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Back to the Future: The Financial Manias of 1720

Good Afternoon,

I'd like to thank you for inviting me to speak today. I'm going to talk about the South Sea and Mississippi Bubbles of 1720. The Financial Times ranked these among the top five financial scandals of all time. I started researching this project last Fall, when there was concern that we had entered a period for which there was no precedent. However, it seemed that the first financial bubbles might have lessons for us.

My goal today is to convince you that even in finance, it is worthwhile to keep an historical perspective, that history is not bunk, it is not just one darn thing after another, and that we have survived these sorts of bubbles and panics before and will again. Mania appears to be part of being human. This perspective is especially important for this group since the understanding and management of risk is an important part of the actuarial profession. Qualitative understanding can be as important as quantitative knowledge and should also impact our estimates of expected risks and returns. John Kenneth Galbraith said: "financial memory should be assumed to last, at a maximum, no more than 20 years. This is normally the time it takes for the recollection of one disaster to be erased."

Historical perspective is the "I've seen this movie before and I know how it ends" factor.

I think of bubbles and panics as being the financial subset of manias. Manias include delusions and fads as serious as witchcraft and as trivial as hula-hoops. A Bubble floats, expands, and finally pops. Bubbles are easily blown hither and yon by the wind, and thus wind was often used as a metaphor for excessive speculation. The first use of the term I've come across is from Shakespeare as he described "a bubble reputation". A few

decades later, stock promoters, typically called “projectors” would ‘bubble’ questionable ‘projects’. In 1720, Jonathan Swift wrote the long poem ‘The Bubble’. The last lines of the poem were:

“The Nation too late will find,
Computing all their Cost and Trouble,
Directors Promises but Wind,
South-Sea at best a mighty Bubble.”

Of particular interest to this group, the mathematical groundwork for actuarial science was being established in the decades just prior to 1720. In 1671 Jan De Witt, the prime minister of Holland, published “Value of Life Annuities in Proportion to Redeemable Securities”, around 1688 Lloyd’s of London began in Edward Lloyd’s coffeehouse, and in 1693 Edmund Halley published his Life Tables. Jacob and Nicholas Bernoulli developed the mathematics of infinite series prior to the 1720 establishment of the first insurance companies in England. Similar mathematics was used to derive a reasonable value for South Sea stock and the term ‘intrinsic value’, the foundation of value investing, began to be used by Daniel Defoe and others.

I point this out because there’s a self-congratulatory viewpoint that the financial markets in 1720 must have been very primitive and thus those events cannot have much bearing on today’s financial markets. In fact, derivatives such as puts and calls, were well known and used in the Dutch markets several decades before these two bubbles. So were futures. They played an important part in the rise and collapse of these bubbles.

Britain’s South Sea Bubble and France’s Mississippi Scheme started in 1719 and petered out in late 1720. Speculators and currency flowed between the two markets and also impacted other, smaller markets in Holland and Germany. The charts I’ve distributed

give you an idea of the scale of the bubbles. These were not just isolated bubbles in two companies; at their peak, they represented a significant part of the national wealth of Britain and France. At the height of the boom, the capitalization of the English stock market was greater than the total value of land in England. Half of this market cap was represented by South Sea Company's stock. In France, the Mississippi Company was the only significant publicly traded entity and it controlled the national debt, tax collection, colonial trade, the Mint, and the equivalent of the Federal Reserve. So, a boom and bust in the share prices of these companies was bound to have more consequences than a boom and bust in the shares of Cisco, for example. The bubbles also contaminated other asset classes, such as real estate.

Let's start with the bubble in France. It's known variously as the Mississippi Scheme, Bubble, or System. The term "System" is indicative of the scope of what its creator, John Law, hoped to accomplish in France. At one point, Law even tried to eliminate the use of gold and silver as money in France. Recall that only a few decades ago five dollar US "Silver Certificates" explicitly stated "there is on deposit in the Treasury of the United States of America five dollars in silver payable to the bearer on demand". So you see how visionary John Law was, especially during the age of mercantilism.

Law was the son of a Scottish goldsmith and soon moved to London and made a name for himself as a gambler and ladies' man. In a 1694 duel, he killed a well-connected gentleman, and was convicted of murder. Law's friends arranged for his escape from prison and he fled to the Continent, where he made his living gambling, utilizing his knowledge of probabilities. In his spare time, he wrote two well-regarded books on

macro-economics and tried to get Scotland, England, and other governments to implement some of his theories. Law recognized that gold and silver had no intrinsic value and their scarcity often constrained economies. Using other measures of money would allow the expansion of credit and improve national economies, especially where capacity was underutilized, such as in his native Scotland.

In the gambling halls of Europe, Law became friends with the duc' d'Orleans of France, who after the 1715 death of Louis XIV, became the Regent for Louis XV, who was far too young to rule. At this point, France's credit was shot. Due to the most recent series of wars, it had a large budget deficit and national debt. The traditional French way of handling this was to unilaterally change the terms of the debt, the value of the money, and/or threaten financiers with imprisonment if they did not agree to hand back some of their money. This resulted in the French government being required to pay a much higher interest rate on their national debt than the Dutch (whose credit was impeccable) or Britain.

One of the Regent's first acts was to initiate such a financier purge. John Law was helped by the low profile that the financial oligarchs were forced to keep because of the purge. Law had come to Paris in 1714 and was allowed to open the General Bank in 1716. This was a private commercial bank, but the Regent was one of the principal shareholders. The Banque became very profitable and thus was nationalized in December 1718, at a considerable profit to Law and the other investors. It was now the Royal Banque, and you can think of it as being comparable to a primitive Federal Reserve Bank. The Banque's notes became Legal Tender. Normal commercial constraints on the

Banque's issuance of notes no longer applied; only the approval of the King's Council was required.

To settle the claims against him in the purge, a major financier agreed to hand back to the government the monopoly on trade with the French colonial possessions in North America. In August 1717, a deal was made whereby this monopoly was given to what became known as the Mississippi Company, controlled by Law. In return for the monopoly, the Company exchanged shares for existing publicly held short-term government debt and lowered the interest rate owed by the government. This was the initial tranche of funding for the Company. This copied the South Sea Company's IPO in 1711-13, which we'll get to soon.

The Company went on an acquisition spree and by June 1719 had bought the tobacco monopoly and also the companies that controlled virtually all of France's other colonial trade. Because Law also controlled the Banque, he was able to provide the liquidity, both direct and indirect, to finance these acquisitions.

In contrast to the Mississippi, the South Sea Company did not control the money supply and had no substantive non-financial businesses. The South Sea Company only made perfunctory attempts at colonial trade, but John Law was serious about it. To build a fleet and make these acquisitions required money and so the Company had to sell more shares. For these additional tranches of funding, the Company used an innovative combination of leverage and derivatives. The second tranche of funding in May 1719, for example, allowed the public to buy shares at 550 livre, a premium to the market price of 450 livre, up from the initial 150 two years earlier. At first glance, you would say that is a pretty bad deal for subscribers. However, to subscribe you only needed a down payment

of 50 livre, followed by 20 monthly payments of 50 livre. After the first monthly payment, you could freely trade the subscription rights. If you missed a payment, you only lost the initial downpayment. Thus, this is a form of Call option and also has a lot of similarities to a mortgage where you just mail in the keys if things go badly. Finally, in order to subscribe, you needed to own 4 shares from the original tranche, effectively supporting those prices. Even this early in the process, you can see two of the common features of bubbles: new or excessive forms of leverage and derivatives.

Another feature of bubbles is a wave of liquidity. In the first half of 1719, the Banque issued 160 million Livre of Notes, including 50 million just before the second tranche of shares. This was more than the peacetime annual government expenditure.

In July, Law struck a deal to run the French Mint for nine years in return for an annual payment to the Government. Mints profited by taking advantage of the difference between the cost of bullion and the nominal value of the coin. Following this, the Banque issued another 221 million livre, and the Company announced a third tranche of share sales. The market price was now 1,000 livre. The pro-forma price earnings ratio was around 17 so it is hard to argue that the valuations were unreasonable despite the increase in share price and the fact that the new market cap would be twice the peacetime annual expenditures of the government. One could also argue that the rapid increase in the money supply was needed to reverse the deficiencies of the past, when the economy was starved by a lack of silver/gold coins and an immature banking system. A troubling note however was the tripling of the Company's dividend at the same time as the company was raising massive amounts of money by selling stock. This was another device that ended up being copied by the South Sea Company. It is still used today when companies

leverage their balance sheets to pay a special dividend. You always have to ask yourself: is it prudent for a company to increase the dividend when it is seeking large amounts of additional capital?

Within a few weeks the share price rose to 3,000 livre, 50 times earnings, and it was tougher to make the case that the price was justified, especially since so much of the company's business was based on monopolies granted, some for just a limited time, by a government with a history of breaking faith with its financial partners. You would have to make very optimistic assumptions about the future profitability of the monopolies.

In August, Law and the Regent announced a stunning plan. The government would annul the lease on the tax farms that had been given to another company and transfer it to the Mississippi Company at a much higher lease payment. Tax farming is a system where private parties pay the government a fixed fee in return for the right to collect specified taxes. If more taxes are collected than the fee, there is a profit. In return for the tax farms, the Company would issue more shares and exchange them for the remaining national debt. The existing debtholders would be forced to accept shares paying a lower dividend, but would have the opportunity to make (or lose) based on the share price. Instead of paying 4%-5% to the holders of the existing debt, the government would pay 3% to the Company for the new debt. This breach of the original tax farm lease agreement should have caused concern for the cash flows backed by the government's long term agreements.

The Company would pay for the deal with three tranches of stock offering, summing to 1.5 billion livre, 17 times the total amount raised in the two years prior. That assumes the full amount of the subscriptions was actually collected, not just the

downpayment. The share price had broken through the 5,000 Livre mark. Unlike the prior stock offerings, these did not require purchasers to already own shares, but repeated the tactic of just requiring a small downpayment followed by monthly payments. When purchasers had difficulty making the monthly payments, the terms were changed to quarterly payments. Eventually the Company would even loan up to 2,500 livre per share at an interest rate of only 2%. Soon the share price settled in the 9,000 – 10,000 livre range.

Modern profit estimates range from 134-218 livre per share. Law's own estimate was 152. Bear in mind that most of these profits were dependent upon the monopolies granted by a fickle government. They could hardly be considered perpetuities. Despite this, the dividend was soon raised to 200.

You could still tell the story that there was huge potential in colonial trade. International trade was exploding, especially in sugar, tobacco, and slaves. To reinforce the excitement about colonial trade, several colonization expeditions went to the New World. In 1718 New Orleans was named after the Duc. The actual colonies were at best a few shacks, although the reports the Company distributed put a nice gloss on them.

In January 1720, Law was made Controller General, the equivalent of Prime Minister, Treasury Secretary, and Federal Reserve Chairman rolled into one. Everything seemed great. France was awash with the economic exuberance you'd expect from a rapid increase in asset prices and liquidity. Law was the Maestro. This caused great concerns in England. After several decades of war with France, England had been looking forward to a less stressful period with France weakened by a bankrupt economy and a boy-king. Now, the French economy and spirit seemed vibrant. Capital was leaving

London for Paris where fortunes could be made. If London lost its financial preeminence, could military weakness follow?

It soon proved impossible to keep the money in the financial system from sloshing into the 'real' economy. Law was aware of the risks involved with excess liquidity, but believed that the bricks and mortar economy would expand quickly enough to utilize the extra money. This proved false and there was a rapid increase in commodity and other asset prices. For example, in Paris real estate soared to a Price/Earnings ratio of 50. Law tried to put the genie back in the bottle but the Maestro seemed to have lost his touch. In February and March a series of measures were proclaimed and then reversed. The Banque announced that it would no longer print bank notes to support stock purchases. The Company's share price dropped by one-fourth in a week.

Law tried to reduce the importance of gold and silver. Possession of more than 500 livre in coins was prohibited, as was the wearing of diamonds and fine jewelry, and the manufacture of gold and silver artifacts. Gold was to be demonetized and silver to be gradually devalued. Large payments had to be made in bank notes. All of this was to be enforced by a system of informants and searches.

The Company office that had opened in late 1719 to buy and sell its shares closed in February and then reopened under a different name. Now the office would convert stock into bank notes at 9000 livre, which effectively monetized the shares, whose market cap was now 5.4 Billion Livre. The bank note supply expanded by 2 billion livre, keeping 9 printing presses running. An edict allowed vagabonds, prisoners, beggars etc... to be forcibly sent to Louisiana. Press gangs were popular. This edict was reversed two months later.

In May, the Bank was closed for 10 days due to a bank run. Foreign money left for England as the South Sea Bubble began to inflate. On May 21, it was announced that the Mississippi shares previously pegged at 9,000 would now be pegged at 5,000. There were several days of rioting and the devaluation was reversed. Law was fired on May 27 and on June 1 was recalled by the Regent. In June, there were regular public burnings by Law of shares and bank notes to withdraw them from circulation.

Lessons we can learn from this are that withdrawing liquidity can be very difficult and that consistency of policy may be as important as the correctness of the policy. Markets need to know the rules of the game. This was one of the big concerns a year ago when it seemed as if the rules were changing by the hour. When the rules are changed, the markets need to have confidence that the people in charge know what they are doing.

In July, there were many bank runs, and several people were crushed to death in a crowd trying to exchange paper for coins. Law's house and coach were attacked and he moved into the Palais Royal. Even worse, an epidemic of either smallpox or bubonic plague struck southern France. Perhaps 30,000 – 50,000 people died over the next few months. It was seen by some as divine punishment for the excesses of Law's System. You get the sense of a society that is rapidly breaking down.

By October, shares were valued at 2000L. Half the Banknotes and 2/3 of the shares had been withdrawn. The Regency Council announced that notes were no longer legal tender and had to be converted to annuities. Many of Law's staff left the country, fearful of the future.

On November 27 the Bank was closed. Shareholders were required to lend 150L per share to the Company. On December 18, Law and his son left France for Brussels. Law's wife and daughter, who had remained in Paris, were not permitted to leave

Keeping these events in mind, let's see what was happening across the Channel. England too had accumulated a large national debt as a result of the wars. Queen Anne died childless in 1714. The Act of Succession had disallowed Catholic claimants to the throne and it passed to George of Hanover, in modern Germany. There was a justified fear of invasion by the descendants of the Catholic James II, deposed in 1688. There had been an invasion attempt in 1715 and even thirty years later their supporters, called Jacobites, occupied Edinburgh and marched into England.

England's financial system, spurred on by the Dutch influence and the need to fund the wars with France, was now perhaps the most advanced in the world. At around this time, the modern party system developed in England. To generalize, the Whigs were the party of the commercial classes and the cities, and strong supporters of the Hanoverian succession and the wars against France. The Tories were the party of the landed gentry and the Anglican Church. They were not thrilled with the Hanoverian succession and some were sympathetic to the Jacobites. The Bank of England, founded in 1694, was generally considered to be a Whig institution, just as Fannie Mae in our own times was generally considered to be a Democratic Party institution.

In the last years of Queen Anne's reign, the Tories controlled the government, led by Robert Harley. In 1710 Harley was looking for a way to reduce the government's debt load and thus was receptive to a proposal put forth by several partners in the Sword Bank. Parliament was to charter a new company, the South Sea, which would be given the

Asiento, the monopoly that the Spanish crown gave for the slave trade with Spanish South America. Of course, Spain had not agreed to this but that was a mere detail since the Company really was not serious about doing much with the Asiento. The Company would issue stock and exchange it for a portion of the publicly held government debt. Debt refinancing had traditionally been done by the Bank of England; the weakening of the Bank was an added bonus from Harley's perspective.

Nothing earthshaking happened with the South Sea Company until 1719. The Whigs had been in power since 1715. Surprisingly, the Company had managed to ingratiate itself with the Whigs. In 1719, the South Sea Company reached a deal with the government. The Company was allowed to sell additional shares of stock in order to buy back from the public £1.5 million of government annuities. These annuities were paying 7-9% interest with no early call provisions. The debtholders would receive stock with greater liquidity worth close to the debt's fair value. The converted annuities, now held by the Company, were converted to new debt that was callable and paid interest of only 5%. Interestingly, this was less than the dividend paid to Shareholders of the Company.

What did the Company get out of this? It's important to remember that Parliament had to authorize the issuance of new shares by the Company and authorized the issuance of more shares than would be needed for the conversion. The Company could sell the excess shares. The higher the share price, the more money that the Company would receive for the excess shares authorized by Parliament. In 1719's refinancing, the conversion ratio, and thus the number of excess shares, was set by Parliament.

The 1719 conversion turned out to be a dry run for the much larger conversion of 1720, when the conversion ratio was not set by Parliament. The higher the share price,

the fewer shares needed to be given to the debtholders for their debt conversion. This left more shares (of those authorized by Parliament) that the company could sell on the open market. Thus, the incentive to ‘bubble’ the stock was even higher than usual since the Company would be able to sell even more shares and get more per share. It is no surprise that a Company would like to get as high a price as possible when selling shares. In contrast, companies during the Internet Bubble deliberately underpriced their IPO’s in order to generate a post-IPO pop. Both approaches are questionable.

In January 1720, when the Mississippi Scheme was at its peak, the Company approached the Exchequer, proposing that the Company restructure the entire national long term debt (£38 million) not already held by the Company, including the £7 million held by the Bank of England and the East India Company. The government would get a lower interest rate, more freedom to call the debt in, and money upfront from the Company. Parliament loved the idea in principle, but required the Bank of England to be allowed to counterbid. A bidding war ensued, and in March the South Sea Company’s revised offer was accepted. The restructuring was scaled back to £31 million and excluded the debt owned by the other companies. Despite this, the government would receive much more money from the Company and an even lower interest rate.

The Company was supposed to first offer shares to be exchanged for debt and, as those conversions happened, the Company would be allowed to create Treasury shares that could then be offered for cash. In reality the first stock offering, on April 14, was a money offering. Subscribers had an initial 20% payment, followed by 10% bimonthly payments. Furthermore, the Company would lend up to £3,000 per person to subscribe.

To compete, other English companies ended up using the same techniques, leveraging up the market as a whole. Remaining cash held by the Company could be used to pay bribes.

The South Sea projectors went far beyond the usual petty bribery. The bribes went to almost all of the major politicians of the ruling party, the King's mistresses, and possibly the King himself. The bribes were both in cash and call options on the stock price. The typical strike price was £200. One person not bribed was the future Prime Minister, Robert Walpole, who on this occasion was, according to one historian "so astute that he had curbed his own great venality sufficiently to be free of any complicity in the scandalous episode". In fact, Walpole was feuding with the ruling clique so he probably wasn't considered worth bribing.

The bribes were recorded in a secret ledger, called the Green Book, kept by the Company's cashier, Robert Knight. A year later, Knight fled to the Continent taking the Green Book, which was never seen again (much to the relief of many politicians). While the English government publicly asked to have him extradited, privately it arranged his escape from custody. In our enlightened times we don't bribe politicians, we give them political contributions and special rates on mortgages, especially if they are on key congressional committees.

We saw how the Company benefited from the rise in the stock price. Now we see how Government officials also did. The bondholders also perceived a benefit by the "certainty" of capital gains. The share price had increased from £120 to £300 in early April. In the Age of Newton, a stock price in motion would certainly continue in motion, a belief supported when even the King subscribed £100,000. Clearly, in both France and

England, government officials were tightly linked to the institutions. Thus there was the expectation that these firms would not be allowed to fail.

The price rise would accelerate further as the Company used some of the same bubbling techniques used in France. In addition, speculative money had started to return to London from France as things fell apart there.

The first debt subscription and second money subscription followed two weeks after the first money subscription. While that first money subscription was issued slightly below the market price, in the second subscription the price was £400, much higher than the market price of £330. The Company had realized, as John Law did, that easy payment terms allowed them to charge a premium. It's effectively an out of the money Call option. The terms were easier in this subscription, only 10% down with the balance in 10% tri-monthly increments. Some of the money was lent to subscribers. Lending to subscribers had the advantage of keeping the shares off the market, since they were held as security.

In the 3-4 weeks prior to the next money subscription on June 17, the share price almost doubled to £745. The terms for this new subscription were even more lenient: 10% down, followed by 10% semi-annual increments beginning a year in the future! As a result, the subscription price was £1,000. In this case, subscribers didn't even receive their receipts for several months. Furthermore, in the debt subscriptions, bondholders that converted did not get their stock certificates until January, after the collapse.

This provided a spur to financial innovation. Contracts were traded that provided for delivery of receipts 'as soon as the receipts shall be delivered out by the said Company'. This was trading of 'to be issued' receipts for 'to be issued' stocks. Of course bondholders that converted could hedge themselves in the futures market while waiting.

It is all thoroughly modern. In fact, receipts for stock subscriptions and conversions were more liquid than actual shares since their ownership did not have to be registered in the Company books, which was a bureaucratic process.

As the Company was selling shares during these and the other subscriptions in the Summer, it was also buying shares to support the price. Foreign money was pouring in. The shares of other companies in England were also increasing. Robert Harley's brother wrote to him "No one is satisfied with even exorbitant gains, but every one thirsts for more, and all this founded upon the machine of paper credit supported only by imagination...". At least 200 new companies went public, most of which did not survive.

Dutch share prices were also bubbling, although less spectacularly than in England or France. There was even a special road trip of English speculators to invest in Dutch insurance companies. Speculators established especially fast communication systems between England and Holland.

By the end of August, the Company faced a liquidity crisis. Assets were £114 million, versus liabilities of only £15 million. Unfortunately many of the assets were of poor quality or were long term and could not be used to pay the short term liabilities. Even back in 1720 and then more recently with Bear Stearns, prudent business people knew that Long Term Assets vs. Short Term Liabilities was a recipe for a Liquidity Crisis. The Company had no cash to pay those liabilities, having spent so much supporting the stock and paying bribes.

All that remained was the inevitable liquidity event. The stock price had peaked at £1,050 on June 24 and gradually drifted down below £850. Many believe that the speculation in Holland and the final subscriptions had sucked a lot of money out of the

London market. As is so often the case, the actual triggering events appear to have been of the Company's own making.

In this case, on August 18, the Bubble Act, described as 'so ambiguous as to be almost incoherent', started to be enforced. Parliament had passed the bill in June, at the instigation of the Company, forcing corporations to have a charter and stay within the limits set by it. The Company was concerned that so many other companies were being formed and raising money that they were siphoning money from the Company. No con artist likes to see someone else plucking his favorite pigeon.

When the Act started to be enforced against some of the smaller companies, there were increasing waves of selling of shares of companies thought to be vulnerable. This caused margin calls forcing holders of even the large companies to sell. In a liquidity event, you sell what you can, not what you want, as we saw in the Fall 2008. Within a few weeks, some smaller banks failed.

On August 31, the Company declared a substantial increase in the dividend to £50 for the next 12 years! The share price had declined to £770 and the market seems to have perceived this dividend increase as showing signs of panic by the Directors. They were running faster and faster to stay in place. On September 6, the share price had declined to £660 and two days later the Directors declared a special Christmas dividend. The following day the share price was down to £600. This was a point at which a lot of new money had come in and there was additional wave of selling caused by margin calls and the psychological need to avoid a loss.

On September 19, there was a run on the Sword Bank, the Company's bank. Collapse was narrowly avoided by paying in small change until closing. Around then,

there was a meeting between government officials, the Company, and the Bank of England, similar to what we've seen with Long Term Capital, Bear Sterns, and Lehman. The Government pressured the Bank to bail out the Company because of the risk to 'Publick Credit', what we today call systemic risk. There was an agreement of sorts for the Bank to re-liquify the Company, assuming the money could be raised, based on a South Sea share price of £400. On September 24, the South Sea Bank failed and the Company's share price declined to £300. Shortly afterwards the Bank of England withdrew from the bailout, concerned that the Company would bring them down also. This was not a trivial concern, since the Bank was also combating bank runs. Also, because of the liquidity crisis, the shares of even the bluest chips in London had collapsed during September. The shares of both the East India and Royal Africa companies declined by more than 50%. The Bank of England shares 'only' declined by one fourth.

A common characteristic of popped bubbles is punishment of those presumed to bear responsibility. At this point, I'd like to take an extended quote from Charles MacKay's 19th century classic 'Extraordinary Popular Delusions and the Madness of Crowds'. Although he may have overstated the case, I can't improve on his wording:

public meetings were held in every considerable town of the empire, at which petitions were adopted, praying the vengeance of the legislature upon the South-Sea directors, who, by their fraudulent practices, had brought the nation to the brink of ruin. Nobody seemed to imagine that the nation itself was as culpable as the South-Sea company. Nobody blamed the credulity and avarice of the people,--the degrading lust of gain, which had swallowed up every nobler quality in the national character, or the infatuation which had

made the multitude run their heads with such frantic eagerness into the net held out for them by scheming projectors. These things were never mentioned. The people were a simple, honest, hard-working people, ruined by a gang of robbers, who were to be hanged, drawn, and quartered without mercy.

This was the almost unanimous feeling of the country. The two Houses of Parliament were not more reasonable. Before the guilt of the South-Sea directors was known, punishment was the only cry. ... The Lord Molesworth was particularly vehement. "It had been said by some, that there was no law to punish the directors of the South-Sea company, who were justly looked upon as the authors of the present misfortunes of the state. In his opinion, they ought upon this occasion to follow the example of the ancient Romans, who, having no law against parricide, because their legislators supposed no son could be so unnaturally wicked as to embrue his hands in his father's blood, made a law to punish this heinous crime as soon as it was committed. They adjudged the guilty wretch to be sown in a sack, and thrown alive into the Tiber. He looked upon the contrivers and executors of the villanous South-Sea scheme as the parricides of their country, and should be satisfied to see them tied in like manner in sacks, and thrown into the Thames." Other members spoke with as much want of temper and discretion. Mr. Walpole was more moderate. He recommended that their first care should be to restore public credit. "If the city of London were on fire, all wise men would aid in extinguishing the flames, and preventing

the spread of the conflagration, before they inquired after the incendiaries. Public credit had received a dangerous wound, and lay bleeding, and they ought to apply a speedy remedy to it. It was time enough to punish the assassin afterwards."

This excerpt could apply, almost unchanged, to last Fall and Winter.

Speaking of Walpole, once the bribes were made public as a result of the Parliamentary investigation, Walpole was one of the last Whigs of any consequence left untainted. He had made his reputation as a financial expert and had been wise enough to listen to the advice of his even wiser banker who also provided the outline for the August 1721 bailout. It was based on the principle that everyone shares in the pain, including the government. Appropriately, it was called "An Act to Restore the Public Credit".

Most of the Company Directors had a large part of their estates confiscated even though they had broken no laws. Several of those MPs that had taken bribes were expelled and fined. Some were imprisoned. At least one committed suicide. Others had the decency to die of natural causes. John Blunt, the South Sea's chief executive, gave state's evidence to Parliament's Committee of Secrecy and died in obscurity in 1733 Robert Knight's estate in England was confiscated but he made another fortune in Europe, and amazingly enough was allowed to purchase a Royal Pardon in 1742, after Walpole's fall.

Walpole was clever enough to resist fully utilizing this opportunity to punish his Parliamentary enemies and thus screened some of the most highly placed of those bribed, leaving them beholden to him. Others were only moderately punished in return for being

designated 'fall guys'. Walpole balanced the need for the appearance of justice against maintaining some semblance of legitimacy for the government.

In France a similar bailout occurred. It was run by members of the French financial oligarchy that had been in power prior to John Law and seems similar to the English solution. Supposedly a half million people filed claims for losses, although that seems far too high. Claims of less than 500L were not reduced. The average holder ended up getting 17% of face value in March 1722. Later, an additional tax was imposed on the property of those that had won big. The Mississippi Company's non-maritime monopolies were forfeited and the Company was held responsible for the Bank's debt. The Company was put into receivership and was eventually liquidated in 1770.

Despite the convulsions immediately after the System's collapse, French society reverted to the pre-System status quo within a few years. Because the Roul Banque was so new, it did not have a long history of benefits to point to and its collapse discredited the whole idea of a central bank and the New Finance in France. The financial oligarchs returned to power. The market interest rate on gov't perpetual debt continued its pre-System status of carrying a much higher interest rate than that imposed on England and Holland.

The major long-term consequence related to opportunity cost. France distrusted paper money and banks for almost one hundred years, which likely contributed to the country's relative weakness versus England. Even when new banks were established, they were careful to avoid using that term. People like Montesquiu and Voltaire advanced the argument that Law was a mountebank. Voltaire commented in 1729 that "Paper money eventually returns to its intrinsic value ---- zero." Despite this, even he believed

that “in the end, although many private fortunes were destroyed, the nation soon became richer and more mercantile.” However, some modern historians disagree.

In England, while the Bank had some close calls, it avoided being brought down by the collapse of its competitors. Also, it had been in existence for 25 years and had time to gain credibility and co-opt much of the ruling class. Many of the most fervent English opponents of the New Finance had been discredited for their Jacobite leanings.

Bearing this in mind, what are some templates for bubbles? First, it’s probably too much to hope that we can avoid all future manias. Manias are, by their and our very nature, difficult for human beings to resist. We can however hope that understanding the past will help us avoid the worst repercussions of those manias.

Second, behind most bubbles is a story. People love a good story, especially if it is sexy. A true story can serve just as well as a fairy tale. In 1720, the story was the colonies of the New World. In 2000, it was the Internet. In 2006, the story was the increased safety represented by securitization and diversification.

Third, virtually all bubbles have excessive leverage and/or use of derivatives. A virtue taken too far becomes a vice.

Fourth, bubbles in one asset class infect other asset classes as exuberance and wealth increase. In bubbles and panics, virtually every asset class is correlated. Often, real estate is involved because of its illiquidity and traditional leverage. Similarly, a bubble in one country is rarely confined to that country. Money sloshes due to an increase in the supply and velocity of money and credit.

Fifth, investors in a bubble buy not for the investment merits but for fear of missing the move. We’re all familiar with Chuck Prince’s quote from July 2007: “When

the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing," Sometimes the bell does ring. I remember reading this and starting to take a more bearish stance, although not nearly bearish enough. It's no surprise that the Greater Fool Theory was well described by an anonymous pamphleteer in 1720: *"The additional rise above the true capital will only be imaginary; one added to one, by any stretch of vulgar arithmetic will never make three and a half, consequently all fictitious value must be a loss to some person or other first or last. The only way to prevent it to oneself must be to sell out betimes (sic), and so let the Devil take the hindmost."*

Sixth, ~~Pigeons~~, I mean non-traditional investors, are attracted to manias. In 1720, there were many stories of servants getting rich both in England and France, along with other non-traditional investors such as women and even poets like Alexander Pope. Most of you have heard the story of the shoeshine boy giving investment advice to Bernard Baruch in 1929. In our own day, television had the countdown to Dow 10,000 on CNBC, Carmella Soprano first investing in stocks and then building spec houses, even the episodes on King of Queens when the Heffernens are doing the same. Finally, there were the cable channels apparently dedicating to flipping houses.

Related to this is, seventh, conspicuous consumption and the envy of others getting rich. The South Sea and Mississippi money led to boom times for coaches, jewelry, servants, and real estate. Often the envy is expressed as a desire to put money to work instead of having it in boring, safer ventures. Jerry Seinfeld reminds us that sometimes when your money goes to work it ends up getting fired.

Eighth, governments typically actively or implicitly support the manias and then arrange bailouts. To divert attention from their own sins, demagogues go to the head of the mob, leading the cry for revenge.

Ninth, bubbles lead to an increase in what John Kenneth Galbraith called the 'bezzle', the inventory of undiscovered embezzlement. *"In good times people are relaxed, trusting, and money is plentiful. But even though money is plentiful, there are always many people who need more. Under these circumstances the rate of embezzlement grows, the rate of discovery falls off, and the bezzle increases rapidly. In depression all this is reversed. Money is watched with a narrow, suspicious eye. The man who handles it is assumed to be dishonest until he proves himself otherwise. Audits are penetrating and meticulous. Commercial morality is enormously improved. The bezzle shrinks."*

My final observation is that French and English society a few years after the 1720 bubbles looked very similar to a few years prior. Societies have a great deal of inertia and it usually takes a lot more than a financial mania to divert a society from its long term trendline. You could even make the case that the governments at least benefited from these manias, since they emerged with their debt on a much sounder basis than before. There are no hard and fast rules of course and certainly the Great Depression was also the Great Exception, but the events of 1720 give us reason to believe that the New Normal may look very similar to the Old Normal.

I'd be happy to take questions now. Also, if you send me your email address, there's supplementary material I can send you.