



## **God meets Mammon: The Financing of the New Cathedral**

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Some years ago, I was asked to give a lecture at the National Gallery on dress in the 1690s. It was to be a part of a series: Aileen Ribeiro was talking about the dress of the 1790s, the late Janet Arnold about dress in the 1590s, somebody from the V&A did the 1890s, and some fashion expert did the 1990s. I pointed out when they rang me up that I had written an article on the economics of clothing in the 1690s, and they said, 'Yes, we know, we know all about that - that's why we've asked you,' they said. 'It is a most important and seminal article.' But I said, 'The problem is, I've made all the points I want to make about dress in the 1690s in the article, and I don't think I've got anything new to say.' They said, 'That doesn't matter, just tell us what you said in the article - no one will have read it!' Well, it turned out that no one had read it, or at least no one was impolite enough to claim that they had!

On this occasion, when I am to talk about the financing of the rebuilding of St Paul's Cathedral after the Great Fire of London in 1666, there is no such problem. I have never written anything about St Paul's Cathedral or its financing, so there is no scope for ignorance or need for politeness. Indeed, there is something of the reverse problem, because, after I had agreed to give this lecture, but before I had begun to think about it, an unusually interesting little book appeared on the subject of the rebuilding of St Paul's Cathedral. By 'unusually interesting little book', I do not mean to imply that interesting books about St Paul's are unusual, but they are usually rather large, and little ones are certainly unusual. Dr James Campbell's 'Building St Paul's', published less than a year ago, is a very concise, systematic and intelligent account of the process of the rebuilding, and he covers the essential points about its financing.

For a time, I slightly hoped that this lecture of mine might therefore become superfluous, but on further reflection, I realised that Dr Campbell perhaps missed out on an aspect of the story through his focus. He is a very good and perceptive architectural historian, in the post-Howard Colvin manner, and although he deals with finance, he says nothing about the economic context in which that magnificent building was erected. So perhaps there are a few points that I might be able to add.

St Paul's took a long time to rebuild. All the other churches in London and the livery halls, the public buildings and the houses were all rebuilt fairly rapidly after the Great Fire in 1666, but St Paul's took a long time. The new foundation stone was not laid until 1675. The first service in the new Cathedral was held in December 1697, to celebrate the Peace of Ryswick, that brief outbreak of peace in the wars against France, and subsequently, services after 1697 were held in makeshift accommodation in what was really still a building site, with the dome not at all completed.

Not until 1709 was the structure of the dome finished and the complicated internal scaffolding taken down. In 1711, Parliament took it upon itself to declare the new Cathedral completed. The metalwork, the woodwork and the internal decoration, however, all remained to be undertaken. Indeed, the final statues on the south façade of the Cathedral were not placed there until 1724. I believe the correct date for the completion of the Cathedral is 1724. So the 300th anniversary is coming up, but you can raise a little more money before 2024. The tercentenary of the 'topping out' of St Paul's is actually going to be celebrated

next year but I think the statements about finishing the building at any earlier date than 1724 are misleading. The finished Cathedral must surely include the decoration, the woodwork, the ironwork, and the statues that decorate the facades. The mere stones themselves are surely only the shell of the building, and the Cathedral cannot be considered complete until all the decorative features in it and on it are in place.

Thus, from the laying of the new foundation stone in 1675, till the completion of the decoration in 1724, the rebuilding of St Paul's took 49 years - just one year short of half a century.

Sir Christopher Wren himself had died the previous year, in 1723, aged 91. He had lived very long, by the standards of the 17th or 18th Century, straddling what were really two, if not three, generations, but he lived not quite long enough to see the final completion when St Peter and St Matthias - I do not know why these two saints were chosen - were put on the south façade in 1724, marking what I regard as the completion of the building. He did, however, live just long enough for his tomb to become one of the finishing touches to the totality of the monument.

I suppose the elegant way to describe the progress of the rebuilding of St Paul's would be 'majestic'. It might be more accurate to say that the process was long drawn-out, because of persistent squabbling - over Wren's plans for the building, not least about his financing - constant troubles and difficulties, which make the persistent charges of cronyism, kickbacks, and corruption at the court of Ken Livingstone as Mayor of London in recent years, rather pale in comparison. The planning of the Olympic Games in 2012 or the investing in the renewal of the Underground system, to mention just two large current schemes, seem to the economic historian disconcertingly familiar to what was going on some 300 years later. Certainly, the problem lay more with Mammon than with God. We know enough about God. What about Mammon?

In Christian thought, the two brief biblical references to Mammon, in Luke and in Matthew, came to have great significance as the personification of the anti-God of greed and covetousness - you cannot serve both God and Mammon. As capitalism, in its various forms, was getting going, from the late Middle Ages onwards, more and more references can be found to the pervasive evil influence of Mammon. Mammon was given a new lease of life by Milton:

"Mammon, the least erected spirit that fell from heaven, for even in heaven, his looks and thoughts were always downward bent, admiring more the riches of heaven's pavement, trodden gold, than aught divine or wholly else enjoyed in beatific vision."

This is 'Paradise Lost', written in 1667, just as the Dean and Chapter of St Paul's, not to mention the City and the King, were beginning to ponder the problem of how to pay for the rebuilding of the Cathedral after the Great Fire. Milton was not very helpful to them.

The Dean and Chapter may have had fewer problems with capitalism than Milton did with Mammon. Forty years previously, another famous poet had spoken in the old Cathedral itself about a rich man who had died. In 1626, 41 years previously, Dr John Donne, as Dean of St Paul's, had delivered a eulogy at the funeral of William Cokayne. Alderman Cokayne was well-known as the greatest rogue and cheat of the 17th Century. The Cokayne project to hijack the English cloth trade in the second decade of the 17th Century is notorious as one of the most audacious frauds of all time in the City. It was instrumental in causing that nationwide collapse of trade in the early 1620s that Tawney once referred to as 'the great depression'. Alderman Cokayne was a fraud, even by the standards of, shall we say, Robert Maxwell. But we have a record of what Donne said about Alderman Cokayne at his grand funeral in 1626:

"The Lord was with him in all these steps, with him in his life, and with him in his death. You have lost a

man that drove a great trade, the right way in making the best use of our home commodity. To fetch in wine and spice and silk is but a drawing of trade. The right driving of trade is to vent our own outward. He did his part diligently at least, if not vehemently, if not passionately. God was with him all the way, in a pillar of fire, in the brightness of prosperity, and in the pillar of clouds too in many dark and sad and heavy crosses."

God, in other words, was in favour of exports, and apparently in favour of whatever fraudulent practice could achieve this mercantilist end. Menna Prestwich, in her 'Life of Cranfield', describes this oration of Donne's as marking 'the happy marriage of capitalism and Anglicanism'.

The late-17th Century in fact saw a major reconciliation of God and Mammon. The central arena of the conflict between God and Mammon had long been on the battlefield of usury. Borrowing money had long been a problem for the church, particularly when it was the borrower. For long, 10% had been thought to be a critical threshold, perhaps even 8%. More than 10%, or perhaps more than 8%, was thought to be seriously evil. There was a great deal of teaching on this subject for centuries.

From the late 17th Century, the real rate of interest generated by the economy began to fall below 10%, and indeed, below 8%. This fall in the real rate of interest is one of the important features of the late-17th and early-18th Century economy, and it was this fall in the rate of interest that led to the church's problem with usury fading away.

When Donne was praising rich rogues in the 1620s, the rate of interest was indeed about 10%, tending down to, if you were lucky, 8%. By the time they were beginning to rebuild St Paul's in the 1670s, it had fallen to 6%, and by the time they were finishing St Paul's in the 1720s, it had fallen to 4%, and in 1750 the consolidated funds as they had become, fell to 3%. The church's objection to usury faded away, became a thing of the past, and the long religion-versus-economics battle simply came to an end. Menna Prestwich's 'happy marriage of capitalism and Anglicanism' just took over. This is the first sense in which the rebuilding of St Paul's occurred at the right time.

The gothic spire of the old Cathedral had famously burnt down in 1561, thus helpfully assisting in providing a useful guide to the dating of the earliest bird's eye prints and maps of London in the late-16th Century. The spire, despite many plans, was never rebuilt. Eventually, in the 1630s, the west end of the Cathedral was provided with a gigantic Corinthian portico by Inigo Jones in the new Palladian manner, and quite a chunk of the gothic Cathedral was encased in Portland stone in the beginnings of an extraordinary marriage of the gothic and the classical.

The Civil War interrupted these plans, and the spireless Cathedral was allowed to drift, in an increasingly sorry state, until Christopher Wren presented his plans for its renewal in 1666. The brilliant young Christopher Wren, from 1657, at the age of 25, while a Fellow of All Soul's Oxford and Professor of Astronomy here at Gresham College, had already been attempting to introduce a new vision of God to Mammon in the City of London. Wren was, from 1661, Professor of Astronomy in Oxford. He was also the first person, I think, who could appropriately be described as an architect, though throughout his long association with St Paul's, he was all described as 'the surveyor'.

Besides being brilliant, Christopher Wren was well-connected. His boyhood had been spent at Windsor, where his father was Dean before the confusions of the Civil War, and his boyhood companions had been the future Charles II and James II, neither of whom were brilliant, but both of whom were surely well-connected.

The plans for the rebuilding of St Paul's that Wren drew up were presented to the Dean and Chapter on

27th August 1666. The centrepiece of his plan was to be a spectacular dome, the first in England, intended to dominate not just the Cathedral itself but the whole City of London. The 27th of August in 1666 was a Monday. On the following Saturday, by extraordinary coincidence, if the historian can ever use the word 'coincidence', on the 1st of September, the Great Fire of London broke out as a result of an accident in a baker's shop. After four dramatic days, two-thirds of the City was destroyed - the old medieval city of wood and plaster and thatch, over 13,000 houses, some ninety parish churches, over fifty livery halls, and most of the main public buildings. Only six people actually died, but well over 100,000 were rendered homeless.

It was of course all very unfortunate, but it opened up lots of possibilities for Wren. His proposals to rebuild the City on a heroic, Continental-style scheme were quickly rejected, but his captivating plans for the rebuilding of the city churches were quickly adopted and the various buildings were undertaken surprisingly speedily, but the huge task of St Paul's was left on one side.

The Great Fire destroyed much of the structure of the old Cathedral, but even before this presented such an opportunity to Christopher Wren, he was totally convinced that the old Cathedral should be entirely replaced by a new one; that gothic should give way to classical, and, above all, that a great dome should dominate the city's skyline. Christopher Wren had never been to Rome to see St Peter's, he had never been to Constantinople to see the great classical dome there - the two huge domes of traditional Europe - nor had he been to Florence to see Brunelleschi's splendid renaissance dome there. But Christopher Wren had escaped from the Great Plague in London in the previous year, 1665, to go to Paris, and he had seen the rebuilding of the Louvre, and he had seen the proliferation of domes in Paris. He certainly studied measure drawings of the great dome at Constantinople. He must have considered the spectacular domes of St Peter's and Florence, but I have been unable to establish that.

Some of the delays in the rebuilding of St Paul's in the 1670s arose from this tension. There were those, in the church and in the City, who wanted a quick patch-up job to provide the Cathedral with space in which they could hold big services. In particular, they wanted the choir to be quickly rebuilt and made available for services. Wren always wanted the new foundations for his new Cathedral to be built first, so that they could bed down in a way that he could carefully measure to see if the great weight of his dome could appropriately rest on the foundations. This fundamental disagreement, combined with the problems of finance, to begin the delay in rebuilding of St Paul's.

And so to finance we must turn?

The new Cathedral was financed, to put it in contemporary language, by a combination of a public/private finance initiative and a tax on energy. I am sorry that, at a respectable gathering like this, I have to use such Blairite terms, but the fact is that this is the best way to understand and to describe the way in which the rebuilding of St Paul's was in fact financed.

There had long been a small tax on the importation into the City of London of what was called sea coal - 'sea coal' because it was brought by sea, by a huge fleet of boats from Newcastle. There had been machinery in the City administration for raising this small tax. So it was not like the Congestion Charge, for example, which needed a whole new bureaucracy to raise.

The growth in London's population in the 17th Century was more than matched by an increase in the consumption of coal. According to my old friend, Professor John Hatcher, roughly half the coal brought to London was used by a growing number of industrial activities, and half was consumed by domestic consumers for heating and cooking. Hatcher estimates that about half a million tons per annum of coal were imported into London every year by the end of 17th Century. That is about one ton of coal per capita per annum for the population of London, which strikes me as being a fairly seriously large amount of coal.

In 1670, Parliament increased the coal tax to four-pence-ha'penny per cauldron, and a cauldron is about 16 sacks - all these figures I am giving, of course, are in 'd's, not 'p's, these are old pennies. This brought about £5,000 per annum to the St Paul's building account. In 1687, the coal tax was increased to 14 and two-fifths of a pence per cauldron - I do not know why it rose by this slightly bizarre amount - which brought in about £19,000 per annum subsequently. In 1700, it was reduced to 7.5p per cauldron, bringing in only 11,009 per annum, but in 1708, it was substantially increased to 2 shillings and 7-pence-ha'penny per cauldron, thus bringing in over £36,000 per annum, up to 1716. It was this very substantial increase in the coal tax after 1708 that enabled the Cathedral finally to be finished.

A further important change came in the late-1680s when, in the Act of Parliament increasing the coal tax, St Paul's was allowed to borrow money against the security of future income from this secure source. This transformed the finances of St Paul's. From 1685, they started to borrow money at the growing rate of 6%. This borrowing enabled the work of rebuilding to proceed more systematically and for an end to the financial troubles. The books are full of these financial troubles before this time and make too much of it in my view, but there are great financial troubles in the 1670s and '80s, when Wren himself sometimes had to lend money to the Cathedral and when he was paying contractors long in arrears. But after 1685, these troubles were now over.

Before the borrowing was permitted, the second source of finance besides the coal tax was appeals to the public for gifts and benefactions in various forms. For the 13 years between 1675 and 1688, donations of one sort or another made up an average at about £3,000 a year for the building account. After 1688, donations rapidly fell off, since people now had the option of lending money to the Cathedral and receiving interest in return. This made free gifts less appealing. Such was the victory of Mammon.

Borrowing against a tax on energy, therefore, provided the great bulk of the funds to build the new Cathedral. It is an irony that the Cathedral was subsequently financed by a tax on coal, the burning of which meant that, even in Wren's lifetime, as he was building the Cathedral, the beautiful Portland stone was first dulled and then darkened by the smoke from what had financed its building. Only now, in the first post-steam age generation, can we see St Paul's shining as Sir Christopher Wren intended.

In their own books, the accounts of the rebuilding of St Paul's between 1675 and 1710 showed a total expenditure of 878,523 pounds, 12 shillings and a penny. Of this, 810,181 pounds, 18 pounds and tuppence came from the coal tax, and 68,341 pounds, 14 shillings and a penny from gifts and benefactions. To this, the interest paid on the borrowing of money has to be added, as that is obviously a cost of the building, plus the continuing building costs incurred after 1710 when this balance was first drawn up. After 1710, it was still paying Thornhill for those splendid decorations, which Christopher Wren much disapproved of; you are still paying Grinling Gibbons for the woodwork, and so on, and the various other expenses right up to those two final statues being put up in 1724. For the whole period, from 1668 to 1716, the total raised or borrowed, according to Dr Campbell, came to the final figure of 1,157,782 pounds, 10 shillings and tuppence-ha'penny. I have to say that, though I am happy to believe Dr Campbell in this precise figure, I do not quite see exactly how he has got to it. However, I think it is fair to say that the total cost of the new St Paul's, over this 49 year period, was almost £1.2 million.

Now, how can we make sense of this figure? Can we say, in real terms, what £1.2 million represented? We can approach this question either in a macro or in a micro way.

The macro way would start with Gregory King. He was a herald with a passion for numeracy. He was a pioneer in what he and contemporaries called 'political arithmetic', a term sadly driven out of the language by the German term 'statistics' in the late-18th Century. Gregory King was the first person to attempt to estimate the English national income, which in the 1690s, he calculated to be about £50 million per annum. So St Paul's took the equivalent of around 2.4% of the annual national income to build. It was of course not built in one year, it was spread over 50, but this gives some idea of the undertaking, because nothing

else cost 2.7% of national income.

Gregory King was also the first person to attempt to estimate the population of England, which he thought was 5.5 million, in 1688. We now know that he over-estimated by 10%. Our estimates now, the Wrigley & Schofield estimates that are the current estimates for population, would give us about 5 million for 1688.

Over half this population came into two of the social groupings that King, in a pioneering way, laid down in the 1690s. There were 1.3 million people who he classified as labouring people and out-servants. In the 17th Century, servant meant in modern terms something like 'employee', and all living-in servants were - not domestic servants, because they could be employed in your business activity - lived in, and out-servants were employees who did not live in because, largely, they were married. 1.3 million people were labouring people and out-servants, and a further 1.3 million people were cottagers and paupers, the poorer section of society. The labouring people and out-servants earned an annual average of four pounds ten shillings per annum. According to Gregory King, they needed charity to bring them the extra two shillings per head that they needed per annum to keep body and soul together. The cottagers and paupers, the poorest 1.3 million in society, earned only two pounds per annum, and they needed an average of five shillings per head to keep them alive, be it through philanthropy or charitable redirection of income.

Gregory King was a pioneer in various ways and this was the first time that anyone had ever attempted to measure the scale of philanthropy in England - philanthropy in the sense of private charitable giving, livery companies and private benefactions of that sort, plus the redistribution of income through the Poor Law. He estimated that total philanthropy in the 1690s ran at something over £622,000 per annum. He also estimated that no less than £2.4 million was potentially available every year for saving or for potential investment. I do not think, given the effective absence or the very small number of banks, the absence of building societies or other financial intermediaries, we can yet argue in a Keynesian way that saving and investment are the same thing, so I say potential saving. Much of it of course was in the form that an economist would call 'hoarding', which is saving in common speech, but of course it is taking money out of the economic system and so the term 'hoarding' is best to be used for it. So 2.4 million was potentially available for investment, and this is about 5% of national income. There are many underdeveloped countries in the world today who wish that they could afford 5% of their national income to be available for investment. England, at the end of the 17th Century, was a rich society. It was also a poor society.

Now, we know from the building accounts of St Paul's exactly how much the men who built St Paul's were paid. These accounts have long been published, in loving detail, in volumes 13, 14 and 15, of the splendid twenty volumes published by the Wren Society in the 1930s.

In the first month that they cover, October 1675, the craftsmen beginning work on the new Cathedral were paid two shillings and sixpence, per diem - half a crown per day - which is quite good pay. The labourers were paid 14 pence per day. The craftsmen then, in the first month of the rebuilding, were one joiner, seven carpenters and two sawyers. During the first month, no less than 116 labourers were employed for varying numbers of days. The labourers were employed in a wide range of tasks:

'They were employed in the making of mortar, in screening and sifting fine rubbish, in wheeling rubbish to several places, in wheeling, dragging and carrying stones from the west end of the church to various places where the masons work, carrying water to the mortar heaps, and so on.'

Although 116 were employed in the course of the month, I do not think, on any one day, there were as many as 116. But their task was clearing up the rubbish and taking down the old Cathedral, as they were beginning to. They were paid 14 pence a day, one shilling and tuppence. There were also twenty watchmen, paid one shilling per night. This was because there must have been stuff worth nicking on this building site. A strange item in the monthly accounts says 'meat for the dogs', which came to about 11 or

12 shillings worth of meat per month. I can only assume that they were dogs kept by the night watchmen. In that first month of building, Sir Christopher Wren himself was paid £16, 13 shillings and 4 pence.

The building accounts are better at recording financial details than at recording quantities. In October 1676, for example, five pounds nine shillings and tuppence was spent on nails, but we are not told how many nails. Rope was bought, in the same month, for twenty pounds five shillings and seven pence, but how much rope? Timber that month cost 35 pounds and 5 shillings, but we do not know how much timber. In May 1679, to take a further example, 313 pounds 17 shillings and 11 pence farthing was spent on Portland stone, but we are not told how much Portland stone this large sum bought. Nor are we told if the 229 pounds 2 shillings and a penny spent on the freight of Portland stone from Weymouth to London in that month constituted the transport costs of the stone that had cost 313 pounds-odd in the same month. How are we to know? Such are the frustrations of economic history.

While St Paul's was being built, London became the biggest city in Europe. When London's population exceeded half a million for the first time, in the 1680s, London became larger than Paris, which had long been the biggest city in Europe, followed by Naples. Of course, this is very different from Asia. I was very shocked to discover recently that the population of Tokyo in the 16th Century was over a million, and of course in China, there were many cities with over a million, which is mind-boggling in terms of the supply of food and so on to these urban populations. But in Europe, half a million made you the biggest city in Europe. Did Christopher Wren know, I wonder, that he was building the biggest building in what became, while he was building it, the biggest city in Europe?

Another demographic measure provides an indication of the importance of London for the English economy. I have already said that the latest estimates give us about five million for the population of England at the end of the 17th-Century. Therefore London's half million make it by far the biggest city - Bristol, Norwich and York were the next biggest with only 25-30,000. London, at the period when it began to call itself 'Town', was the only thing that really be realistically regarded as a proper town in the modern sense. But it also, uniquely, contained 10% of the national population. This was quite unique in Europe. Even Amsterdam only contained 7 or 8% of the Dutch population. Paris' half a million people were only 2.5% of the twenty million people who lived in France.

Professor Sir Tony Wrigley has calculated that an even greater percentage of the population than the 10% of people who lived in London had had some experience of having worked in London before they had gone back to the country. So, an increasing number of people had experience of this island of urban modernity in a predominantly rural and agricultural society. Moreover, London's population was to continue to grow more rapidly than the national population as a whole. As many as 12% of the English population at the end of the 18th Century lived in London, and the population grew, despite very high death rates in London. The death rates were much higher than in the countryside, which is not very surprising as there were no sewers in London built until the 1860s - before then, the disposal of sewage was not clearly distinguished from the supply of fresh water. But birth rates were higher in London too than they were in the country as a whole, because in London people could afford to get married earlier, where wage rates were something like a third higher than in the rest of the country.

In Western Europe, marriage had long had a strong economic dimension. It was because marriage involved setting up a new household, that people had to save up in order to get married. This marked Western Europe out from the Mediterranean, Eastern Europe and from the whole of the civilisations of Asia, where you could get married and bring, depending on the rules in any given society, your spouse to live in your father's household. In Western Europe, in the Middle Ages, just at the point where we cannot quite measure it statistically, the nuclear family triumphed. People lived in families consisting of the two spouses and their own children, not extended by living-in grandparents, unmarried aunts and so on.

A fall in the average age of marriage by just one year could easily generate an extra child per couple in the

days when the absence of any physical or chemical means of contraception. Also, the acceptance of Christian teaching on sexual behaviour meant that nuptiality - as demographers refer to marriage - controlled population growth. There was only one or two percent illegitimacy rates.

The half-century that they spent rebuilding St Paul's took place at a very interesting and distinctive period in the economic history of England. I don't believe Christopher Wren or any of his contemporaries knew this, but we now know, following the computers of Wrigley and Schofield, that the population was actually falling between the 1660s and the 1680s, possibly in the 1690s, and certainly in the 1720s. This was an unusual period of nearly a century when the population was hovering around five million, after that rapid period of population growth in the late-16th and early-17th Century, and before the rapid period of population growth from the late-18th Century onwards, associated with the Industrial Revolution. The last decade in which the English population fell was the smallpox-ridden 1720s.

Up until 1665 the Plague killed an awful lot of people in London, but then it rather suddenly appears to disappear from London. As to why this happened, it is still a matter of controversy, though it looks as if it is some change in the immunity of the rat population that is exogenous to human control. In that period they thought that diseases such as the Plague were spread by smell; not that the smell revealed that there were diseases, but the smell itself caused diseases. So there was nothing they could do about the Plague, but when it disappeared, it was a major cause of death up to the 1660s that disappeared.

It is also the first period of what might be called mass emigration. This is a period of very substantial out-migration, to New England and other New Englands.

It is also a half-century, unusually, characterised by falling prices. The genuine Agricultural Revolution of the 17th Century, particularly associated with clover and with turnips, increased productivity very considerably at a time when the population was falling, and so, for perhaps the first time ever in economic history, prices were falling for real, genuine, productivity-increasing reasons. Wheat, for example, was nearly a third cheaper when St Paul's was finished in the 1720s than it had been when St Paul's was burnt down in the 1660s. Money wages showed no tendency to fall, which meant that real wages were fairly significantly rising, and were rising most significantly for the poorest people, who of course spend a higher proportion of their income on basic foodstuffs represented by wheat. This was a period in which the demand structure began to change as a result of this increase in real wages. This change in real wage was beginning to call forth the spending power that enables people to have a wardrobe instead of just the clothes they stood up in, and buying extra pots and pans, and windows, and mirrors, and curtains, and so on. This was beginning to transform the demand side that was to call forth the Industrial Revolution.

It is the period that was called the 'Age of Projects' by Defoe. Some of them were a great success. St Paul's was such a project. The Bank of England was as well: it was founded in 1694, at which time they began to fund parts of the National Debt, that is to say, they allocated the yield from specific bits of taxation to paying the interest on money that they were to buy. This is the beginnings of the National Debt, with a capital N and a capital D. The Stuarts, of course, had borrowed money and those lenders they never got their money back, but after 1694 you were in a different political world, and in a different world of financial security. So, from 1694, the British Government always paid its debts.

This marks the beginning of what Professor Dixon calls the 'Financial Revolution'. By the mid-1690s, you have a coffee house in the City called the Stock Exchange. The 1690s see the creation of the City in the modern sense. It all comes to a slightly unfortunate end of course with the South Sea Bubble, and the Act of Parliament after the South Sea Bubble in 1720, preventing you from setting up company organisation and selling shares to the public. This was because the South Sea Company had been selling shares in some Shangri La that they had no idea what it was.



In the building accounts of St Paul's of 1724, it shows that they spent just over £1,000 on what was called brokerage, on £18,000 worth of South Sea annuities. Now, in 1724, South Sea annuities must have been worth nothing. What scam was going on to get St Paul's to pay £1,000 for brokerage, I do not know. The index to the twenty volumes of the Wren Society is extremely comprehensive, but it does not include this reference to South Sea annuities, and I am afraid that I have not had time to read all the accounts to discover when they bought South Sea annuities. But it does suggest something interesting.

Keynes once said that Shakespeare appeared just at the time when England could afford him. I have never quite understood this remark because I have never understood in what sense Shakespeare needed affording. But what Keynes might have been better saying was that St Paul's was rebuilt just at the time when England could afford Christopher Wren. Money was flowing. Gregory King shows this, the Age of Projects shows this, the various things that people were falling over themselves to invest in showed this.

I meant to find out what the church's teaching on insurance is, but I suppose they have nothing against it. Of course, they did not use a lottery to raise funds, which was quite common back in this period. Lotteries became quite big business in the 1690s, and you might have thought that the church stood aloof, but the church cannot have been against it, because I notice that in 1753, when Parliament had bought Sir John Soanes' library and his collections to constitute the nucleus of the British Museum, there was a lottery to raise £300,000, to buy Montagu House in Bloomsbury for it. They sold tickets of £3 each, and I notice that the trustees of the lottery were the Lord Chancellor, the Speaker, and the Archbishop of Canterbury, each of whom received £100 for his trouble. I do not know what trouble the Archbishop of Canterbury went to, but he quite clearly was happy to receive his £100.

In 1723, the year when Christopher Wren died, by extraordinary coincidence, if I may use 'coincidence' for the second time, Adam Smith was born. Adam Smith did not produce a monument in stone; he produced a monument in words and ideas. His 'Wealth of Nations' was published in 1776 and marks a completely new age. Adam Smith was of course totally against Customs duties, and he was especially scornful about the coal tax. To quote a paragraph from him:

"In a country where the winters are so cold as Great Britain, fuel is during that season, in the strictest sense of the word, a necessary of life, not only for the purpose of dressing vituals, but for the comfortable subsistence of many sorts of workmen who work within doors, and coals are the cheapest of all fuel. The price of fuel has so important an influence upon that of labour that all over Great Britain, manufacturers have confined themselves principally to the cold counties. Other parts of the country, on account of the high price of this necessary article, are not being able to work so cheap. In some manufactures, besides, coal is a necessary instrument of trade, as in those of glass, iron, and all other metals. If a bounty could in any sense be reasonable, it might perhaps be on the transportation of coals from those parts of the country from which they about to those in which they are wanted, but the legislature, instead of a bounty, has imposed a tax of three shillings and thrippence a ton upon coal carried coast-wide, which, upon most sorts of coal, is more than 60% of the original price at the coal pit. Coals carried either by land or by inland navigation pay no duty. Where they are naturally cheap, they are consumed duty-free; where they are naturally dear, they are loaded with a heavy duty."

By the time Adam Smith was writing in 1776, we are in a different world. Arkwright has built the first cotton spinning mills at Cromford in 1771, and we begin to have a different architectural image for a new age, although of course none of the factories built in the Industrial Revolution were anything like as big or anything like as expensive as St Paul's.

It was calculated, in the 1930s, that the cubic capacity of St Paul's Cathedral was twelve million cubic feet. I have not verified it definitely, but I assume that it is safe to say that St Paul's remained the biggest building in London through the 18th Century.

Cubic capacity is of course helpful, but it does not measure, as it were, the visual impact on the environment on the building, so I need some further measure. The Houses of Parliament must have been the biggest building built in the 19th Century. The Senate House of the University of London, built in the 1930s, must have been the biggest building built in the first half of the 20th Century. In the second half of the 20th Century, of course, as skyscrapers spread to the City, we have many bigger buildings. How many cubic feet are there in Canada Wharf? But, regardless to these figures of size, I think all these big buildings do not give us such good value as the one shilling and thrippence per cubic foot that St Paul's cost.

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