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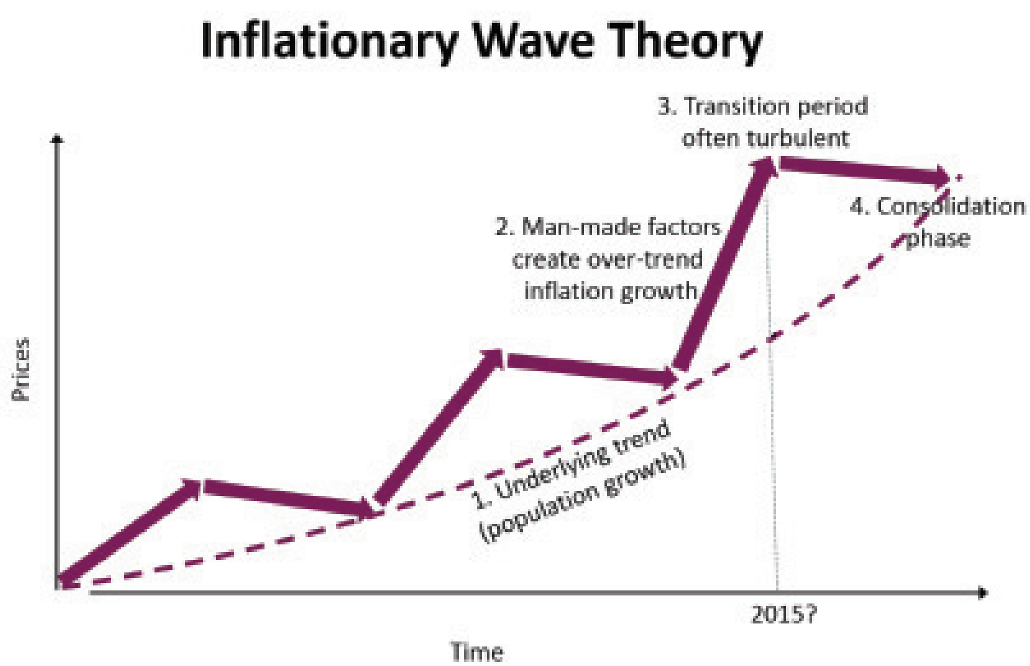
Inflationary Wave Theory

Pete Comley, author of "Inflation Matters", outlines the key argument of his latest book, and the implications of this for the 21st Century.

This article introduces a new theory about inflation called Inflationary Wave Theory, based on a detailed examination of the history of inflation. This shows that there is a marked wave pattern of rising inflation over a century or more, followed by a period of equilibrium with almost stable prices, before the cycle repeats itself. The length of the waves, the intensity of the inflation and its causes all vary, but the broad periodicity remains.

There are records of inflation occurring in a number of periods in ancient history. Some have even argued that the concept of inflation predates formal money systems.



In Babylonian times the recorded prices of barley rose markedly on a number of occasions, e.g. during the reign of Alexander the Great and the Wars of the Successors that followed from 330–301 BC. This inflation spike has many similarities to those seen more recently in the 20th Century in being related to wars and shortages. However others have hypothesised that the cause might have been related to the amount of silver (and gold) that Alexander brought back from his conquests. This silver would have increased the amount of money in circulation and hence inflated prices.

> "The ancient Greeks, the Babylonians and the Romans had periods of inflation too"

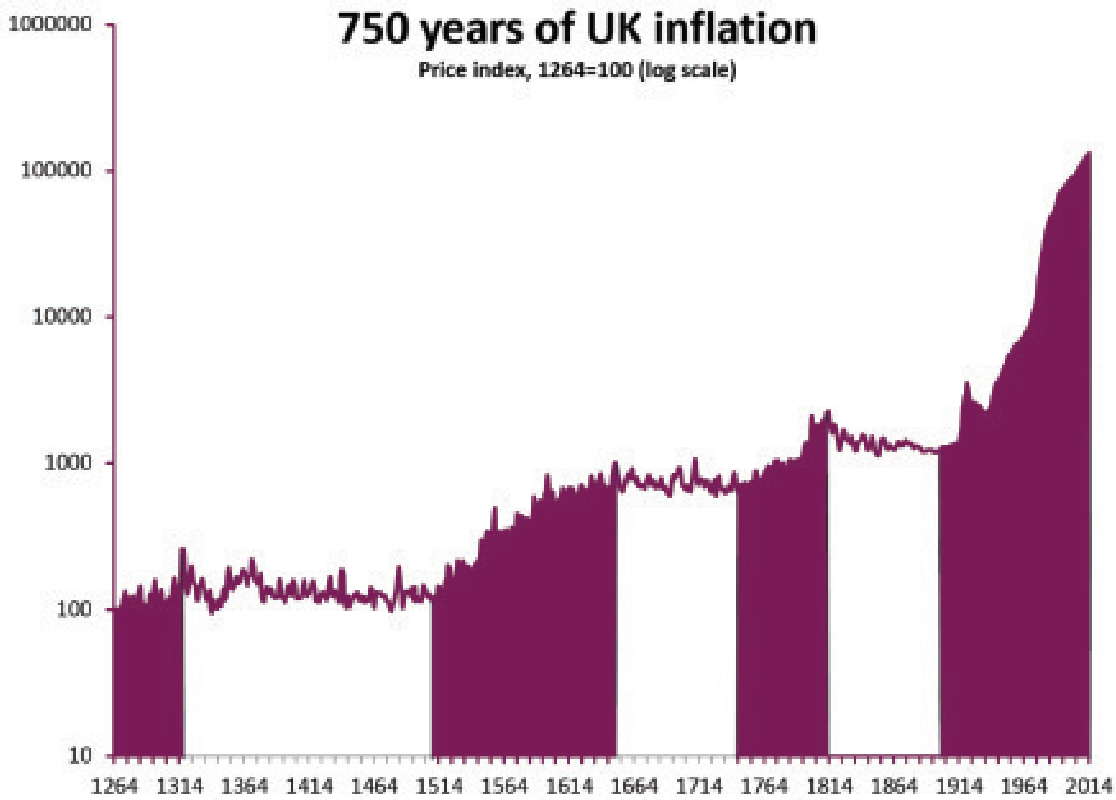
The ancient Greeks suffered inflation, interestingly at almost the same time as the Babylonians around 350BC. The Romans had periods of inflation too. However we have better records for wheat prices from the Roman Empire. These show it suffered three distinct waves of inflation: one around 200BC, another in the 2nd Century and then again after the 4th Century.

The cause of the second wave is known. It was related to the money supply again. From the reign of Trajan in 117AD, successive Roman emperors started to reduce the amount of silver in a denarius coin from 95 per cent down to less than 1 per cent 100 years later. By melting down the old coins and mixing in copper, emperors could create more coins to pay for their wars and exploits. However, the increase in the number of coins also resulted in significant price rises.

Official price indices have only been around in the UK for the last century. Calculating inflation during earlier times has taken a lot of painstaking research. The pioneering work was done by Sir Henry Phelps-Brown and Sheila Hopkins who estimated historical inflation from records of household accounts in southern England.

The following chart shows that the UK has experienced waves of price increases (shaded) followed by consolidation periods of relative price stability. The length of each half of the cycle has varied quite markedly between 85 and 190 years. Significantly this pattern of inflation is not unique to the UK but appears to be mirrored with very similar timings across Europe and other countries where records exist.

The inflationary waves in the UK since the medieval period have been approximately as follows:



Source: Phelps-Brown and Hopkins (1956) and ONS.

Another key factor is that every inflationary cycle has resulted in exponentially larger increases in prices than the previous one. Over the four waves above, the average annual prices increased by 0.5%, 1%, 2% and 4%+ respectively. This may be related to man's increasing ability to exploit inflation over time.

The pattern of inflationary waves followed by consolidation waves is very commonly exhibited in financial markets. You can see similar patterns if you look at major stock indices over the last century. What drives them is an underlying trend; in the case of inflation probably competition for resources. However when humans

Inflationary Part of the Wave	Consolidation Part of the Wave
1180 – 1320 (140 years)	1320 – 1510 (190 years)
1510 – 1650 (130 years)	1650 – 1730 (80 years)
1730 – 1815 (85 years)	1815 – 1900 (85 years)
1900 – 20?? (115+ years so far)	

become involved in trends, self-fulfilling prophecies create feedback loops that exaggerate the change. At this point there needs to be a period of consolidation when the underlying driver catches up with the exaggerated rise in prices.

Note: Like the price patterns exhibited by stock prices, the changes never follow simple lines but are much more complex when looked at over shorter time scales like decades. The long-term pattern exists but is overlaid by large short-term effects which can obscure the bigger picture if you look at them over too short a time span. For example in the latest wave of inflation starting in 1900, we have seen spikes of inflation in many countries (particularly around the great wars and again in the 1970s) and we've also even seen periods of declining prices (e.g. the 1930s). However the big picture shows a long, secular rise in prices that may be yet to reach its final peak. In the UK prices have risen by a factor of 100 during this period.

“The big picture shows a long, secular rise in prices that may be yet to reach its final peak”

One of the most detailed historical analyses of inflationary waves around the world was conducted by David Hacker Fischer in 1999. Fischer's hypothesis is that after a period of price stability something triggers the start of a new inflationary wave. He believes the evidence supports the theory proposed by Reverend (Thomas) Robert Malthus in 1798 that it is related to imbalances between demographic and economic growth.

Fischer goes on to argue that the periods of stability lead to more people perceiving life positively and, as a consequence having more children. This gradually puts pressure on resources and it is the effect of this population growth that starts a slow but steady rise in prices.

Fischer's key insight based on his detailed analysis of history is that it is not increases in the money supply that trigger the start of a new trend. Instead, changes in the money supply normally follow the start of a new trend and then amplify it. You can see this in the start of the latest wave. Prior to World War I, prices went up by 13 per cent in the UK (1899-1913) whilst an index of the money supply rose by just 3 per cent in the same period. World War I then ensued and the money supply more than doubled, only then to be followed by a similar rise in retail prices.

The critical point in the new cycle soon happens when prices break out of their previous range of natural fluctuations. People start to realise that they have entered a new era of apparently permanent increases in prices. A new phase of inflation then takes over and an inflationary mindset sets in. People start adopting different behaviours that reinforce the new inflation trend. These range from workers demanding inflation-related pay rises, through to governments expanding the money supply to ensure there is enough money in the economy.

More specifically the financially astute and wealthy are usually first to spot and exploit the change and start other behaviours which further feed the inflation wave. One of the most important is borrowing money, whether by companies for investment purposes or by individuals to buy assets that will keep their value during the forthcoming inflation. The choice asset is often land and housing. Others in the population then see land and house prices rising and seek to join the bonanza and demand even more credit created by private banks. All of these actions expand the money supply since money is created when debt is created. Those increases in the money supply eventually end up affecting the prices of goods and services too, providing further feedback to the inflation loop, e.g. in the form of wage demands.

Governments also exploit the inflationary situation. As they are usually net debtors, they understand that inflation will erode their repayment obligations and it is in their interests to foster inflation. For example the current UK government regulates many prices from train fares, to energy, to education costs and makes certain that they keep rising (sometimes even by rates higher than inflation). This has the effect that welfare and pensions payments keep rising too.

Governments sometimes also decide to print money to fund their current expenditure, rather than borrow it. This might be to finance wars, to expand their economy (short-term) or to act as a substitute for collecting taxes. Such increases in the money supply have the potential to spiral out of control into hyperinflation if not managed carefully.

The impact of the initial stages of the new inflationary wave can be positive for the economy. The increased borrowing can result in increased business investment. The increasing prices provide an incentive for people to spend money rather than save it. Some also make gains from asset price inflation (e.g. housing and shares) and then spend this in the goods and services economy.

This stage is initially accompanied by increases in wages as the expanded economy demands more labour, but the inflation pep pill only has short-term benefits. Soon the real gains for the economy decline, and at the same time, the population continues to grow, which results in declining labour costs. Concurrently the wealthy continue to profit from asset price inflation and the erosion of the cost of their borrowings. These two factors fuse together and lead to growing inequality.

Like waves in the sea, there usually comes a point when inflationary waves build to a final peak and finally collapse, usually cataclysmically. Something stops the whole cycle. Historically this has normally been war and/or population decline. At the end of first great inflation wave around 1320, one tenth of Europe's population had died in the previous decade as harvests failed and prices soared. This was followed by the Black Death a few decades later that wiped out a further 25-40 per cent of many European populations.

A similar decline was seen at the end of the next wave. Europe was savaged by the Thirty Years War that led up to the end of the second great wave around 1650. The population declined by 40 per cent in Germany alone.

> "There usually comes a point when inflationary waves build to a final peak and finally collapse, usually cataclysmically"

Interestingly, the third great wave was not halted by population decline. Instead it was the after-effect of worldwide revolutions and wars, the most significant being the Napoleonic Wars (1796-1815). These caused prices to reach unprecedented levels whilst real wages plummeted. The impact was so severe that by 1812 it was estimated that more than a half of English families were dependent on poor relief.

A key characteristic of the change in trend is a sharp decline in prices. At all the previous wave peaks, there was a deflationary shock with declines of prices by about a half over a period of a few years.

After some consolidation, a period of relative price stability then follows. Relative is a key word. The period still exhibits price fluctuations but the key factor is that prices typically remain within a range and do not exceed the previous high. In addition as time goes by, the amplitude of the oscillations typically reduces. This is a reflection of a stable price mindset taking over. A whole generation grows up never witnessing long-term price rises in their life-time. Indeed during these periods, there is usually a gradual decline in overall prices. The latter is probably due to certain goods becoming cheaper as productivity or technological advances reduce the cost of production.

The period also sees declining returns on assets such as land and houses. Rents also decline. At the same time, real wages rise from the benefits of the gradual decline in prices over time. In waves following population decline, labour is in short supply too, which again enhances wages as employers compete to recruit from a smaller working population. The net effect is a significant decline in inequality.

History shows that such periods have sometimes coincided with cultural changes in society, e.g. the Renaissance in the 14th/15th Century, the Enlightenment in the 17th/18th Century and the Victorian Empire of the 19th Century. These have helped inspire more positivity and confidence in society, which has sown the seeds for the next wave of population growth and for the inflationary cycle to repeat itself.

The up-cycles in the previous three inflationary waves in the UK have lasted between 85 and 140 years. We are about 115 years into the latest one. A major secular shift may be due in the coming decades. Indeed it is possible that this new wave of stable and declining prices may have already started in some places (e.g. Japan).

It is most likely that we have not reached the crest of the current inflationary wave yet. In my book, I highlight three conditions that in all likelihood need to be fulfilled for the transition to take place. These are: a stable money supply, no latent inflation in the system, and debt restructuring to a sustainable level. None of these conditions are currently met. Moreover, it is likely that the change in trend will be marked by a temporary global deflationary shock – the cause of which it is impossible to foresee.

Having said that, today's big inflationary wave is clearly showing signs of coming to an end. The evidence for this can be seen in the declining world prices around us. It also fits with the underlying demographic trends which appear to be driving inflation over the long-term. Populations are already declining in Japan, Russia and Germany. According to recent forecasts, global population will peak around 2050. At the same time the world's population is ageing. Older people consume fewer goods and services. Therefore there will start to be significant downward pressure on prices from reduced demand caused by the double whammy of declining population size and reduced consumption by those who remain.

"There will start to be significant downward pressure on prices from reduced demand"

Inflationary Wave Theory offers an alternative framework for understanding inflation. The implications of it are that the world is likely to enter a period of more stable prices for the majority of the 21st Century. The near-term prospects however are less clear. It is not impossible that the world will suffer a major deflationary shock in the coming decades that will herald the start of the consolidation part of the latest wave. ■

Pete Comley's book, "Inflation Matters: Inflationary Wave Theory and its impact on inflation past and present … and the deflation yet to come" is available on Amazon in Hardback and Kindle formats.