



A New History of Financial Bubbles

By William Quinn

WAS THE BUBBLE INVENTED by John Law in the early 18th century? At first glance this contention might seem obviously wrong, or even nonsensical. It is, however, much truer than it seems.

Many of those familiar with financial history will have one of two objections to the contention. First, one of history's most famous financial bubbles is the Dutch Tulipmania of 1636, which occurred 35 years before John Law was born. However, recent financial history research has played down the significance of the Tulipmania. The price movements involved were striking, and likely reflected some degree of speculative investment, but this is common in markets in rare and unusual goods. This is particularly true of goods predominantly used to signal status, as tulips were in 1636. Furthermore, tulips are a commodity, not a financial asset, and the economic fallout of the episode was minimal. A 20th century equivalent might be the price reversals that occurred in comics, baseball cards and beanie babies, and we would not describe any of these as "financial" bubbles. The first documented *financial* bubble occurred in 1720.

Second, financial bubbles are widely thought of as naturally occurring. Some, for example, see bubbles as an inevitable part of the business cycle; others believe that they break out spontaneously. Either way, they are not something that ever needed to be invented.

However, this too is a misconception. Financial bubbles do not happen at regular, cyclical intervals. The first two major bubbles, in 1720 and 1825, were separated by 105 years, but since 1990, a major bubble has occurred, on average, once every six years. Nor are they spontaneous in any real sense. They always happen for a reason, and are often deliberately and knowingly created—none more so than the first financial bubble of 1720.

The problem facing John Law in 1719 was the French government's unaffordable levels of debt. His original plan was to have the holders of government debt trade it for equity in his Mississippi Company,

Portrait of John Law by Casimir Balthazar, 1843.

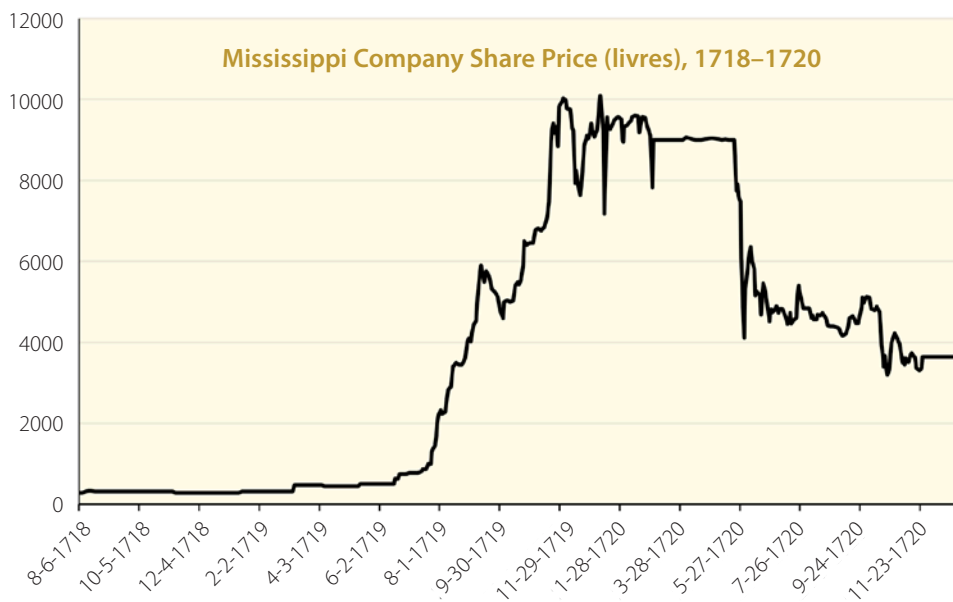
and then allow the government to pay this company a lower rate of interest. The problem was that this trade was clearly not in the interest of debt holders. Why would they swap a bond yielding 8% interest for a share in a company whose main asset was a bond yielding 5% interest?

But what if those debt holders could be convinced that after they made the trade, the price of Mississippi Company shares would rise? Investors might be aware that the long-term yield of the shares would not match that of the debt, but a few percentage points of annual interest would pale in comparison to the prospect of immediate, large capital gains. As long as the company's shares were thought to be rising, completing the conversion would not be a problem.

So Law engineered a bubble in his own company's shares. First, he made sure that the shares were much more liquid and marketable than the (largely untradeable) debt used to purchase them. This would allow investors to believe that they could easily realise any capital gains. Second, he instructed the French *Banque Royale*, a forerunner to the modern central bank, to rapidly expand the money supply. This ensured that plenty of money was available to buy the shares on secondary markets. Third, he allowed the shares to be purchased for an initial down payment of 10%, effectively extending an enormous amount of credit to the market.

The final part of the plan was to use "market management" tricks to engineer a series of rapid increases in the company's share price, thereby attracting speculative investors. Each successive share issue required the subscriber to hold existing shares, which increased the demand for these shares on secondary markets. The rising price of existing shares then made the current issue look like a much more attractive investment. He also used the news media, which was heavily controlled by the French government, to exaggerate the company's profitability.

As the graph shows, Law's scheme was an enormous success—but only for a while. When investors began to cash out, the price of the company's shares began to fall. Law responded by pegging the price of shares at 9,000 livres, paying out investors by having the *Banque Royale* print bank notes. But this led to considerable



inflation, undermining confidence in both Law and the Mississippi Company. His entire economic project fell apart, and at the end of 1720 he was quietly sent into exile to protect him from angry investors.

To say that Law invented the financial bubble might not be exactly true, but nor is it entirely false. As the first person to make one happen, he bequeathed a recipe for bubbles to future generations. Every major bubble since 1720 has stemmed from the same key elements Law focused on: asset marketability, abundant money and/or credit and speculation. Once these elements are in place, all it takes is a spark to provide an initial increase in prices, attracting momentum traders and speculative investors. In the case of the Mississippi Bubble, Law provided this spark himself.

These conditions can be illustrated using a model analogous to the "fire triangle" in chemistry. In the fire triangle, when oxygen, fuel and heat are all in place, a fire can be started by a spark; the fire can then be extinguished by the removal of one of these elements. In the bubble triangle, marketability, money/credit and speculation must all be in place, at which point a spark can be provided by politics or technology. Bubbles then come to an end when one side of the triangle is removed or runs out.

The first side of the bubble triangle, the oxygen for the boom, is marketability: the ease with which an asset can be

freely bought and sold. Marketability has many dimensions. The legality of an asset fundamentally affects its marketability. Banning the trading of an asset does not always make it wholly unmarketable, as demonstrated by the abundance of black markets around the world. But it does usually make buying and selling it more difficult, and bubbles often arise soon after the legalization of certain types of financial assets.

Another factor is divisibility: if it is possible to buy only a small proportion of the asset, that makes it more marketable. Public companies, for example, are more marketable than houses, because it is possible to trade tiny portions of the public company by buying and selling its shares.

Historically, bubbles have often been preceded by sudden increases in marketability. A precursor to the bubble of 1720 was the emergence of joint stock



The Bubble Triangle

companies with tradeable shares. The dot-com bubble was associated with the growth of internet trading, which allowed investors to buy and sell shares, day or night, from the comfort of their own homes. Perhaps the most notorious increase in marketability was the mass issue of mortgage-backed securities during the 2000s, which turned previously illiquid mortgage debt into an asset that could be bought, sold and speculated in.

The fuel for the bubble is money and credit. A bubble can form only when the public has sufficient capital to invest in the asset and is, therefore, much more likely to occur when there is abundant money and credit in the economy. Low interest rates and loose credit conditions stimulate the growth of bubbles in two ways. First, the bubble assets themselves may be purchased with borrowed money, driving up their prices. Because banks are lending other people's money and borrowers are borrowing other people's money, neither are fully on the hook for losses if an investment in a bubble asset fails. Second, low interest rates on traditionally safe assets, such as government debt or bank deposits, can push investors to "reach for yield" by investing in risky assets instead. As a result, funds flow into riskier assets, where a bubble is much more likely to occur.

Many historical bubbles have been preceded by interest rate cuts, expansions of the money supply, or financial deregulation that encourages banks to lend more. The Plaza Accord of 1985, widely considered the catalyst for the Japanese bubble of the 1980s, explicitly encouraged Japan to commit to all three. Similarly, the Australian land boom of the 1890s was accompanied by low interest rates, an influx of money from Britain and a "free banking" system characterized by minimal financial regulation.

Although it is less common, the level of credit in a market can also increase due to an increase in demand for borrowed money. A surprising fact about the US stock market bubble of the late 1920s is that most of it occurred when interest rates were relatively high. As historian Eugene White has shown, the demand for margin lending was so strong by 1929 that investors were willing to borrow at higher and higher rates in order to buy as much stock as possible.

The third side of the bubble triangle, analogous to heat, is speculation: the purchase of an asset purely with the aim of



Renowned economist Irving Fisher, who is infamously known for declaring that stocks had reached "a permanently high plateau" on the eve of the Crash of 1929.

selling that asset for a capital gain at a later date. Speculation is never entirely absent: there are always some investors who buy assets in the expectation of future price increases. However, during bubbles, large numbers of novices become speculators, many of whom trade purely on momentum, buying when prices are rising and selling when prices are falling. Just as a fire produces its own heat once it starts, speculative investment is self-perpetuating: early speculators make large profits, attracting more speculative money, which

in turn results in further price increases and higher returns to speculators. The amount of speculation required to start the process is only a small fraction of that which occurs at its peak.

Anecdotal evidence has always suggested that this trading strategy is widespread during bubbles. During the Latin American mining bubble of 1825, *The Times* described investors as a "community of gamblers" who "engaged in schemes of all kinds, not with any consideration of what the undertaking was likely

to produce.” *The Economist* characterised investors during the 1896 British Bicycle Mania as having “no intention of holding whatever they are allotted if they can secure a premium.”

However, historians have debated the extent to which these reports reflected reality. Much stronger evidence of speculation comes from surveys of investors that were conducted during more recent bubbles. A study by Robert Shiller, Fumiko Kon-Ya and Yoshiro Tsutsui found that in 1989, when the Japanese bubble was at its peak, 39% of Japanese institutional investors were advising investors to buy shares despite expecting prices to fall in the long term. The strategy of chasing short-term capital gains had become widespread, even among professionals.

With these elements in place, the spark for a bubble can come from one of two places: technology or politics. Technological innovation can spark a bubble by generating abnormal profits at firms that use the new technology, leading to large capital gains in their shares. These capital gains then attract the attention of momentum traders, who begin to buy shares in the firms *because* their price has risen. At this stage, many new companies that use (or purport to use) the new technology often go public to take advantage of these high valuations.

While valuations may appear unreasonably high to experienced observers, they often persist for two reasons. First, the technology is new, and its economic impact is highly uncertain. This means that there is limited information with which to value the shares accurately. Second, excitement surrounding technology leads to high levels of media attention, drawing in additional investors. This is often accompanied by the emergence of a “new era” narrative, in which the world-changing magic of the new technology renders old valuation metrics obsolete, justifying very high prices.

The clearest example of a technological bubble is the dot-com boom, which was driven primarily by the emergence of the internet. The British Bicycle Mania was sparked by a series of innovations in bicycle design, the most important of which was the pneumatic tire. The US stock market bubble of the 1920s was also technologically driven, with a series of major innovations, particularly in electricity and mass production, generating impressive corporate profits throughout the decade.

Alternatively, the spark can be provided by government policies that cause asset prices to rise. Usually, but not always, the rise in asset prices is engineered deliberately in the pursuit of a particular goal. This goal could be the enrichment of a politically important group, or of politicians themselves. The Australian land boom of the 1890s was notable for the extensive involvement of politicians, who routinely used their positions to evade losses when the bubble burst. Other bubbles have resulted from an attempt to reshape society in a way that the government deems desirable. The housing bubbles of the 2000s, for example, were sparked by the desire of governments in several countries to increase levels of homeownership.

While bubbles are typically seen as negative events, their economic consequences vary. The key variable is how vulnerable the financial system is to the bubble bursting. In the worst-case scenario, the bubble asset is deeply integrated into the economy, often bought using borrowed money, and exposes systemically important banks to major losses. This is often the case for land and housing bubbles, making these bubbles particularly destructive. On the other hand, when bubble investors are using their own money, the bubble asset is not integrated with many important supply chains, and the financial system has no exposure, the bursting of a bubble can be relatively benign. Some investors will lose money, but the overall economy is unlikely to suffer.

When will the next bubble occur? Are we in a bubble right now? The necessary conditions of marketability, money, credit and speculation are all present, so we should expect bubbles to be frequent in the modern world. The hard part is predicting the sparks. One could make a case that several recent developments constitute sparks, but this part of the bubble triangle is the most subjective. Individual investors will need to use their judgement and come to their own conclusions.

Those who insisted that there was no bubble right before a crash have often become legendary figures of fun. Irving Fisher’s statement that stocks had reached “a permanently high plateau” on the eve of the Crash of 1929 is one of financial history’s most famous quotes. A less well-known feature of past bubbles is that their early stages were often characterised by

an abundance of equally bad pessimistic predictions. Investors in the Netscape IPO of 1995 were dismissed as “juvenile” by *The New York Times*, while the *Financial Times* accused them of having “abandoned reality.” Those who bought Netscape at its opening day closing price earned an annualized return of 35% until it was acquired by AOL in 1999.

Identifying bubbles is never as easy as it looks in hindsight. Even when an asset is overvalued, it can be impossible to know what will happen to its price in the future. History can’t tell us what the stock market is going to do tomorrow—but it can tell us what warning signs to look out for. \$

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