibrium price, although market quantities will change. In the example below, there is a fall in market supply with conditions of demand remaining unchanged.

When supply is highly elastic, shifts in demand again have little impact on the market equilibrium price. In the example below we see the effects of an outward shift in the market demand curve.

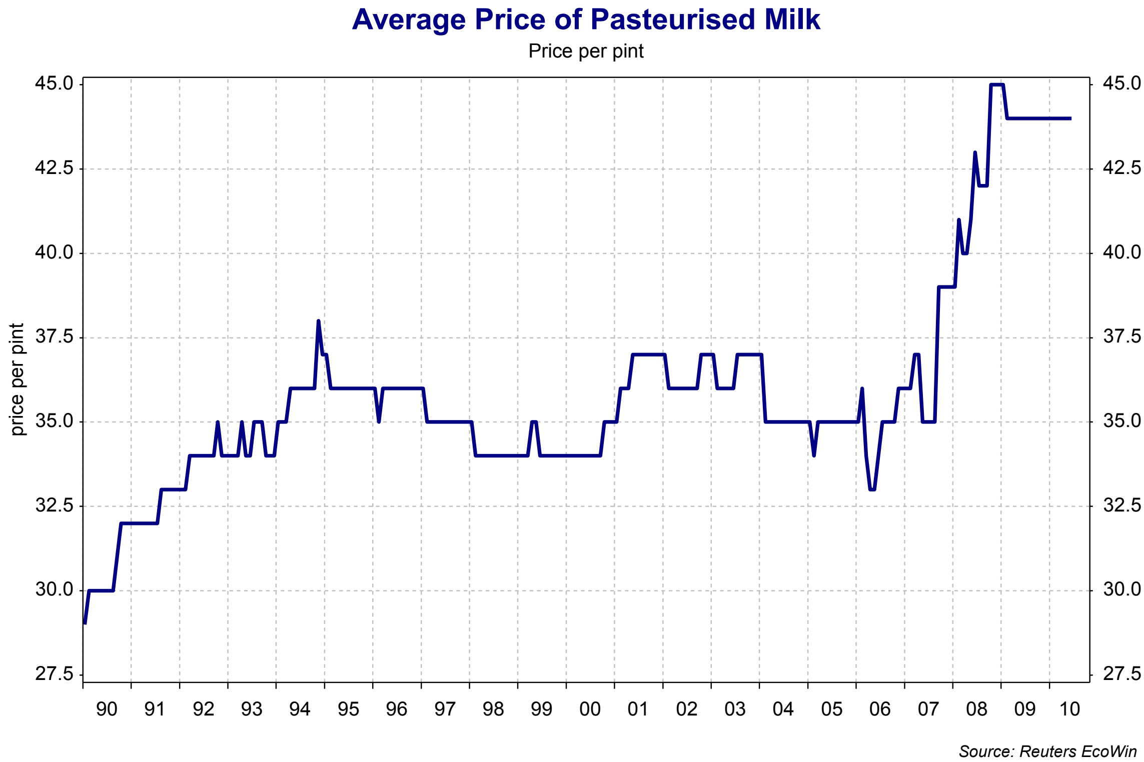




Stable prices

The price of milk is pretty stable over time. Partly this is due to intense competition between the leading supermarkets but the conditions of market demand and supply are also relatively stable and predictable. The price elasticity of supply is high and mass production of milk leads to a predictable price in the supermarket.

The recent increase in milk prices is the result of sharply rising costs of wholesale milk which itself has been due to increasing costs of production for milk farmers and the rising price of imported milk.

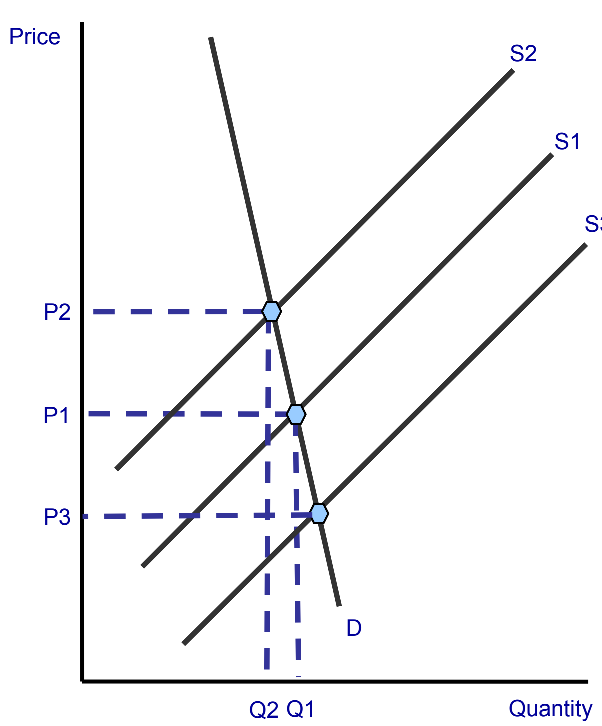


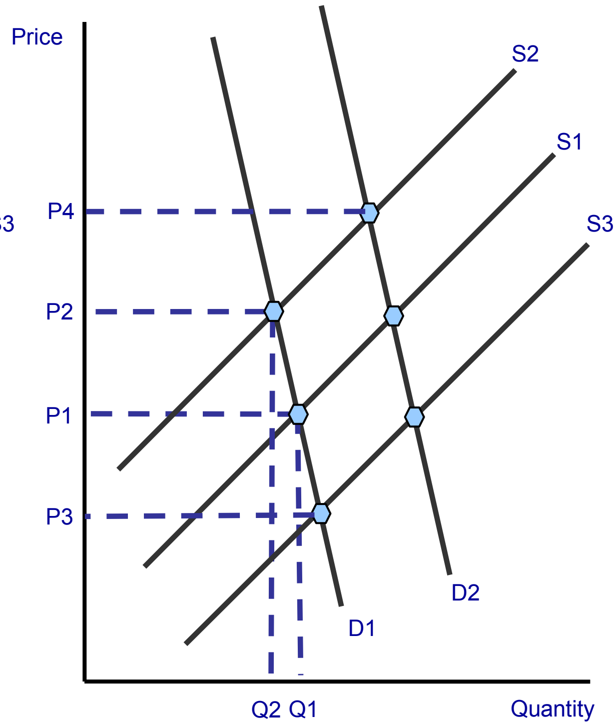
Inelastic demand and shifts in supply

When the price elasticity of demand is low, volatile shifts in market supply causes large changes in the market equilibrium price, although the equilibrium quantity traded may not change that much.

Inelastic supply and demand

We then consider shifts in demand when the price elasticity of demand is low. If Ped and Pes are both low then the scene is set for big changes in the market equilibrium price. E.g. a fall in supply from S1 to S2 and an increase in demand from D1 to d2 causes market price to jump from P1 to P4





Products with **unstable conditions of supply and demand** will experience price fluctuations.

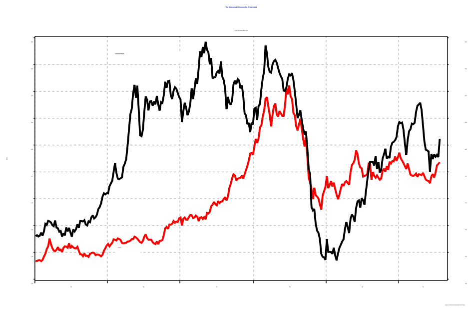
For example, for many products there are **seasonal variations** in demand which cause prices to rise sharply at **peak times** and then fall back during the **off-peak** periods. Seasonal demand is strong in the tourism and leisure industries. You will find that the prices of hotel rooms and the prices of package holidays are higher during the school holidays because hoteliers and travel businesses know that the demand is price inelastic and families will have to pay higher prices.

Agricultural (farm) prices tend to be volatile because:

- Supply changes from one time period to the next because of weather conditions which affect the size of the harvest
    - When supply falls short of planned output, for a given demand, price will rise
    - When actual output is in excess of planned output, for a given level of demand, market price will fall
- The effects of changes in supply can be amplified by a price-inelastic demand, for raw materials and components where the buyer sees them as essential to their production processes they must buy at whatever the market price is.
- Price volatility can be magnified because of the activity of **speculators** who are betting on future price changes.

Many economists regard price volatility as a source of market failure. Problems arising from **price volatility** in markets can include the following:

1. **Risk:** Makes incomes and profits for producers unpredictable and may inhibit investment spending because suppliers are concerned about their expected profits.
2. **Poverty:** Sharp falls in prices and incomes can cause hardship and poverty and also unemployment, especially in regions and countries dependent on cash from exporting.
3. **Balance of Payments:** Big swings in prices cause large changes in export revenues for major exporters of primary commodities - affecting their balance of payments and their ability to finance essential imports of food and technology.



In recent years we have seen a lot of volatility in the prices of many internationally traded commodities such as oil, gas, iron ore, palm oil, rubber, copper and many foodstuffs. The chart above tracks the Economist Commodity Price Index and shows just how volatile have been the prices of foodstuffs and industrial metals.

There are many factors at work here as this IMF report on rising global food prices makes clear:

The food price surges since 2006 reflect a confluence of factors. **Demand growth** has generally outstripped **supply growth** for many food commodities over the past 10 years or so, particularly for edible oils and major grains—including corn, rice, soybeans, and wheat. Correspondingly, **global stocks** of these crops have declined to relatively low levels last seen in the mid-1970s over the past several years.

The upward pressure on prices has been increased through the effects of **unfavourable weather conditions** in a number of countries which reduced crop production in 2006-07, particularly wheat. Second, the demand for corn increased sharply in 2006-07 as a result of the sharp increase in corn-based ethanol production. On top of this, the **rising oil prices** over the past year and a half have added substantial broad cost pressures. In a seller's market, such cost increases are passed on fully to producer prices.

Finally, a growing number of countries have imposed **export restrictions** in response to rising food prices, which added to international price pressures. As usual, these developments not only pushed up the prices of the foods directly affected, but also those of close substitutes. In addition, rising food prices have led to cost pressures elsewhere along the food chain, notably poultry and meats

Changes in commodity prices are often called "**external shocks**" and they have direct and indirect effects on consumers and producers across many different parts of the economy. The notes below trace some of the costs and benefits of higher commodity prices mainly from a UK perspective.

Costs

1. Rise in **input costs** (variable costs) – leading to surge in **producer price inflation** – now showing through in a rise in consumer price inflation
2. **Higher food price inflation** (agflation) – perhaps brings an end to the era of cheap food. This may be damaging to lower income groups and especially those with little/no wage bargaining power.
3. Rising cost of essential foodstuffs and energy has caused a fall in *real incomes* and less income available to spend after 'essentials' such as food and utilities This in turn has negatively affected *consumer confidence* and risks causing an economic recession.
4. **Higher input costs for businesses**: Hits profits especially if manufacturers cannot pass on to final consumers. More expensive commodities may accelerate trend towards *out-sourcing production* to lower cost countries and it also makes it more costly to transport products around the world. There is possible damage to export businesses if rising costs worsen competitiveness and the risk of stagflation
5. **Worsening trade deficit**: The UK is a net importer of foodstuffs and also now a net importer of oil! A trade deficit is a leakage from the circular flow – causing a slowdown in aggregate demand.

Benefits

1. Higher food prices are good for the **farming sector** which has suffered from years of declining real prices and real incomes. (That said farming in Britain contributes less than 1 per cent of UK GDP!)
2. Stronger prices provide a boost for sectors such as **renewable energy** and if fuel prices remain high this may have important **environmental benefits** – e.g. encourage car manufacturers to invest more in improving fuel efficiency / change the pattern of demand towards smaller cars. Will rising food prices contribute to less obesity? Or have the reverse impact?
3. A stimulus to the **North Sea oil and gas industry** and related sectors

Mini Case Study: Rice Prices Hit Curry Lovers

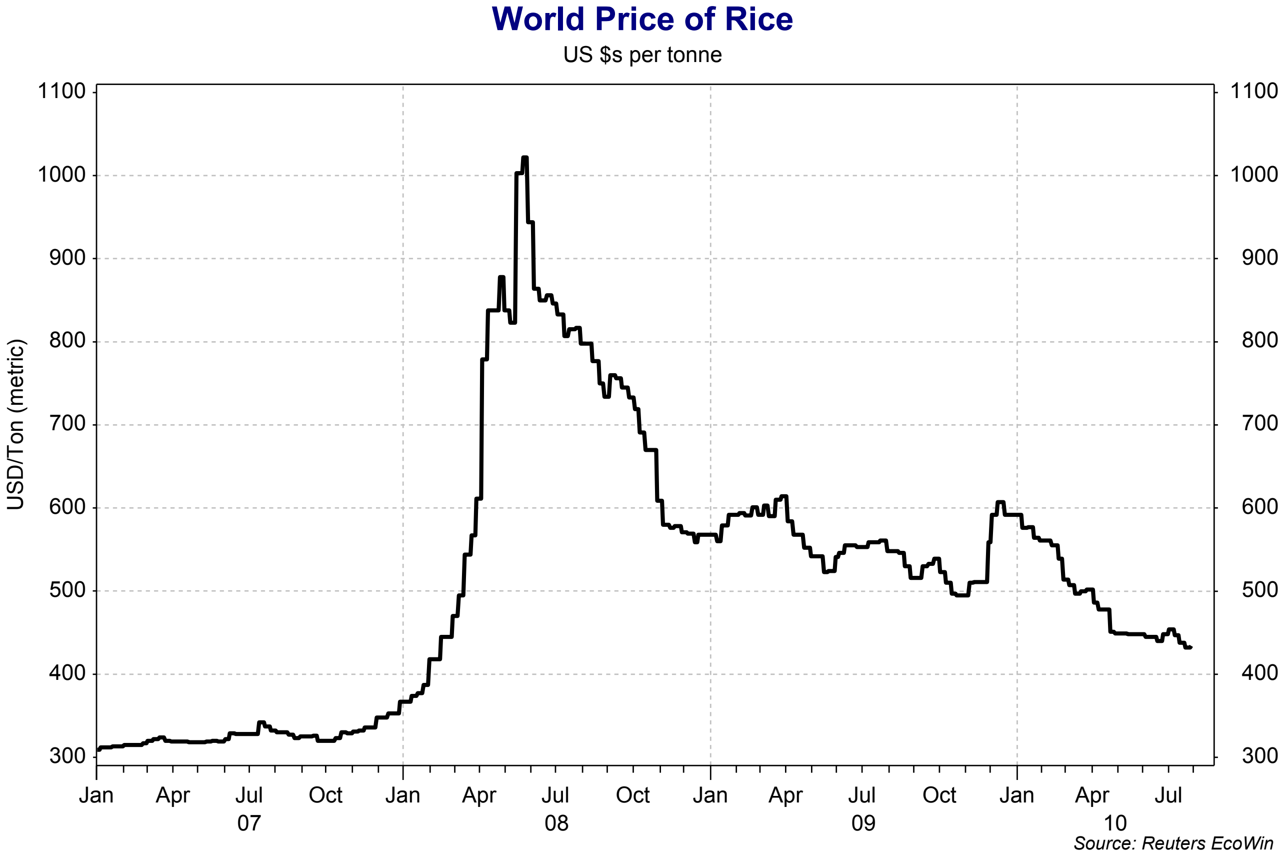
Devotees of their local
point of checking the
out for a hot one. The cost
- one of the most popular
doubled leaving curry
to pass some of this onto

Supply and demand-side
steep increase in world
world's rice is consumed
produced, but the largest
Thailand and China have
exports, and Vietnam and
exports off the market
are concerned that their
and rising incomes which
in demand towards higher
with insufficient rice to

curry house should make a
menu next time they pop
of the fragrant basmati rice
in the UK - has almost
houses with little choice but
their customers!

factors help explain the
prices. 95 per cent of the
in the country in which it is
producers such as India,
deliberately reduced their
Egypt have taken their
altogether. India and China
fast-growing populations
have encouraged a switch
quality rice may leave them
feed their own people.

The supply-potential of the major rice growing nations has also been affected by a switch in the use of farming land away from food production towards bio-fuels. According to the International Rice Research Institute: 'China provides an example — rice area decreased by almost 3 million hectares between 1997 and 2006 because of this economic pressure.' Rice fields are also being given over to property developments in countries such as The Philippines and Vietnam. And floods and cyclones in Bangladesh have devastated large parts of their rice crop.



Global demand for rice has been rising steadily in both advanced and emerging market countries. Demand for rice in Asia is expected to continue to rise in the future as its population expands even though per capita consumption might decline above a certain income level. Additional demand is likely to arise from Africa, where rice is becoming an increasingly important food crop. The rising cost of shipping rice around the world is another reason for the price increases.

Britain is directly affected by big movements in world prices. We are the largest importer of rice in the European Union buying in around 200,000 tonnes of rice every year. We also have a sizeable Bangladeshi community whose staple diet is rice - there are fears about how big price hikes will hit this particular group. For people whose dependence on rice as part of their essential diet is high, the impact is serious.

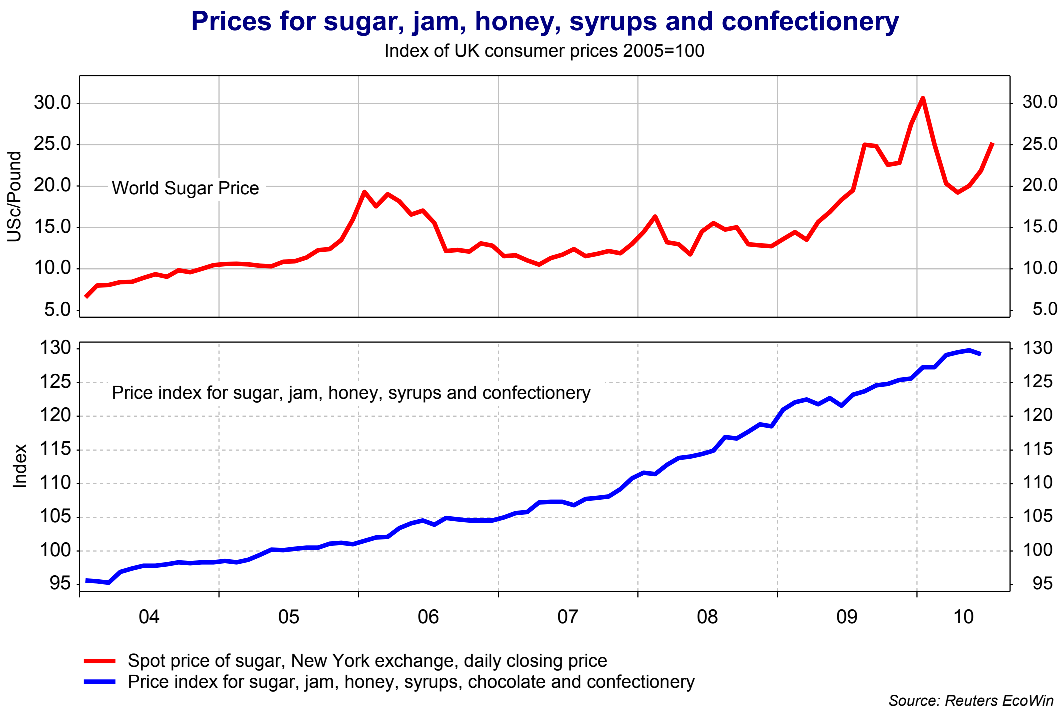
Source: EconoMax, March 2008

Unintended consequences of market price volatility!

The price of scrap metal has been soaring and this has led to a rise in criminal activity! Thieves seem prepared to steal lead from church roofs and railway yards have also been targeted, Thieves can currently get £120 a tonne for steel and between £500 and £600 a tonne for scrap aluminium. The UK collects around 15m tonnes of used metal each year and uses only 40% of it. The remaining 60% is exported around the world with increasing demand notable from Russia, Saudi Arabia, China, India and South America.

Source: Adapted from news reports, June 2008

Case Study: Volatility in world sugar prices



The global price of raw sugar has increased to its highest level since March 1981 on the back of a widening imbalance between world supply and demand. The hike in sugar prices is a market response to a **rise in the demand for sugar** - especially in Brazil where a growing volume of sugar is being used as a (subsidised) source of ethanol - combined with **supply shortages** caused by low rainfall during the monsoon season in India and China and hail and drought affecting supplies from Russia. Sugar output in India has contracted by more than 45% over the last year and the country might move from being a net exporter to a net importer of sugar as measures are taken to limit existing exports to maintain sufficient supplies for the home economy.

When demand exceeds supply, existing stocks fall and this is a key factor driving prices higher. Speculators can cause the price movements to be exaggerated as they trade in the forward markets to buy up available stocks in the expectation of further price increases.

One reason for supply shortages in India may be the 40 per cent drop in prices in the middle of 2008. Some market analysts believe that many Indian farmers were quick to swap their sugar canes for bananas when sugar prices collapsed - and this rapid supply response is now showing through in lower than forecast production.

Shortages of and rising prices for raw sugar will give a hit to food processing companies and then affect prices in the shops. A cluster of food manufacturers in the United States including well known brands such as Mars, Krispy Kreme Doughnuts, Hershey and Kraft Foods have created the **Sugar Policy Alliance** which is lobbying the Obama government to relax existing sugar **import quotas**. Without this they claim that sharply higher input costs will have a damaging effect on profits, production and jobs.

Some countries have already moved into action. Egypt has temporarily abandoned import duties on raw and white sugar imports to businesses that use sugar as a key raw material. Governments in other countries will also come under pressure to purchase at super-high prices whatever sugar is available in the world markets to guarantee supplies for their own consumers. Here in the UK we are yet to see the full impact of the 28 year high in global sugar prices. But wait a few months and you will see the retail price of sugar-based jam and honey moving higher. If your demand for sugary foods is inelastic, you will be paying quite a bit more between now and the end of the year!

Source: Geoff Riley, EconoMax, September 2009