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ECONOMICS 303Y1

The Economic History of Modern Europe to1914

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Lecture Topic No. 7:

II. GREAT BRITAIN AS THE HOMELAND OF THE INDUSTRIAL REVOLUTION, 1750-1815

H. Banking and Finance: Problems of Capital Formation during the Industrial Revolution Era

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1. Introduction:

a) **The evolution of financial and banking institutions in Great Britain up to and including the Industrial Revolution era:** our goals, in this two-part lecture (over two weeks), are:

i) **to understand how and why** financial institutions and related financial innovations came to be so important in modern European industrialization.

ii) **to analyse their vital, necessary roles both**

(1) **in transacting commerce,** for all sectors of the economy, and in

(2) **in financing economic growth**:

- indeed no market economy could have ever functioned properly without such financial institutions and financial intermediaries.

iii) **and thus to see how these financial institutions provided the economy in general and the Industrial Revolution with both the lubricant and fuel of the industrial machine** :

(1) a necessary lubricant for the economy, in effecting transactions: with credit instruments, especially with the later bank notes

(2) a necessary fuel for the commercial-industrial machine, in the form of capital: primarily in financing working capital needs of enterprises in all sectors of the economy.

iv) **The creation of an English financial revolution, in that same century 1660 - 1760,** will become readily apparent as we analyse the formation and development of financial and banking institutions in England, especially after the Restoration of the Monarchy in 1660.

b) **Judicial Institutions and the Importance of Laws, Contract Enforcement, and Transaction Costs:**

i) **When we economic historians normally deal with this topic,** or indeed when we analyse the origins of the Industrial Revolution, seeking to find out why Britain was the homeland of that Revolution, we far too often neglect the most important consideration of all:

(1) the established of the rules of law, both by parliamentary statute and by judicial precedents (rulings of the courts); and also

(2) the administration of laws by due process with a basically independent and objective judiciary.

ii) **Transaction Costs:** For an economist, all these matters are subsumed under the concept of 'transaction costs', which in very general terms concerns

(1) all of those costs necessary in transferring or delivering goods from producers to the ultimate consumers in a market economy .

(2) and thus especially marketing costs.

iii) **In 1993, the famed economic historian Douglass North won the Nobel Prize in Economics for his**

work on the historical application of transaction costs, and the role of various institutions concerned with transaction costs in the economy.[1]

iv) **More particularly, and especially for the work of Douglass North, the term 'transaction costs' really concerns the costs involved in making that market function properly:**

(1) more specifically the costs involved in acquiring and validating market information,

(2) in gaining and enforcing contract rights, private property rights;

(3) in short, in enforcing commercial claims and protecting the property attached to them.

v) **We might also call these transaction costs 'protection costs':** in protecting and enforcing the rights of private property, including all commercial claims and debts.

vi) **Great Britain's very major judicial advantages in the later 17th and 18th centuries:** [2]

(1) From the Glorious Revolution of 1688, as noted before, Great Britain had a parliamentary system of government with a judiciary that was generally independent;

(2) and also a judiciary that was capable of adjudicating civil cases concerning contracts and property rights,

(3) and as noted generally free from government interference, ruling by law.

(4) especially, through Common Law Courts and Chancery Courts (themselves influenced by the older Law Merchant courts), in enforcing the payment of commercial claims and in requiring debtors to honour claims against them: to pay up their debts, on penalty of prison or confiscation of goods.[3]

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[1] For information on Douglass North, go to this REPEC website [Research Papers in Economics]: http://ideas.repec.org/e/pno11.html
See also: Douglass North, *Transaction Costs, Institutions, and Economic Performance* (San Francisco: ICS Press, 1992); Douglass North, *Structure and Change in Economic History* (New York: Norton, 1981); Stanley Engerman, John R.T. Hughes, Donald N. McCloskey, Richard Sutch, Samuel Williamson, eds., *Two Pioneers of Cliometrics: Robert W. Fogel and Douglass C. North, Nobel Laureates of 1993* (Oxford, Ohio: The Cliometric Society, 1994).

[2] Indeed on this very issue see the following article: Douglass C. North and Barry R. Weingast, 'Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England', *Journal of Economic History*, 49 (December 1989), 803 - 32. But see also some critical replies to North and Weingast, in: Nathan Sussman and Yishay Yafeh, 'Institutional Reforms, Financial Development and Sovereign Debt: Britain, 1690 - 1790', *Journal of Economic History*, 66:4 (Dec. 2006), 882-905; David Stasavage, 'Partisan Politics and Public Debt: The Importance of the "Whig Supremacy" for Britain's Financial Revolution', *European Review of Economic History*, 11:1 (April 2007), 123-53.

[3] See John Munro, 'The "New Institutional Economics" and the Changing Fortunes of Fairs in Medieval and Early Modern Europe: the Textile Trades, Warfare, and Transaction Costs', *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, 88:1 (2001), 1 - 47; and John Munro, 'The International Law Merchant and the Evolution of Negotiable Credit in Late-Medieval England and the Low Countries,' in John Munro, *Textiles, Towns, and Trade: Essays in the Economic History of Late-Medieval England and the Low Countries* (Aldershot, 1994), X, pp. 49-80.

vii) **Of all other European countries,** or of those likely candidates for modern industrialization:

(1) none but Holland (the Netherlands) and Great Britain enjoyed a better set of independent, impartial, and fair legal and judicial institutions to enforce and protect these property rights,

(2) though I must admit, however, that this viewpoint has certainly been contested by those engaged in studying French economic history.

viii) **Just the same: How can we exaggerate the importance of these rights: without some assurance that his/her property rights would be respected and enforced,** that debts would be honoured in full and on time?

(1) Who would willingly invest capital in an commercial or industrial enterprise without security of proper assurances of receiving financial payments?

(2) Who would extend credit to other merchants and industrialists again without assurances of repayments?

ix) **We take these modern Western advantages too much for granted in studying economic history:**

(1) it has nothing to do with any western superiority or other such racist concepts, because the western world struggled long and hard to obtain these rights,

(2) and the major victories were first obtained in the Netherlands and Great Britain.

x) **Consider the plight of many modern investors seeking to do business in, say:**

(1) In former Communist regimes, or in those that are still notionally Communist: in former states of the old Soviet Union (especially in Russia), or in China or Cuba, to name the most important ones

(2) or in many other parts of the world, to this very day

- where the rules of law and due process do not apply as in the Western world, and
- where private property rights and mutually negotiated contracts may not be so respected, and very difficult to enforce, especially if the state or state-run organizations find it to their advantage not to honour those contracts (as has happened many times in these countries)

2. **<u>English Business Organization during the 18th Century</u>**: **Raising Capital**

a) **The private partnership or the family firm -- as informal partnership of family members:**

i) **was by far the most common form of business organization,** not only in England, but throughout western Europe; it was thus a very ancient form of business organization.

ii) **In England, under common law, the partnership was restricted in size to just six partners:**

(1) that restriction thus imposed a limit on initial capital investments, as the combined investments (excluding loans) of those six partners.

(2) But note that this restriction on the number of partners did not apply to Scotland,

(3) Scotland had its own commercial law, which it retained after the Act of Union of 1707, when Scotland finally joined England and Wales to form Great Britain [the United Kingdom includes Northern Ireland: formerly, before, 1923, all of Ireland].

iii) **In England, the partnership law could be circumvented, however, by interlocking partnerships,** by which one or more of the six partners could form what appeared to be several separate partnerships with other businessmen.

iv) **Profits and losses were shared proportionally to the amount or value of capital that each partner invested in the firm:**

(1) i.e., the partners shared gains and losses in accordance with their capital investments;

(2) but with the following exception.

iv) **Unlimited liability**: indeed, the hallmark of all partnerships from Roman times (encoded in Roman Law, known as the Justinian Code, in the 6th century CE).

(1) That meant that all the partners together and all partners individually were completely liable for all the debts and obligations of the partnership;

(2) Thus, if five of the six were to die or to flee, leaving only one partner, that survivor would be completely liable for all the firm's obligations.

v) **If a partner died or if he decided to leave the firm,**

(1) the partnership was legally dissolved and

(2) a new partnership was drawn up (usually with an additional partner) to replace it.

vi) **Limited Liability Partnerships:** a much more modern concept, found today chiefly in law firms (with the initials: LLP)

b) **The Joint-Stock Company**: and the genesis of the modern corporation (dating from the mid-16th century).[4]

i) **The joint-stock company was a new type of business organization that developed in England** from the mid-sixteenth century, and later, in the Netherlands (VOC or Dutch East India Company in 1602): to amass far larger capital investments than was possible with a traditional partnership.

ii) **The joint-stock company developed almost entirely in foreign trade,** as a result of a major and very

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[4] See John Munro, 'Tawney's Century (1540 - 1640): the Roots of Modern Capitalist Entrepreneurship', in David Landes, Joel Mokyr, and William J Baumol, eds., *The Invention of Enterprise: Entrepreneurship from Ancient Mesopotamia to Modern Times*, Kauffman Foundation Series on Innovation and Entrepreneurship (Princeton: Princeton University Press, 2010), pp. 107-55. Available on line at: http://www.economics.utoronto.ca/munro5/TawneysCenturyPUP2010.pdf

socially-threatened crisis on the Antwerp market in the early 1550s:[5]

(1) As indicated earlier, by the early 16th century, at least 90% of English exports by value were in the form of woollen textiles

(2) By the 1520s, about 90% of these exports were being sent, chiefly from London, to the cross-Channel Antwerp market,

- under the aegis or agency of the Merchants Adventurers Company,
- a regulated or crown-chartered company, with monopoly rights on cloth exports

(3) The crisis was monetary in origins: effects of a drastic coinage debasement

- The Great Debasement of Henry VIII (and his successors), from 1542 to 1552: in depreciating the currency – reducing its silver contents – by over 83%, lowered the foreign exchange costs, or the effective sales prices on the Antwerp market,
- thus leading to an overextended export boom, and a glut on the Antwerp market
- The sudden and indeed brutal revaluation of the English coinage in 1552 had the opposite effect of drastically increasing the cost of buying English currency and thus English cloths on the Antwerp market
- by the mid 1560s, cloth exports in aggregate had fallen by over 31%
- widespread unemployment and social unrest developed in the cloth-making districts of southern England, causing some panic in the government
- In 1564, the Spanish, ruling the Low Countries imposed a ban on English trade
- Then, in 1568, the Low Countries rose in revolt against Spanish rule (not just because of this trade ban), making the Antwerp market inhospitable for the English

iii) **As a direct consequence of this far-reaching crisis on the Antwerp market,** the government and merchants together were determined to establish new overseas trading companies:

- with the primary objective of finding alternative outlets for English textiles
- but also alternative sources of imports, most of which had previously come from the Antwerp market

iv) **The new overseas trading companies that were formed,** all but one as joint stock companies, were the following:

(1) The Muscovy Company of 1553:

- historically, the first known joint-stock company: not just in England, but in Europe
- arising directly from this commercial crisis on the Antwerp market
- organized in order to conduct very long term, long-distance trading operations with Russia, initially

[5] For a better understanding of this crisis, see my lectures notes in ECO 301Y: nos. 22 and 26.

via the Arctic, the White Sea, and Archangel (and later via Narva, in the Baltic)

- and also with Persia and southern Asia: via the Russian rivers (Volga) and the Caspian Sea

(2) The Eastland Company of 1579: to trade in the Baltic,

- chiefly to sell woollens and to buy grain and lumber
- but it was not a joint-stock company, but another regulated company, and an offshoot of the Merchants Adventurers
- it failed chiefly because of Dutch competition in the Baltic and Russian trades

(3) The Levant Company: originally set up, in 1581, as the Turkey Company, and re-organized and renamed the Levant Company, in 1591:

- It marked England's first successful entry into the Mediterranean
- designed to trade with the Ottoman Empire – and the word 'Levant' means the eastern Mediterranean (modern day southern coastal Turkey, Syria, Lebanon, Israel, and Egypt)
- chiefly to sell woollen textiles, and to acquire spices and silks in return

(4) The East India Company: formed in 1600,

- to trade with India and the rest of Asia;
- founded by major merchants in the Levant Company

(5) The Royal African Company: of 1662, reorganized with a new charter in 1672

(6) The Hudson's Bay Company of 1670 – to trade with North America

(7) The Bank of England: formed in 1694 (separate topic)

(8) The South Sea Company, formed in 1711 (ostensibly to trade in the Pacific Ocean – but actually to take over much of the national debt: separate topic)

v) **Structural nature and differences from the earlier trading companies:**

(1) A comparison with the Merchants Adventurers Company (established in 1407), but given a royal charter with certain monopoly rights on the cloth-export trade in 1505.

- It was a 'Regulated Company' in the sense that it possessed such a charter and monopoly rights, whose enforcement required a governing council with an appointed Governor and his assistants and a Court in its overseas headquarters at Antwerp.
- But the actual commerce, the cloth-export trade, was conducted by a large number of private firms – family firms and simple partnerships – who operated on their own account under the protective umbrella of the Merchants Adventurers.
- They raised their capital by pooling funds of family members and/or those of the partners, generally limited to six members; other capital was raised by borrowing often by mortgaging properties.

- Because of the nature of their trade – the very short distance cross-Channel trade between London and Antwerp – their capital requirements, both in terms of fixed and working capital, were small.
- Rarely did such merchants own and operate their own ships; and
- generally they bought their woollens, on credit, at Blackwell Hall, and simply leased space on a small ships making this making this cross-Channel journey.
- With a succession of cloth sales at Antwerp, and with the investment of the proceeds in the purchase of various goods from the Brabant Fairs, for importation into England (on behalf of the Mercers Company of London), these Merchants Adventurer enjoyed very quick turnovers of cargoes and business transactions – a matter of a few weeks at most,
- permitting them either to reinvest profits in this bi-lateral trade or to invest them by purchasing a bill of exchange from some other merchants about to embark on his own Antwerp-based trade.

(2) The new overseas joint-stock trading companies – beginning with the Muscovy Company – were vastly different:

- vastly larger-scale organizations, much longer-term ventures of a year or more, and thus
- they required vastly larger capitals than were needed for the traditional short-term, small-scale trading ventures between London and cross-Channel ports in the Low Countries.
- Such a very large scale, long term enterprise could hardly have been financed by the traditional methods of pooling funds from family members and a few partners.
- Instead the necessary initial capital stock could have been raised only by the sales of shares of ownership, to often hundreds of investors.

c) **Structure of the new Joint-Stock Companies:**

i) **The term joint-stock company:**

(1) refers to a financial innovation that raised such large capitals through the sale of shares of ownership in the company, i.e., the sale of stock certificates.

(2) Joint-stock simply means that ownership of the company was represented by the stocks jointly held by all the investors purchasing the shares.

(3) The capital was permanently invested for the life-time of the company.

ii) **Company:** was the usual term applied to a joint-stock firm:

(1) the term 'company' was borrowed from earlier medieval merchant guilds: e.g., The Company of Merchants Adventurers, a crown chartered guild of cloth-exporting merchants, trading between London and Antwerp in the 15th and 16th centuries.

(2) Etymology: from the Latin *cum panis*: meaning, 'with bread:'

- what was involved in the making [and selling] of bread, as the ‘staff of life.’
- or in the sense of a group of friend ‘breaking bread’ with each other.
- today (or in the recent past), ‘bread’ was a slang term for money

iii) **Direction and organization of the joint-stock company**:

(1) by a group of managing directors who were elected by the shareholders

(2) who were usually also large shareholders themselves.

(3) They determined the aims, purposes, and organization of the ventures

(4) they also determined the annual distribution of profits (if any)

iv) **Profit Disbursements**: in the form of dividends declared with a specific rate per share.

v) **Negotiable Stock**: transferable by trade or sale

(1) Investors in a joint-stock company always had the right to sell their shares or trade them to some third party,

(2) and thus also to bequeath their shares to their heirs.

(3) These shares were thus negotiable and transferable, by endorsement;

(4) and that permitted investors to reap further profits, in the form of capital-gains, by selling their shares for prices above their original purchase price.

(5) **Value as collateral**: furthermore, because they were negotiable – valuable assets that could be sold (liquidated) – they also served as valuable collateral in seeking loans.

vi) **Capital Gains:** as so indicated, stockholders could reap capital gains by selling their shares at higher price.

vii) **Permanence of the Company**:

(1) These companies existed permanently apart from the investors;

(2) and thus, unlike a partnership, joint-stock companies did not have to make any formal changes when individual stockholders sold their shares and thus withdrew from the company.

d) **Financial Limitations on Joint-Stock Companies:** two major ones

i) **The legal limitations of joint-stock companies as deemed partnerships**

(1) Legally most joint-stock companies were a partnership in the eyes of the law, so that:

- all investors, all share-holders, were treated as partners, who were collectively and individually responsible for all the losses, debts, and legal obligations of the joint-stock company,
- even if those individual shareholders had no influence or say in the operations of the company.

(2) The legal obligation discouraged most investors from buying shares in a joint-stock company, unless they knew and had complete confidence in the managing directors.

(3) Most continental countries subsequently made a significance advance over England's joint stock companies (at least, up to the 1850s):

- in restricting such unlimited liability just to those shareholders who were managing directors,
- and thus limiting the liability of the so-called 'silent' shareholders: to their original capital investment in buying the shares.

(4) France (from about 1670): legislation established these principles for companies known as a *société en commandite*.

(5) **Incorporation**: In England, one escape from this legal-financial predicament was incorporation:

- just as medieval English guilds had become incorporated as separate 'bodies' (*corpus)*
- or separate legal organizations that could sue and be sued in their own names, apart from the individual owners.

(6) But charters of incorporation required private acts of Parliament,

- which were very difficult and expensive to obtain
- the government normally required the directors to put up all the capital first before considering incorporation.

(7) **Opposition to limited liability corporations was one basically based on 'moral hazard'**:

- Suppose that not just silent, passive investors, but investors actively engaged in the company are protected against total losses and financial disasters (by limited liability)
- Would they not much more likely to engage in risky, hazardous adventures, promising large profits, but not with compensatory threats of large losses?
- Hence, the moral hazard: that the protection of limited liability might encourage a contrary and adverse sequence of events.
- Second and furthermore, with limited liability for stock investors, the risk would thus be almost fully transferred from equity holders to bond holders,
- and also transferred to anyone else who made loans to the company, who would thus lose their recourse to the assets of the owners, i.e., the equity holders (stock holders)
- We will come back to deal with this problem when Parliament finally does agree to permit firms to achieve the status of limited liability corporations at low costs, in the mid 1850s.

(8) **The overseas joint-stock trading companies:** were all, it must be noted, incorporated joint stock companies, with the necessary charters

- i.e., the Muscovy Company, the Levant Company, the Royal African Company, the Hudson's Bay Company and (later) the South Sea Company

- each of these chartered companies held a royal monopoly in their sphere of trade
- that required either royal charters or Acts of Parliaments for which the legal status of incorporation was necessarily added
- legal incorporation provided their stockholders, therefore, with limited liability: liability limited to the value of the stock that they had committed themselves to buy

(9) Therefore, the absence of incorporation pertained chiefly to those much smaller new joint stock companies that were created in mining and manufacturing, confined to the domestic economy.

ii) **Institutional impediments**: the lack of an organized secondary market in which the shareholders could sell their stock, until the end of the 17th century, when a stock market first developed.

d) **The London Stock Exchange**

i) **During the 1690s (by 1695),** however, an unofficial but still organized stock market developed in the City of London, when there was already 137 joint-stock companies.

(1) as it said, amongst merchants frequenting the coffee houses of the old city of London;

(2) and that was known as the Exchange, or the London Stock Exchange.

ii) **Functions of the London Stock Exchange**:

(1) only as a secondary market in which current shareholders could dispose of unwanted shares,

i.e., by selling them through brokers,

(2) or by using the same brokers to buy additional shares from other stockholders.

iii) **Please note that the London Stock Exchange did not perform the function of selling initial stock issues:**

(1) i.e., to raise the initial capitals, or what are now called Initial Public Offerings (IPO),.

(2) Sales of original stock issues had to be handled by the directors themselves, by their agent brokers, or various other institutions (about which we still know very little).

(3) Nevertheless, the Exchange was still vitally important to encourage investors to buy those initial shares by providing facilities for their subsequent sale and exchange to third parties.

iv) **The existence of such a stock market thus encouraged many new companies to organize on a joint-stock basis to raise capital;**

(1) and thus this form of business organization expanded beyond its original base in foreign trade

(2) to include especially new industrial businesses or others engaged in the domestic economy.

v) **The first two decades of the 18th century witnessed a major stock-market boom, somewhat akin to that of the 1920s in America;**

vi) **the consequences were somewhat similar:** a stock market crash in 1720, known as the South Sea

Bubble, that led the government to impose very severe restrictions on joint-stock companies, in the so-called Bubble Act of 1720.

vii) **But we must wait until we have examined the English banking institutions,** especially the Bank of England, and the national debt, before we can come to the Bubble Act.

3. The Medieval and Early-Modern European Roots of Modern Banking

a) **Introduction: Importance of Banking Institutions for Modern Industrialization**

i) **A well organized system of banking and financial institutions is absolutely necessary for modernization industrialization**: for the two reasons already noted, here rephrased for banking:

(1) **to provide the financial lubricants for the economy**:

- in the form of monetary mechanisms for commercial exchanges,
- and particularly in the form of both credit instruments and then paper banknotes.

(2) **to provide some fuel for the industrial and commercial economy:** in the form of capital

- in supplying capital, in financing capital formation,
- but, in this era, most especially in supplying the working capital needs for commerce and industry:
- i.e., those funds necessary for purchasing raw materials or trading inventories, paying wages and other day-to-day expenses in running a business.

ii) **Fixed Capital Formation:**

(1) Not until about the mid-19th century did European, and then really only the continental, banks engage in financing fixed capital formation (plant and machinery): long-terms loans or investment underwriting; and even then, more true of continental banks than British.

(2) Although some British banks did, in effect, engage in some financing of fixed capital formation, that was more by accident than by design, for reasons to be seen later.

iii) **Financing Working Capital:**

(1) was therefore the primary obligation of English banking institutions throughout the later 17th, 18th, and early 19th centuries,

(2) through short term lending and short-term extensions of credit.

b) **European banking in the Middle Ages: from the 12th and 13th centuries, to the 16th century had two, twin roots, which were very rarely ever undertaken by the same firms:** and we shall consider the following two forms of banking as separate topics

i) **Deposit and transfer banking:** which is by far the oldest, dating back to Greece in the 4th century BCE [Before the Common Era]: for the domestic economy

ii) **Foreign Exchange or Bills of Exchange** : for the foreign economy, international trade

c) **Bills of Exchange Banking or Foreign Exchange Banking, or Acceptance Banking**

i) **Foreign exchange or 'bills of exchange' banking:** developed much later than deposit banking (to be considered separately, after this topic)

(1) Bills of Exchange Banking was the first form and genuinely European form of international banking:

- had uniquely European origins: with the Italians of the later 13th century
- Italian bills of exchange had no antecedents in the ancient world,
- and owed nothing to the Arabs or the Chinese, or anybody else

(2) Bills of exchange were created by and for merchants, Italian merchants, engaged in long-distance trade, for the dual functions:

- of financing long-distance trade
- and making foreign payments: i.e, transmitting or remitting funds abroad

(3) Both functions were achieved without the physical transport of precious metals abroad: very important when international trade subject to widespread warfare, piracy, insecurity: ie., losses

(4) As a separate appendix to this lecture, online as a pdf file, please read the document on the bill of exchange contract, and its evolution into modern acceptance bills [acceptance banking].[6]

(5) most international trading ventures were 'discrete' and non-continuous functions

- that meant that on the completion of a trading ventures, profits would be placed in a bank for subsequent investments
- so most international merchants would, on the one hand, then invest in the trade of other merchants, while also subsequently requiring investments from other merchants
- such investments were handled by bills of exchange
- and who also did not handle deposit and transfer banking (or rarely did so)

(6) Note that by the 17th century, the common name for this instrument had changed from 'bill of exchange' to become 'acceptance bills', the term used to this very day.

(7) If you read this document carefully, you will understand the crucial role of the financial agent, known as the 'acceptor': the one who binds himself to make payment, redeem the bill, on the maturity date.

(8) The Bill of Exchange, or Acceptance Bill, is a classic case demonstrating the vital importance of principal-agent relationships in international economics

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[6] Also available via my Home Page, via the web site entitled *Aids in Studying European Economic History*: http://www.economics.utoronto.ca/munro5/BILLEXCH.pdf. This document on the Bill of Exchange was also contained in my online lecture on Dutch banking.

ii) **The Bill of Exchange involves two principals in one city and their two financial agents in some foreign city, using therefore a different currency:**

(1) Principal A (*datore*) in the home city either lends a sum of money or sells goods on credit to:

(2) Principal B (*prenditore*) in that city: who borrows the funds or buys the goods on credit,

- by 'selling a bill of exchange' to Principal B, in which he stipulates that payment (or repayment) shall be made in a specified foreign city,
- in that city's currency, at a specified exchange rate
- In so doing, Principal B 'draws this bill for payment' on his Agent B in that foreign city
- thereby instructing his banking agent in a foreign city to make payment on his behalf:

(3) Agent A in the same city receives a copy of this bill from his Principal A

- Agent A then presents the bill for 'acceptance' to Agent B, who, in agreeing to accept the bill
- thereby promises to redeem it for full value on the specified date of maturity
- He is the crucial person in this relationship: known as the 'acceptor'

(4) When Agent A collects (redeems) the bill for full payment,

- from the Acceptor (Agent B) on that specified maturity date ('at usance': usually three months later), he uses the proceeds to lend funds to another merchant and
- thus to invest a new bill of exchange drawn on bank in the home city, of Principal A.

(5) The profit in the bill lies in the difference in the exchange rates, in effect raised in favour of the lender: which included the interest rate, to circumvent usury laws against interest payments.

(6) 'acceptance bills', as noted, came to be the most common terms for these bills, by the later 17th century, to repeat:

- because of the crucial role played by the financial agent who agrees to 'accept' the bill for payment or redemption
- in so doing, and binding himself to make that payment, he is in effect extending credit to his principal
- normally, Agent B also handles the commercial transaction involved – e.g., the sale of the merchandise sent by Principal B to that city, for sale – and thus expects to have the funds deposited in the account, from the commercial proceeds, in order to redeem the bill.

d) **Deposit and Transfer Banking in the Ancient and Medieval Worlds**: far older form of banking

i) **arose everywhere out of money-changing:** because of the roles of money-changers:

- Note first that the issue of coins, both gold and silver, was always the prerogative of the local prince or ruler, and a symbol of his sovereignty.
- In the ancient Roman Empire, of course the Emperor had the sole right to issue coins

- furthermore virtually all ancient, medieval and early modern princes or rulers derived sometimes significant profits from coinage, from the seigniorage tax on minting
- for these reasons, few rulers would tolerate the circulation of foreign coins, certainly not silver coins, though exceptions were generally made for internationally dominant gold coins: such as Venetian ducats, Florentine florins, Imperial German florins
- therefore every principality and certainly every commercial city in the ancient and mediaeval worlds need to have money-changers: to exchange foreign coins for domestic, legal-tender coins.
- and also for delivering bullion to the royal mints:

ii) **How money-changers became bankers:**

(1) everywhere, from ancient times, the origins of deposit banking arose from money-changing

- from ancient Greece, in Athens during in the 4th century BCE; and
- in Alexandria – founded by the Greek warrior king, Alexander the Great (356 - 323 BCE), in 331 BCE
- in ancient and post-Christian Rome
- then money-changer deposit bankers were found, when banking and commerce revived in medieval Italy from the 11th and 12th centuries: in Milan (Lombardy), Genoa (Liguria), Florence (Tuscany), Venice (Venetia)
- and then in Flanders and Catalonia (Spain), from the 14th century.

(2) Money-changers became bankers principally because:

- they had to keep and protect an inventory of precious metals,
- so that they therefore offered the most secure place for depositing money and other valuables, for safe-keeping..

(3) From ancient times, as in 4th century-BCE Athens, we find that money-changers soon became bankers by agreeing to accept coins (moneys) and valuables on deposit

(4) They also soon found that they could safely lend out some proportion of those moneys placed on deposit: and so engaged in fractional reserve lending:

(5) For almost never, at one given time, would all depositors come to the bank to withdraw their deposits – not unless there was a financial panic (known therefore as a ‘run on the bank’.)

(8) so, to repeat: this form of banking was almost everywhere undertaken by and only by money-changers (changing foreign coins for domestic coins)

iii) **Commercial deposit banking developed much later in England than on the continent:**

(1) The major reason is that, as just asserted, deposit and transfer banking every where had arisen directly

out of money-changing, everywhere in the Western World, from as far back as ancient Greece

(2) But in medieval England (from at least the 12th century), money-changing was a royal monopoly exercised by a salaried royal official known as the Royal Exchanger.

(3) Furthermore, from the late 13th century, parliamentary legislation and royal ordinances had forbidden any circulation of foreign coins or any private trade in precious metals,

- thus requiring that all such foreign coins and precious metals that were not in the form of legal tender coin or genuine artifacts (plate and goblets, jewellery, etc.)
- be surrendered to the royal mints (Tower Mint in London) for coinage, via the Royal Exchanger.

(4) In medieval England, therefore, deposit-and-transfer banking on the Italian model could and did not develop, not indeed until the mid 17th century, during the English Civil War (1640s)

4. <u>The Structure of English Banking in the Early 18th Century: The London Commercial Deposit (Goldsmith) Banks</u>

a) The Development of Private Banking in London: The 'Goldsmith Banks' from the 1660s: the 1660s as a financial turning point in British economic history

i) The London Goldsmiths and the 17th century origins of English deposit banking:

(1) The so-called goldsmiths were not really artisan goldsmiths, but instead they were dealers in precious metals,

- though developing out of a 14th-century London guild of artisan goldsmiths
- who had indeed begun as artisans working in precious metals – in producing plate, goblets, ornaments and jewellery of gold and silver, and other legitimate artifacts.
- and then they became merchants dealing in precious metals (importing and exporting).

(2) Such dealings in precious metals, however, still remained illegal in 17th century England

(3) As late as 1627, London goldsmiths had been accused of violating this royal prerogative.[7]

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[7] In May 1627, the crown was still condemning (and evidently prosecuting) London goldsmiths for illegally 'acting as exchangers and buying and selling bullion, selecting the best money and melting it down [for export]'. Robert Steele and James Lindsay (Earl of Crawford), eds., *A Bibliography of Royal Proclamations of the Tudor and Stuart Sovereigns, 1485- 1714*, 4 vols. (London, 1910), vol. I, no. 1512, p. 178. The royal proclamation reiterated that 'the exchange of money is a royal prerogative prohibited by Acts and Proclamations', citing statutes back to 9 Ed. III, c. 6, 9, 10 (1335), stipulating again that no one other than the Royal Changer (Henry Earl of Holland) or his deputies were permitted to exchange coins or purchase bullion. The proclamation, while permitting the Goldsmiths 'to enjoy their full franchises,' strictly enjoined them 'not to melt current coin, or to select the weightier pieces .. [or] to intermeddle with foreign money or bullion.' All such provisions were to be enforced in Star Chamber with severe penalties.

ii) **The traditional story about the rise of goldsmith bankers during the Civil War era of the 1640s:**

(1) The story is that they initiated banking functions during the English Civil War period of the 1640s (Crown vs Parliament)

(2) i.e., after the Crown had seized bullion in the Tower Mint belonging to private merchants (i.e., to be converted into coinage

(3) such merchants then supposedly turned to the goldsmiths to place coins and valuables on deposit: for the very same reasons that had applied in 12th century Italy (or ancient Greece)

(4) namely, that the goldsmiths, having always to protect their own inventories of precious metals, thus offered the best security for such deposits.

iii) **But the London Goldsmiths did not become true bankers, until the 1660s:**

(1) Not until after the Civil War and Commonwealth (Republican) eras were the Goldsmiths able to act more freely as money-changers and bullion dealers and thus to become bankers.

(2) My argument is simply this: that with the Restoration of the monarchy in 1660, that restored monarchy did not try to revive the former royal powers of controlling the coinage and money supply

(3) That was now clearly the prerogative of Parliament: which had not reason to restore the former royal or crown office of Royal Exchanger

(4) hence there was no legal hindrance to prevent the Goldsmiths from now acting as money-changers, and thus as bankers

iv) **These goldsmith firms – retaining that general denomination as bankers – were either family firms or more commonly private-partnership firms,** with the standard limitation of six partners.

v) **By the later 17th century, certainly by 1700,** they had developed the four or rather five chief functions of commercial deposit banking, none of which, as noted, was new; and was certainly found in the 17th century Netherlands.

vi) **These goldsmith banks were, however, the first to do the following:**

(1) To combine all five modern functions of banking under one roof, as examined below

(2) They were effectively the first to combine domestic deposit-and-transfer banking with foreign exchange or bills of exchange banking,

(3) the first to engage in a major expansion of the effective money supply through both lending and discounting, using the fractional-reserve system;

(4) and especially, in doing so, to add a final function: the direct creation of new money though issuing bank notes, as a genuine form of paper money.

vii) **In sum: the goldsmith banking firms, by combining domestic deposit banking with foreign**

exchange banking, created indeed their own financial revolution from the 1660s,

(1) thereby decisively dominated English banking until the eve of the Industrial Revolution,

(2) along with their fellow London bank, the Bank of England: a private commercial deposit bank that served also as the government's bank [next major topic].

b) **The Functions of English Commercial Deposit-Banking**

i) **Deposit and Transfer, with Cheques**:

(1) **The early development of deposit banking: in summary**

- The goldsmith firms had first begun banking operations, during turbulent Civil War era of the 1640s, by accepting coins and valuables on deposit for security
- as suggested earlier, who could better guarantee security than bullion dealers?
- those deposits held in safe-keeping were recorded on ledger in deposit accounts,
- which developed into two types:
  - demand deposit chequing and
  - time-deposit savings accounts.

(2) **demand deposit accounts with transfer or chequing privileges**:

- depositors were allowed to make payments to others by bank account assignment or transfer, with written instructions that developed into formal cheques (transferable by endorsement) by the 1670s.
- depositors were also allowed to withdraw their funds on deposit in cash, either in person or by written instructions, i.e., by cheque, on demand.
- Such accounts bore no interest: like the modern current account — though a few years ago, we had chequing savings accounts, which did pay some minimal interest.

(3) **Time deposits**: interest-bearing accounts (3% - 5%), but without any of the privileges for book-account transfers, chequing, or withdrawal of cash on demand.

- Depositors normally had to provide the bank with 30 days' notice before obtaining cash withdrawal.
- Depositors were given formal interest-bearing receipts for their time-deposits, receipts which were transferable by endorsement (at discount): almost functioned like banknotes, but were clumsy to use.

ii) **Bank Loans**: Lending on the Fractional Reserve Principle

(1) These London banks found – as Italian, German, and Dutch banks had found long before them – that:

- they did not need to keep all of their deposits in the form of cash reserves; and
- thus they could safely lend out some portion, by what is known as the fractional-reserve principle in lending.

(2) If a bank maintains, say, just a third of its deposits on reserve in cash, for claims of depositors,

- and lends out the other two thirds, and if other banks in the regional system do likewise -- lend out two-thirds of deposits
- then the banking system collectively will expand the money supply by the reciprocal of the reserve ratio: in this case, by 3 [i.e., the reciprocal of 1/3].

(3) Use of both cheques and banknotes, the bank's own printed money, lessened the need to keep large cash reserves, since depositors could use their funds by resorting to these paper credit instruments.

(4) Interest rates were normally about 5% to 10%, but of course varied and fluctuated considerably.

iii) **Discounting**: of various types of commercial paper, in the form of foreign Bills of Exchange, Inland Bills, Promissory Notes, etc.

(1) **Discounting**: simply meant the sale of a promissory note or other credit instrument, including bills of exchange, before the stipulated date of maturity

(2) **Because interest was either explicitly or implicitly included in the redemption value**, therefore no one would buy any such bill before the stipulated maturity date for the full redemption value

(3) In other words, the seller and buyer would have to agree on a *discounted* value, so that the difference between the discounted value and the redemption value represented the interest owing between the discount date and the redemption date

(4) The full, open and public conduct of financial discounting could take place only after the long-held medieval ban on *usury*, i.e., interest on any loan, had been abandoned. [8]

(5) That first took place, on a national government level, in both the Habsburg Netherlands and England, in the 1540s, when the Protestant Reformation was now making headway.[9]

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[8] In the Habsburg Low Countries, in October 1540, Emperor Charles V, with support from the Estates General, issued a formal ordinance to permit interest up to 12%, but only for commercial loans – even though the Low Countries were still officially Roman Catholic, despite serious inroads from Lutherans and Calvinists. In 1545, in now Protestant England, lending of money at interest first became legal by an act of Parliament under Henry VIII, but only up to the rate of 10%. That act, however, was repealed in the 1552 Parliament of Edward VI, in an act stating that: 'Usurie is by the worde of God utterly prohibited, as a vyce moste odyous and detestable, as in dyvers places of the hollie Scripture it is evydent to be seen'. That statute in turn was repealed in 1571 by 13 Elizabeth I, c. 8, which thereby restored 37 Hen. VIII, c. 9. Texts in *Statutes of the Realm*, vol. III, p. 996; and vol. IV.i, pp. 155, 542, respectively. It is worth noting that the usury ceiling was progressively lowered, with the gradual fall in the real rate of interest: from 10 to 8 per cent in 1623, to 6 per cent in 1660, and finally to 5 per cent in 1713. Not until 1854 (17-18 Victoria c. 90), however, were the usury laws finally abolished. See R.D. Richards, *The Early History of Banking in England* (London, 1929; reissued 1958), pp. 19-20. 'Usury,' therefore, had changed its meaning to denote excessive interest, beyond the limit prescribed by law (to 1854). See the next note.

[9] See my recently published essay: John Munro, 'Usury, Calvinism and Credit in Protestant England: from the Sixteenth Century to the Industrial Revolution', in Francesco Ammannati, ed., *Religione e istituzioni*

(6) **Discounting** of commercial bills -- both foreign bills of exchange and domestic or 'inland bills'

- was possibly the earliest banking function undertaken by the Goldsmith banks,
- from indeed earlier in the 17th century (developing both in the Low Countries and in England, and probably more so in England, after 1600).

(7) **Discounting** was also undoubtedly the single most important banking function undertaken by the Goldsmiths and other English banks,

- both in this period and also during the Industrial Revolution era:
- it provided the most common method of supplying credit, working capital, to merchants and industrialists, when and where they most needed it.
- It was also far more common than straight lending.

(8) **Example involving discounting of a bill**: An English merchant or industrialist sells his goods on credit:

- in this example Frank Appleby agrees to sell 1,000 yards of cotton yarn to George Bateman, with delivery in two months; and Bateman gives Appleby a bill or promissory note by which he agrees to make payment in full in 90 days: so →
- the seller, Frank Appleby, immediately takes Bateman's bill to his local bank and sells it at discount, receiving either cash in the form of printed banknotes, or a credit in his bank account (on which he can write cheques to make payment).
- In so selling his note, the merchant endorses it, or signs it over to the bank.
- If the note was for £100, the bank buying the note at discount would give him only £97;
- then 90 days later the bank would present the bill and collect the full £100.
- The bank would then earn or receive in interest £3;
- and the annualized rate would be 3/97 x 365/90 = 12.54%. [See the handout]

(9) With a succession of notes continually falling due, and with cash reserves, bankers were generally always able to buy, i.e., discount, bills.

iv) **Issue of Bank Notes**: which develop from about the 1670s.

(1) banknotes were promissory notes issued by the bank against its own general credit: a simple IOU promising to redeem the note on demand for coined money.

(2) It is important to remember that such banknotes were always convertible on demand:

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religiose nell'economia europea, 1000 - 1800/ Religion and Religious Institutions in the European Economy, 1000 - 1800, Fondazione Istituto Internazionale di Storia Economica 'F. Datini', Prato, Serie II: Atti delle 'Settimane de Studi' e altri Convegni no. 43 (Florence: Firenze University Press, 2012), pp. 155-84. This is available on the departmental website for publications, allowing you to download the PDF file: http://www.economics.utoronto.ca/index.php/index/research/publications?personId=51

- convertible into gold or silver coin, into 'real money,'
- and they would never have been accepted without the firm promise of that conversion.

(3) These banknotes were generally issued when the bank made a loan or discounted commercial paper -- instead of handing out coin.

(4) **Original bank notes were informal**:

- These banknotes were handwritten and informal, and often made out for odd sums of money (those involved in either the loan or the discounting of commercial paper).
- They were normally made out in the name of the person who made the loan or discounted the bill;
- Thus, for such notes to be accepted in payment, they had to be endorsed or signed over to the new holder.
- But note therefore, that from the very beginning, such notes were fully negotiable and transferable by endorsement.
- The banknotes, however, could be redeemed -- i.e., they were converted into coined money, only at and thus only by the issuing bank.

(5) Formal banknotes that were printed, made out to bearer alone: and issued in fixed sums (i.e., for £10) date from the early 18th century.[10]

(6) These paper banknotes provided an extremely important addition to the English money supply at a time when the money supply was very inelastic: indeed during a very severe scarcity of silver coinage during the later 17th and early 18th century.

(7) The last recoinage had been in 1601;

(8) at that time, and again, by the 1690s, the silver coinage was not only scarce

(9) but in a deplorable state, because most of the circulating coins were badly worn and clipped, etc., and mixed with counterfeits.[11]

c) **London Banking Institutions around 1700**:

i) **Summary of Achievements**: by the early 18th century, the London goldsmith banks had developed the

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[10] Child's Bank was the first to do so: in 1729.

[11] Medieval and early-modern mints had one major defect: the nature of hand 'hammered' coinage, which meant that coins were minted with rough edges, i.e, not round, which state invited unscrupulous persons to clip off the edges, thereby amassing precious metals for resale. The solution was Blondeau's French invention of a water-powered screw press to produce perfectly round coins, with 'milled' or marked edges, which, if disturbed, would reveal any act of clipping. In 1662, Blondeau's mechanized screw press was extended to all English mints; but milled and hammered coins circulated together, until the Great Recoinage of 1698-99. See Thomas Sargent and François Velde, *The Big Problem of Small Change* (Princeton and Oxford: Princeton University Press, 2002), pp. 55-58.

widespread use of three important negotiable credit instruments:

(1) the cheque, originally a holograph [self-written] to confirm oral instructions to transfer payments

(2) discounted commercial paper (bills of exchange, inland bills, promissory notes), and

(3) the paper banknote, originally handwritten for odd sums, and then printed, for fixed sums.

ii) **None of these credit instruments in fact yet fulfilled all of the requisites of true money**:

(1) they were not universally acceptable in payment,

- thus, they were far from being legal tender.
- the best test for legal-tender status: if the government accepts such money in taxes

(2) they were all tied to coinage, in that they were convertible on demand or on maturity into coin

- but only by the issuer of the paper money,
- and thus not necessarily by others, who, however, could choose to do so

(3) To repeat: they were acceptable only with the belief that they could be so converted into coin

(4) N.B. Credit was still a function, though not a linear function, of the coined money supply.

iii) **Nevertheless these paper credit instruments did circulate as money**:

(1) even if narrowly; and that meant a significant reduction of dependence on coined money, at a time when supply of coined money was severely contracted, scarce.

(2) This represented the first major step towards an independent paper money supply.

iv) **Their use depended strictly upon confidence of the user**:

(1) confidence that the issuing bank would in fact honour the promise to pay, the promise to convert them into real money, i.e., gold or silver coin.

(2) To extent that such confidence was maintained, redemption or actual conversion into coin was rare (and certainly not all could be so redeemed in cash).

d) **British Banking to 1914: Short-Term Lending and the Real Bills Doctrine**

i) **Short-term lending, and chiefly by discounting commercial bills,** is the most striking feature of British banking -- both English and Scottish -- during the Industrial Revolution era and on into the 19th century:

(1) short-term loans, short-term credit, for essentially working-capital needs,

(2) as opposed to longer term loans for financing fixed capital formation (in plant and machinery).

ii) **This is in quite striking contrast to subsequent developments in continental and even American banking,** which came to engage in what we call investment banking to provide such long-term capital financing -- for financing fixed capital formation, especially in underwriting stock and bond issues.

iii) **We will subsequently explore many and various reasons for this persistent contrast,** as well as some limited ventures by London banks in investment banking in the very late 19th century.

iv) **But for now,** it is important to understand the philosophical importance of the so-called **Real Bills Doctrine** that underlay British economic thought and banking practice to World War I.

(1) Real Bills: that banks must not inflate the issues of credit and money but must restrict themselves only to issuing credit -- and that in bank notes -- that is fully backed by real goods.

(2) More concretely: that bank lending must be restricted to discounting commercial bills which in turn represent the production of actual goods in the very near future, so that those goods or inventories of goods will provide the real backing for the credit so issued.

(3) In our example of discounting, we saw that the whole purpose was to secure bank credit in order to finance the working capital needs of the firm in producing, within the next 90 days or so, the goods that it had promised to sell and supply: in this case, so many yards of cotton yarn.

(4) In reality, of course, even with such restricted uses of credit instruments, English banks were adding to the money supply, often in an inflationary manner, as we shall see in moment, with the consequences of the 1797 Financial Crisis.

(5) We will come back to the Real Bills doctrine and commercial banking in the 19th century

-- but now we must investigate the formation and functions of what was going to become the government's central bank (though a private one), the Bank of England, formed in 1694.

5. The Bank of England and the 18th-Century 'Financial Revolution'

a) **Reasons for the formation of the Bank of England in 1694:** for three reasons, which helps to explain its 18th-century functions

i) **To Provide the English Government with its own bank to finance warfare:** at a time when both Parliament and the London merchant community deeply distrusted the government.

(1) The Glorious Revolution of 1688:

- As already noted, Parliament had overthrown the reigning King James II (from 1685) in 1688,
- in the so-called Glorious Revolution, when he tried to become independent of Parliament,
- Parliament, having deposed James II, replaced him with his daughter Mary, who was married to a Dutch prince, William, Prince of Orange – so that both reigned as joint monarchs
- When William III assumed the English throne, he brought with him the ongoing war between the Dutch Republic and France (Louis XIV), which had begun in 1672.
- Mary II: 1689 - 1694: dying of small pox (at age 32)
- William III reigned from 1689 to his death in 1702, and thus alone after Mary's death in 1694.

(2) When the new king, William III, began to fight his and England's mortal enemy, Louis XIV (1643-1715)

of France, the crown's credit rating was so bad that, in borrowing funds, the English government had to pay annual interest rates up to 14%.

ii) **To establish and manage a permanent, funded national debt**, and subsequently to use this new bank to manage that national debt.[12]

(1) A permanent funded national debt had in fact commenced the year before the Bank was founded, in the year 1693,

- with the issue of the Million Pound Loan:
- it paid subscribers a lifetime annuity of 14% (tax free)
- and it was not in fact a real loan, since, as an annuity, it was never to be repaid,
- but was extinguished on the death of the holder of the annuities.[13]

(2) This debt was permanent:

- in that, to repeat, it never had to be repaid, as would have been the case with a genuine loan
- though portions of it were repaid, periodically, when finances allowed, at the initiative of the government;

(3) it was funded, in that the annual interest payments on the loan were funded by a special tax voted by Parliament (excise taxes on beer and spirits).

(4) In 1694, The Bank of England itself was set up with a loan to the crown that became the second portion of this new permanent national debt.

iii) **To provide a respected national paper currency:**

(1) to compensate for the chronic scarcity of coined money, especially silver coinage.

(2) Remember that I had commented on this problem of monetary scarcity before, in explaining a general era of deflation (falling prices),

- when so much silver was pouring out of western Europe into the Baltic and Asia,
- while only a diminishing supply of silver was coming into Europe from the American mines, as we have noted before, several times.

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[12] For the historical origins, see: John Munro, 'The Medieval Origins of the Financial Revolution: Usury, *Rentes*, and Negotiablity', *The International History Review*, 25:3 (September 2003), 505-62. See also the earlier (and somewhat different) Working paper version of this paper, on my Home Page: http://www.economics.utoronto.ca/ecipa/archive/UT-ECIPA-MUNRO-01-02.html

[13] For annuities (also known as *rentes*), see the discussion below. Alternatively subscribers could receive 10% annually to 1700, when their survivors would share a payment fund called a *tontine*, by which the last survivor, dying in 1783, was receiving £1,000 interest annually on a bond certificate of £100.

b) **The Mechanics of Forming the Bank of England in 1694**: [14]

i) **The £1.2 million loan**:

(1) A group of London based financiers, headed by William Paterson (a Scot), and the current Chancellor of the Exchequer, Sir Charles Montagu:

(2) who proposed to give the king a badly needed permanent loan of £1.2 million, at the bargain rate of interest of 8%,

(3) in return for the exclusive right to form the first and only joint-stock bank in England, a bank that would have a monopoly on government banking services.

ii) **They proposed to raise this £1.2 million by selling shares,** i.e., stock certificates, in this new Bank of England, to the public.

(1) In fact, they made the loan in printed Bank of England notes, for the full amount, when they had raised only 60% of the capital, about £720,000:

(2) typically investors in 'subscribing' to buy shares, began by paying only a portion in actual cash, often just 10% (i.e., buying stock 'on margin', on credit).

(3) and in effect, thus created new money, in a procedure now known as 'monetizing the national debt'.

(4) Helps to explain why the 1690s, following a period of deflation, was a decade of short-term inflation (but followed by more deflation in the early 18th century).

iii) **Parliament accepted this proposal in May 1694:**

(1) It voted a new tax on ship-tunnage to pay the annual 8% interest on the loan.

(2) Hence this new Bank of England was originally called the Tunnage Bank.

iv) **When all the capital stock had been sold, in July 1694, Parliament then passed a statute to incorporate this group formally as the Bank of England:** as an incorporated joint-stock company. [15]

v) **How the loan was furnished to the crown:**

(1) In theory, the funds for the £1.2 million loan were to be raised from the sales of these shares

(2) But because the initial stock sales were chiefly made on margin, at 10% down payment, took more years to raise the full amount of capital required

(2) So the Bank of England furnished the funds for the loan in the form of its own legal-tender bank notes

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[14] The best history remains: Sir John Clapham, *The Bank of England: A History*, 2 vols. (Cambridge and New York: Cambridge University Press, 1944). See also Richard Roberts and David Kynaston, eds., *The Bank of England: Money, Power, and Influence, 1694 - 1994* (Oxford and New York: Oxford University Press, 1995).

[15] 6 William and Mary, c. 20

(3) 'monetizing the debt": did in fact cause some inflation in the later 1690s

(4) **In 1697,** Parliament amended the Bank Act to resolve the problem of outstanding government 'tallies' of short-term loans by, in effect, grafting 80 percent of this debt on to the Bank's capital stock.[16]

v) **Bank Act of 1709 (7 Anne c.7)**: In February 1709, i.e., twelve years later, Parliament passed a new bank act to make the Bank of England the sole and exclusive joint-stock company bank in England (did not affect Scotland).

(1) From then on, all other English banks were restricted in organization to six-member partnerships, (2) and in that form they obviously could not hope to compete with the Bank of England.

(3) That monopoly on joint-stock banking in England lasted until 1826.

(4) The interest rate on the original loan of £1,200,000: from 1709

- that year it was reduced from 8% to 6% (with an extra payment of £4,000 for management fees).[17]
- that rate continued until 1742, when it was reduced again, to 3% plus the management fee of £4,000 a year (in effect, about 3.75%)
- 1757: renewed at the same rate: 3% plus the £4,000 annual management fee

vi) **The Bank of England was enormous success from its inception,** with a very secure flow of income, based upon:

(1) annual flow of 8% interest income to 1709 (and then 6% to 1742 – as indicated above), on its permanent loan to the Crown, later raised to £2 million, and finally reaching £11.7 million by the 1750s.

(2) Government payments for the various financial services it rendered: in addition to the annual management fee of £4,000.

(3) Earnings from discounting: Exchequer bills and other commercial bills

(4) Payments from the private sector for various financial services it performed: especially in discounting financial paper.

vii) **Major Foundations of its Success: Confidence of the Public**.

- The true foundation was the strong confidence and trust that it inspired, because the Bank of England was seen to belong jointly to the king, to the Parliament, and to the London financial community:
- to have tri-partite ownership (though legal ownership was vested in the share-holders

(1) As the government's sole banker (eventually), the Crown was fully satisfied that it really had its own bank.

(2) As a legal creation of Parliament (subject to decennial revisions, or even more frequent ones, of the Bank

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[16] Statute 8 & 9 William III, c. 20.

[17] The Bank in fact made an interest free loan of £400,000 to the government, raising the overall loan to £1,600,000: with an annual interest payment of £96,000, that made the effective interest rate 6%.

Act), Parliament believed it controlled it: especially since Parliament voted the taxes that paid interest to the Bank.

(3) as a private joint-stock company bank, operated by London financiers, it was regarded as being a member of the London financial community.

viii) **Its Power and right to issue banknotes**: also major source of strength

(1) Bank of England notes, issued from its inception, were the only legal-tender banknotes circulating in England.

(2) as legal tender, these notes were convertible on demand into gold or silver coin [up to 1797].

(3) Scotland had its own banks, with their own banknotes: to be discussed later.

c) **Functions of the Bank of England in the 18th Century**

i) **As the Government's Banker**: accounting for 75% of its business

(1) It handled all government financial accounts: domestically and abroad;

(2) and it also served as the bullion agent for the royal mint.

(3) **Short-term Loans to the Crown (Exchequer Bills)**: through discounting what are called:

- Exchequer Bills: which the Bank of England itself first created, in 1696.
- Note that the British 'Exchequer' is simply the Ministry of Finance
- Exchequer bills were simply government promissory notes, short-term notes, that were interest bearing and negotiable by endorsement.
- They were very similar to modern day Canadian Treasury Bills: also short term
- They were acceptable in taxes, and circulated as a form of near-money.
- They were issued by the Exchequer to pay for supplies, munitions, construction, food, clothing, payment of wages and salaries, etc.
- Those who received Exchequer bills in payment could then sell them at slight discount at offices of Bank of England, or at other financial institutions, and receive Bank of England notes in return (or the Exchequer could discount these notes itself with the Bank of England).
- By 1700, the volume of such Exchequer bills had grown to about £5 million;
- and from then on they represented a very large part of the Bank's business: in buying them from other banks and financial houses.

(4) Finally, the Bank of England came to handle the national debt for the government (issuing and servicing debt instruments), which will be treated later as a separate topic.

ii) **As a Private Bank**:

(1) in this role, the Bank of England performed all the standard banking functions of private banks, as we

have seen with the London goldsmith banks:

- i.e., deposit and transfer,
- lending,
- discounting,
- and note issue.

(2) But as a private bank, its services were really limited to just a few large clients personally approved by the Board of Directors:

- some leading London and Amsterdam banks,
- and large English business corporations such as the East India Co, Hudsons' Bay Co., Royal African Co., The South Sea Company.

iii) **As a 'Bank of Last Resort'**: as an embryonic Central Bank

(1) This was the most imperfectly developed role: true modern central banking, with

- open-market operations in government bonds,
- use of the Bank Rate, the rate used in rediscounting commercial paper, in order to control the interest rate,
- and other means of controlling the money supply, etc.
- These all have to wait until the 20th century, after World War I, after this course ends.

(2) Embryonic role in Central Banking began with rediscounting in its private role as a bankers' bank: for the chief service it provided its clients, chiefly London goldsmith banks and big corporations, was to rediscount their commercial paper.

(3) The Bank of England would buy commercial bills that these institutions had already bought at discount, and thus the Bank of England would buy them at further discount.

(4) Importance of rediscounting: as it is called, was to allow its client banks to expand their own cash reserves, which were generally held in the form of Bank of England notes (rather than gold):

- i.e., to give them more Bank of England notes in exchange for their commercial paper,
- thus allowing these private banks to expand their loans (in so far as lending was tied to a reserve ratio, which was traditionally one-third).

(5) But for almost all of the 18th century, this privilege of rediscounting was restricted to just that narrow select clientele of the Bank of England, as previously defined: approved by Board of Directors.

d) **Later 18th-Century Evolution of Central Banking**: **The Bank of England and the Wisselbank (Exchange Bank) of Amsterdam**

i) **During the first part of the 18th century, the Bank of England was viewed as inferior to or less**

important than its counterpart in Holland:

(1) i.e., inferior to the Exchange Bank, or in Dutch the 'Wisselbank van Amsterdam', which was a bank wholly owned and governed by the city government of Amsterdam itself.

(2) See the earlier printed lecture notes on Dutch Banking and Finance (Lecture Topic no. 1), which are most important for a fuller understanding of this current topic on English/British banking.

ii) **Although the Dutch still dominated European banking and finance up to or past the mid-18th century,**

(1) the Amsterdam Wisselbank in fact proved powerless to cope with a series of disasters that befell the Amsterdam money markets in the later 18th century:

(2) in particular the financial crises of 1763, 1773, and 1783 (thus neatly in 10-year intervals.

iii) **It was powerless because it was only a bank of deposit and transfer and was not a lending or credit bank,** and could not extend credit (by law) to its clients.

iv) **During these financial crises, however, the Bank of England -- which was indeed a credit bank -- did intervene,**

(1) and decisively intervened, to shore up the reserves and credit of its English and Dutch banking clients active in the Amsterdam money market,

(2) while clients of the Amsterdam Wisselbank, who received no support, went bankrupt.

(3) Thus the Bank of England, in so decisively intervening in these crises, and proved itself to be the superior financial institution,

- by rediscounting commercial paper of client Amsterdam and London banks,
- and thus by shoring up their cash reserves, to permit further lending;

(4) The Bank of England thereby encouraged a major diversion of banking and financial activity away from Amsterdam to London.

v) **The French Invasion and Conquest of the Netherlands** in 1795, creating a puppet state known as the Republic of Batavia, effectively ended any role of the Wisselbank and indeed the role of the Amsterdam money market itself.[18]

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[18] The Republic of the Netherlands was conquered by France in 1795, and it then became the Batavian Republic. Its government, set up in 1798, was bound to France by alliance. In 1805 Napoleon renamed it the Batavian Commonwealth and placed executive power in the hands of a dictator. In 1806 it was replaced by the Kingdom of Holland under the rule of Louis Bonaparte; it was incorporated into the French empire in 1810. It was finally liberated with the defeat of Napoleon in 1815 (Battle of Waterloo); and by the Congress of Vienna in 1815 it became the Kingdom of the Netherlands, then including the former Austrian Netherlands, today the Kingdom of Belgium.

vi) **The Financial Crisis of 1797:** which led to true rediscounting as an embryonic central bank

(1) The year 1797 was one of military, political, and financial crisis: a French invasion led by Napoleon seemed imminent.

(2) Panic ensued, so that people naturally were desperate to convert their paper money into gold, fearing that under French conquest any paper money would be worthless.

(3) Severe liquidity crisis: the banking system was threatened with collapse, as depositors sought to withdraw their accounts in cash and note-holders demanded cash redemptions; as bank reserves fell, banks were forced to call in their loans to clients.

vii) **The Bank of England then intervened with two revolutionary measures**:

(1) The Bank of England extended the privilege of rediscounting to all banks and financial institutions, whether or not they were clients:

- i.e., the Bank promised to buy at discount all commercial paper presented,
- thus allowing the private banks to shore up their cash reserves.

(2) The Bank also suspended all payments in coin (specie):

- And thus ended convertibility of Bank of England banknotes into gold.
- That allowed private banks similarly to end convertibility of their notes into gold, while permitting convertibility into Bank of England notes.

(3) These measures allowed private banks to expand their loans, and in effect allowed them an unrestricted note issue.

viii) **There followed, from 1797 to 1821, an experiment in purely fiduciary currency (i.e., backed not by gold, but by government fiat):** the so-called 'Era of the Paper Pound,'

- which not surprisingly was highly inflationary, as noted earlier, in our discussion of prices
- with no real check on the issue of paper banknotes, a veritable flood of money ensued.
- Not so much from the Bank of England, as from the various other private banks, in both England and Scotland (to be discussed later).

e) **The Bank of England's Note Issue in the 18th Century**:

i) **From its inception in 1694, the Bank of England had issued notes as printed paper currency**:

(1) as noted before, the original loan of £1.2 million was made to the crown in Bank of England notes.

(2) Original Bank Act of 1694, however, had made no mention of bank notes, though allowing Bank to issue sealed bills up to its capitalization: i.e., formal bank notes with the Bank's official seal.

(3) The Bank also issued unofficial, unsealed bank notes, called 'cashier's bills' with the cashier's signature only.

(4) Bank Act of 1709, the one giving the Bank of England a monopoly on joint-stock banking, also made Bank of England notes fully legal tender.

(5) Parliament stated that the Bank's capitalization (then about £5 million) was a sufficient guarantee for notes

- so that shareholders were not liable for default on notes up to that amount.
- that question in fact never arose.

(6) By the early 18th century, Bank of England notes were issued for fixed sums and made out to bearer.

ii) **Bank of England was still obligated to convert its notes on demand into gold and silver**:

(1) i.e., despite their legal tender status (up to 1797), notes were still viewed as paper certificates representing true money in terms of gold, in the Bank's vaults;

(2) but so complete was trust in these notes that few were converted into coin or bullion, except for purposes of foreign trade, i.e., in paying for imports (or settling trade deficits).

iii) **Bank of England notes soon displaced private bank notes in London**:

(1) by the early to mid 18th century, the goldsmith and other London banks gave up issuing their own banknotes, since obviously their notes could hardly command the same confidence as B of E notes.

(2) Indeed, most private banks in London and elsewhere in England came to hold their own cash reserves in Bank of England notes, rather than in coin or gold.

iv) **But Bank of England notes did not circulate widely outside London itself in the 18th century:**

(1) because only the Bank of England could cash these notes (convert into coin or bullion);

(2) and until 1833, the one and only office of the Bank of England was in London, on Threadneedle Street -- hence the name for the Bank, as 'The Old Lady of Threadneedle Street'.

v) **High Denominations also restricted their circulation:**

(1) From 1697 to 1759, the smallest denomination note normally issued was £20;

(2) in 1759, that was reduced to £10; and then in 1793, to £5.

(3) With the 1797 Banking Crisis, when it was imperative to restore liquidity, the Bank of England began issuing £1 notes, non-convertible, as did the private banks:

(4) with no restrictions on their issue, as just noted, the banks issued a flood of paper notes, which historians have partly blamed for the inflation that lasted until end of wars, in 1815.

(5) This period is thus known as 'Era of the Paper Pound,' the era of purely fiduciary currency.

v) **Conclusions:**

(1) These restrictions on Bank of England notes, the lack of any branches outside London to cash them, and the high denominations until 1797, really limited their use to large scale financial and commercial transactions.

(2) They were very useful for inter-bank and inter-city financial transactions among merchants, bankers, etc. (displacing the older inland bill of exchange).

(3) But they were not a public medium of exchange, except for the period 1797-1820.

6. <u>The Bank of England and the National Debt: The Financial Revolution in England</u> [19]

a) **Some definitions of financial terms for national government debt issues:**

i) **Annuities:** from the continental system of *rentes*, which were derived from land rents.[20]

(1) They developed from the late 12th or early 13th century,

- first in Mediterranean Europe, as a means of investing in land (someone else's farm holdings):
- an investment in return for a lifetime or perpetual income: with a stream of annual payments

(2) From at least the 1220s, they became an important method of financing urban governments, in

- northern France and the Low Countries, and then in the Rhineland (Germany)
- and in Catalonia-Aragon and Castile (Spain), etc.
- but not (surprisingly) in Italy, whose city-states continued to rely on forced loans (known as *prestanze* or *prestiti*).

(3) nature of *rentes*

- The investor 'purchased' an annuity by providing the government with a lump-sum payment,
- in return for which he received a *fixed annual cash payment* so long as he lived, an annual 'return'.
- the investor could never reclaim repayment of the funds supplied: otherwise, this would be no different from a loan, a usurious (interest-bearing) loan
- the government (or individual) that sold the *rente* could, however, redeem the *rente* contract, at will, and a par value

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[19] See John Munro, 'The Medieval Origins of the Financial Revolution: Usury, *Rentes*, and Negotiablity', *The International History Review*, 25:3 (September 2003), 505-62 (and note 9 above); and John Munro, 'Rentes and the European Financial Revolution', in Gerard Caprio (editor in chief), Larry Neal, and Charles Calomiris, eds., *Handbook of Key Global Financial Markets, Institutions, and Infrastructure:* lst edition (London and New York: Elsevier and Academic Press, 2012), article no. 23, pp. 235-45**.** According to Peter Dickson, the British 'financial revolution' (a term that he coined) began in 1693, within England (before the Act of Union, formally uniting Scotland with England), during the joint reign of the Dutch-born monarch William III (1689-1702) and Mary II 1689-1694). Forrest Capie, in referring to these events, remarks that 'the word *revolution* has perhaps been overused in economic historical studies, but perhaps this is an occasion when it is appropriate'; similarly Marjolein 't Hart remarks that 'currently the financial revolution in England is being regarded as one of the hallmarks of the Modern State, with England as the model country...'. See Peter G. M. Dickson, *The Financial Revolution in England : A Study in the Development of Public Credit, 1688-1756* (London, 1967); Forrest Capie, 'The Origins and Development of Stable Fiscal and Monetary Institutions in England', in *Transferring Wealth and Power from the Old to the New World: Monetary and Financial Institutions in the 17th Through the 19th Centuries*, ed. Michael Bordo and Roberto Cortés-Conde (Cambridge, 2002), p. 43; Marjolein 't Hart, ' "The Devil or the Dutch": Holland's Impact on the Financial Revolution in England, 1643-1694', *Parliaments, Estates and Representatives*, 11.1 (June 1991), 40.

[20] See Munro, 'Medieval Origins of the Financial Revolution', in notes 12 and 19 above.

- otherwise the investor (buyer of the contract) would have to find a third party who would purchase his *rente* claim (and thus receive the annual annuity payments) – depending on the type of *rente* contract

(4) types of *rentes*: two basic types

- life-rents: *lijfrenten* (in Dutch/Flemish); or *rentes viagères or rentes à vie* (French): valid only during the life of the buyer and were extinguished upon his/her death (sometimes for two or three 'lives')
- perpetual or inheritable *rentes*: *erfelijk renten* or *losrenten* (Dutch/Flemish); *rentes heritables* (French)
  - perpetual and thus inheritable *rentes* that were normally transferable (by sale: i.e., negotiable) to third parties
  - but the seller of this *rente* contract could also redeem it at will, at par value

(5) these *rentes* or annuities, to repeat with emphasis, could never be and were **never** redeemable at the request of the buyers:

- i.e., the purchaser-investor could never reclaim his principal sum invested;
- and the government was thus under no obligation ever to repay the principal sum
- the government, however, could choose to 'call' or redeem the *rentes*, at par (face value).
- Thus in effect those who purchased government *rentes* were instead purchasing a lifetime or perpetual income stream.

(6) The significance of the medieval usury doctrine for the *rente* contracts

- The universal usury prohibition helped to promote the popularity of these *rentes* or annuities, or *rentes*:
- i.e., the ban on charging any interest on any loans [as defined by the Roman Law on *mutuum*]
- *mutuum* = 'what was mine becomes thine', as the literal name for a loan,
- which necessarily involved a transfer of property rights over the capital for the duration of the loan
- hence it was a mortal a sin to rob the borrower of his own property rights: and hence the fundamental reason for the medieval usury ban (prohibition of interest on a loan).
- for the *rente* was not a loan – it never had to be repaid as noted above (unless, as also noted, the government itself chose to redeem and liquidate these *rentes*).
- If there was no loan, there was no interest: as Church documents frequently proclaimed, *ubi non est mutuum, ibi non est usura* [where there is no 'mutuum' type loan, there is no usury]
- This principle was first determined by Pope Innocent IV in a papal bull (ordinance) of 1250,
- which was reaffirmed in the fifteenth century by three further papal bulls (1425, 1452, 1455)
- Obviously therefore, if the buyer of the *rente* or annuity (who furnished funds to the government)

could ever demand redemption, i.e., repayment, then the *rente* would be viewed as a loan cloaked in the form of another financial instrument.

- as will be so frequently emphasized the right of redeem was the sole prerogative of the seller or issuer of the *rente*, a right that had the full approval of the Church.
- generally, however, only governments ever exercised that right: not private financial agents.

(7) **The payment of an annual return on *rentes* or annuities (not interest) and their sources:**[21]

- these papal ordinances also required that the annual payments made to *rentiers* –to such holders of *rentes* (i.e. annuity payments) – be tied to real estate or other real assets
- that came to include excise taxes on the consumption of products of the land: bread, beer, wine, butter, meat, cheese, textiles, etc.
- a very regressive form of taxation that provided a far greater burden for the poor and the lower classes, because such consumption constituted a far higher proportion of their disposable incomes than for the upper middle classes and aristocracy
- Note, that while the greatest tax burden came in the consumption of alcohol (beer wine), the poor could not avoid such consumption, because water and milk were unsafe to drink (no water purification, no pasteurizing of milk, etc., before the 1880s).

(8) **The question of the usury doctrine and of interest in early-modern Europe:**

- In 1540, as noted earlier, Emperor Charles V, with support from the Estates General of the Habsburg Netherlands – while still Catholic, but under Protestant (Lutheran, Calvinist) influences, issued an ordinance to permit interest payments (on commercial loans only), up to 12%: anything above that was considered to be usury
- In 1545, Henry VIII had the English Parliament enact a similar statute to legitimize interest up to 10% (but on all loans): similarly, anything above that was considered to be usury.
- In 1552, Parliament, at the behest of the government of Henry's son Edward VI, revoked this statute (even though this government was Protestant).
- but in 1571, Queen Elizabeth I had Parliament restore I restore her father's statute in full.

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[21] See John Munro, 'The Usury Doctrine and Urban Public Finances in Late-Medieval Flanders (1220 - 1550): Rentes (Annuities), Excise Taxes, and Income Transfers from the Poor to the Rich', in Simonetta Cavaciocchi, ed., *La fiscalità nell'economia Europea, secc. XIII - XVIII/ Fiscal Systems in the European Economy from the 13th to the 18th Centuries,* Atti della 'Trentanovesima Settimana di Studi', 22 - 26 aprile 2007, Fondazione Istituto Internazionale di Storia Economica "F. Datini", Prato, Serie II: Atti delle "Settimane de Studi" et altri Convegni 39 (Florence: Firenze University Press, 2008), pp. 973-1026. This article is available as a PDF file that may be downloaded from my website (Home Page): http://www.economics.utoronto.ca/index.php/index/research/publications?personId=51

- The interest rate ceilings were subsequently lowered:
    - to 8% in 1623;
    - to 6% in 1660;
    - and to 5% in 1711
- staying at that rate until the abolition of usury laws in 1854
- While other Protestant countries legalized interest, the usury ban continued to be enforced in most other Catholic countries up to the French Revolution.[22]

(9) **Note:** that the usury laws had no bearing on the sale of annuities (*rentes*),

- because annuities were not loans, under the definition of the usury laws, and thus did not bear interest.
- therefore, the sale of annuities was unaffected by the official reduction in the interest rates, above which level the usury prohibition applied.

(10) Investors purchasing annuities could regain their principal, or part of it, *only by selling them in some secondary market*, where they could end up as winners or losers, as in any stock market.

(11) To repeat, although governments retained the right to call or redeem *rentes* or annuities, at the original face value, they were never under any obligation to do so: i.e., to redeem the principal.

(12) **English government annuities in the early 18th centuries:** produced a minor exception to the rule that annuities were either lifetime or perpetual

- in the years 1705 to 1709, the Exchequer (Ministry of Finance) sold several series of 99 year annuities: i.e., those expired without further payments after 99 years, but which, in the interim, could be transferred or bequeathed to others
- in 1710: the Exchequer sold a series of annuity for 32 years
- as we shall see, these 99- and 32-year annuities were in fact also redeemable.
- thereafter, all annuities were perpetual, though redeemable by the government
- known as ‘perpetual stock’: see below.

ii) **Callable Debentures:** similar to annuities.

(1) similar in financing to the annuities just explained: but a more formal loan contract

(2) But the government usually issued such debentures with a promise to redeem at some future specified date, or sooner, by its own declaration.

(3) In essence, like all similar forms of government debt instruments, these debentures were always ‘callable’, or redeemable whenever the government so chose to do so.

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[22] See n. 4 above.

iii) **Perpetual Stock:**

(1) evolved from annuities: the investor purchased the stock, with a lump sum cash payment, to the government, in return for an annual interest payment.

(2) The government was, again, under no obligation to redeem the principal, unless the Exchequer itself subsequently decided to do so by 'calling' the stock for redemption.

(3) Again, like all other government debt instruments except actual loans or bonds, these were also redeemable or 'callable' by government edict.

(4) Purchasing government 'stock' – traded on the London Stock Exchange – was no different from purchasing stock (shares) in the East India Co, Hudson's Bay Co, Royal African Co, etc.

iv) **Consols:** Consolidated Stock of the Nation, from 1749 - 1752:

(1) the final 18th-century consolidation of all outstanding government debt issues

(2) discussed below as a separate topic

b) **The National Debt**: There were two components of that debt in the later 17th, early 18th century:

i) **The short-term floating debt**:

(1) consisting of short-term loans, with fixed maturity dates, undertaken by the government;

(2) that also included the Exchequer bills, handled by the Bank of England, that we saw last day.

ii) **The permanent, funded national debt**: beginning in 1693 (as previously discussed, with the origins of the Bank of England, last day).

(1) **permanent:**

- because there was no obligation to redeem it;
- and portions of that long-term debt were only rarely redeemed
- perhaps most important: the permanent national debt became truly 'national', as the obligation of Parliament — and thus no longer the personal obligation of the king, only from 1693.

(2) **funded national debt:**

- because the annual interest payments were funded by specific taxes voted by Parliament (also used to pay annuities, for lives, 99 years, etc.)
- note that while in continental Europe, excise taxes on consumption had been used to finance government debts (loans, forced loans, *rentes*) from at least the 13th century, they were introduced in England relatively late: in 1643, by John Pym in the Long Parliament, just after the outbreak of civil war between Crown and Parliament (1642-1649, when Charles I was executed)

iii) **The development of the English national debt from 1693: its origins**

(1) essentially the national debt came to be composed of perpetual annuities: inheritable and fully negotiable,

- but known instead as 'perpetual' stock,
- especially with the culmination of the 'Financial Revolution', in 'Pelham's Conversion' of 1749 - 1757 (see below).

(2) The basic constitution and formation of permanent funded national debt, in perpetual annuities,

- was imported from the Dutch Republic (Republic of the United Provinces):
- remember that with the Glorious Revolution, the Dutch ruler (*stadhouder*), William III of Orange became king (1689-1702), with his wife Mary II (1689-94) as joint monarchs

(3) The public finance of the Dutch republic was similarly one based on annuities or *renten* – but a combination of life annuities (*lijfrenten*) and perpetual annuities (*erfelijk renten,* now better known as *losrenten*).

(4) The Dutch had inherited this system — after the Revolt of the Netherlands – from the earlier Habsburg Netherlands.[23]

(5) The Habsburg Netherlands had inherited this system from the medieval towns of Flanders and Brabant, from the 13th - 14th centuries.[24]

(6) The evolution of England's permanent funded national debt : can be seen in the table on the screen (and printed in the Appendix of this lecture).

c) **Chief Features in Evolution of the National Debt to 1715 (summary)**:

i) **Inception of the National Debt**: **The Million Pound Loan of 1693**

(1) the Million Pound Loan of January 1693: not a loan, in fact, but a lifetime annuity of 14% (or 10% to 1700, with survivors then sharing in a *tontine*):[25]

(2) this was self-liquidating, diminishing as the subscribers died off (receiving payments only for lifetime).

ii) **Formation of the Bank of England in 1694**:

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[23] See Tracy, James D., *A Financial Revolution in the Habsburg Netherlands: Renten and Renteniers in the County of Holland, 1515 - 1565* (Berkeley-London, 1985); Tracy, James D., 'Taxation and State Debt', in Thomas Brady, Heiko Oberman, and James Tracy, eds., *Handbook of European History, 1500 - 1600: Late Middle Ages, Renaissance and Reformation*, 2 vols. (Leiden, 1994-95), vol. I: *Structures and Assertions*, pp. 563-88; Tracy, James D., *Emperor Charles V, Impresario of War: Campaign Strategy, International Finance, and Domestic Politics* (Cambridge and New York: Cambridge University Press, 2002); Tracy, James, 'On the Dual Origins of Long-Term Debt in Medieval Europe', in Karel Davids, Marc Boone, and V. Janssens, eds., *Urban Public Debts, Urban Governments, and the Market for Annuities in Western Europe, 14th-18th Centuries* (Turnhout: Brepols, 2003), pp. 13-26.

[24] See also John Munro, 'The Medieval Origins of the Financial Revolution: Usury, *Rentes*, and Negotiablity', *The International History Review*, 25:3 (September 2003), 505-62.

[25] see note 8 above.

(1) permanent £1.2 million loan, subsequently increased to £11.7 million, by 1750

(2) originally at 8% interest (1694-1709);

(3) then 6%, from 1709-42

(4) and then just 3%: from 1742

iii) **Creation of a rival New East India Company in 1698**: which provided a permanent loan of £2.0 million, similarly raised through sale of stock (also at 8%).

iv) **In 1709, New East India Co. was merged with (absorbed by) the original East India Co.**:

(1) The original company in effect bought out its rival by providing yet another permanent loan, of £1.2 million.

(2) By 1750, the merged East India Co. held £4.2 million of the national debt, and was known as one of the 'Three Sisters,' along with Bank of England, and the South Sea Co (see below).

v) **Period 1704-1711**:

(1) the government raised funds (not loans) in the form of self-liquidating annuities, paying annual interest over periods of 32 and also 99 years.

(2) in effect a combination of interest and principal, in that

(3) the annuities expired, with no further payments, after those 32 or 99 years

vi) **1715: The Role of the Bank of England in Managing the National Debt:**

(1) In 1715, the Bank of England began its role as a manager of the national debt, rather than just acting as a creditor, or supplier of loans, short-term and long term.

(2) **Callable Debentures**: it arranged the sale of over a million pounds in government debentures that had no specific maturity, but were callable or redeemable on demand by the government (when it had the funds to do so).

(3) The Bank of England handled five more such issues over next five years.

d) **The South Sea Company and the National Debt**: Rival to the Bank of England.[26]

i) **The South Sea Co. was formed in 1711:**

(1) ostensibly it was set up as a commercial company with aim of monopolizing British trade in the Pacific,

- whose international trade was then largely controlled by the Spanish:
- especially the lucrative silver-silk route from Mexico to the Philippines to China

(2) it must also be noted here that it began its life as fully chartered joint-stock company;

- i.e., with a legal charter of incorporation,

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[26] The best study on this subject is: Larry Neal, *The Rise of Financial Capitalism: International Markets in the Age of Reason* (Cambridge: Cambridge University Press, 1990).

- making it a separate legal entity under the law.
- and with limited liability for its shareholders (limited to the amount that each had agreed to pay for each of their shares)

ii) **Its real goal was to take over all of the outstanding national debt:**

(1) all outstanding debt issues, short term and long term, that were *not* held by the Bank of England and the East India Co. -- and the public more generally;

(2) then to use that constant stream of government interest to finance its operations, its overseas trade, if any.

iii) **The South-Sea Company's Conversion of short-term debt in 1711**:

(1) The government's problem: the current war of the Spanish Succession (1702-13) had ballooned government debt from £16.4 million to £53.7 million, much of it at high rates of interest.

(2) The South Sea Co. took over large part of the government's short-term floating debt:

- by purchasing or converting £9.47 million, from a series of six short-term loans, paying from 6.25% to 9.0% or more, into South Sea Company stock (buying much of it discounted from par value), as '5% perpetual stock'
- meaning that it would maintain that fixed rate of return (unless redeemed).

(3) holders of such South Sea Company stock would have to sell it through a broker to some third party to get their capital back (with gains or losses).

(4) The South Sea Company, as the new holder of these government debt instruments,

- received the interest income from these loans and debentures,
- which it then used to finance its trading activities and to pay the 5% annual dividend to the holders of South Sea Company 'perpetual' stock;

(5) As the government loans and debentures matured or were called, they were in effect converted into new obligations to the South Sea Company paying only 5% per year, an income in effect transferred to the South Sea Company stockholders (less a commission).

iv) **Why would stockholders gain over holding government debt: even with a lower return?**

(1) **By exchanging a very short term asset into a much longer term asset:**

- Thus they converted a short-term and uncertain asset into a permanent and much more certain asset, with a far longer investment horizon: indeed, in literally perpetual stock
- even though that meant receiving a lower yield (interest payments)
- for most investors, that was preferable to having a higher yielding asset that the government could call and redeem at par, without advance notice.

(2) **By acquiring negotiability of their assets: an equally and probably an even more important**

consideration:

- for company stock was more readily negotiable, to be sold and convertible into cash, via the London Stock Exchange,
- than were the various forms of government debt (which were thus heavily discounted).
- Thus stockholders could more readily realize capital gains, when the value of securities rose;
- That, therefore, offered the investor the dual prospects: of secure dividend income to be augmented by expected capital gains (but thus with the risk of capital losses).
- That was true, of course, only so long as the stock market worked efficiently, and stock values did indeed continue to rise.
- Remember that the London Stock Exchange, formed in the mid 1690s, was then functioning well and trading in various joint-stock issues.
- in general, those holding South Sea Company stock were far better able to liquidate this asset – to convert stock itself into cash– than were holders of governments loans and bonds

(3) **By using their now negotiable stock as collateral for loans:**

- a negotiable asset of this nature provided another major advantage (as also noted last day): to be used as collateral in borrowing – i.e., in securing loans.
- consider that no merchants or industrialists, etc, nor 'capitalist' farmers could engage in profit making enterprises without borrowing to finance their capital needs
- in general, as I have stressed as a central theme, no economy can operate with abundant credit, readily available and transferable.
- before the emergence of negotiable stock issues, stocks traded on the London Stock Exchange, the chief form of business collateral was land or other physical properties used to secure mortgages.

v) **In 1719-20**: **the South Sea Company attempted to take over the remainder of outstanding national debt, in the very same fashion:**[27]

(1) This enterprise then led to the infamous South Sea Bubble

(2) The South Sea Company offered to buy up various outstanding and callable loan issues (1693-1719) and annuities.

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[27] For the complex, most detailed story, see William R. Scott, *The Constitution and Finance of English, Scottish and Irish Joint-Stock Companies to 1720*, 3 vols. (Cambridge: Cambridge University Press, 1912; reissued: Gloucester, Mass.: Peter Smith, 1968), Vol. I, pp. 387-438; and Vol. III, pp. 287-360. See also Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967); and Larry Neal, *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason* (Cambridge and New York, 1990).

(3) in effect all debts except those currently held by the B of E and the East India Company.

(4) Thus, many debt-holders would be converting these loans into South Sea Company stock;

- once again the new stockholders would gain by acquiring a far more negotiable and convertible security than the government debentures and annuities;
- and securities that would be perpetual assets, if the holder did not wish to sell them, paying a guaranteed annual dividend (interest).

(5) This was a vast operation: it meant the conversion of:

- £16,546,202 million in redeemable government debentures and redeemable stock,
- £13,331,320 in irredeemable long-term annuities: 99 years
- £ 1,703,366 in irredeemable shorter-term annuities: 32 years
- i.e., a total of £31,58,888 million in government debt issues (debentures and annuities)
- that amounted to 64.18 percent of the total national debt
- the remainder, amounting to £18,3231,875, or 26.72 percent of the national debt was held by the Three Sisters or Corporations: i.e., the Bank of England, the East India Company, and the South Sea Company itself.[28]

(6) The South Sea Co. began selling more shares to the public,

- partly to raise working capital,
- partly to acquire cash to buy out those government debt-holders who did not wish to convert their assets into South Sea Company stock.
- but also, as a key point to be stressed later, to have new shares (with, it was hoped, with inflated values), to be traded or exchanged for outstanding issues of government debt
- key point: South Sea Company shares were to be exchanged at the prevailing market prices, on the London Stock Exchange, for the various government debt issues (but at their nominal, par value)
- Thus, the higher the market value of the shares on the LSE, the fewer South Sea Company shares would be exchanged for British government debt issues
- a total of £13.875 million of this government debt, in various forms, was actually converted into 5% South Sea Company stock, before disaster struck in the form of the South Sea Bubble

e) **The South Sea Bubble of 1720**: This famous financial adventure occurred during a speculative boom on

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[28] The remainder, amounting to £18,321,872 was held by the Three Sisters: £ 3,375,028 by the Bank of England; £ 3,200,000 by the East India Company; and £11,746,844 directly by the South Sea Company. The South Sea Company succeeded in converting only £13.985 million during this financial operation. The data are taken from tables given in Dickson, *Financial Revolution* (see the previous note).

the London stock market.[29]

i) **share prices were rising continuously**: to produce a veritable 'bubble'

(1) Thus the 1720 stock market boom was essentially based on greed: i.e., because of irrational expectations of continued capital gains – and beyond any rational reasons for expecting such gains.

(2) i.e., people were buying stock with the expectation that in the near future, with a continued rise in share prices, they could sell them at a substantial profit or capital gain.

(3) at some, point much financial 'bubbles' of this are 'pricked', leading to collapse one investors doubt prospect of future gains, and start selling

(4) in actual fact, however, the Bubble Crisis did not come about in this fashion, for the greed and stupidity of the South Sea Company Directors ensure that a crisis would ensue before investor expectations were changed

ii) **The role of Leverage and Liquidity:** this combination appears in almost all financial crises

(1) **Leverage:** acquiring an asset with only partial payment in cash, effectively borrowing the remainder, to acquire 'leverage'

- what we now call leverage was in this case, 'buying on margin': paying only 10% down in cash
- if a buyer agrees to buy a South Sea Company share for its par value of £100, but pays only 10% down, i.e., £10 in cash, he necessarily borrows the remaining 90% – £90 per share – from the stock broker, as a 'call loan': that is, the broker has the right to demand immediate repayment, at any time, 'on call'
- the broker holds the stock as collateral for the loan:
- and so long as its value continues to rise on the Stock Exchange the broker is happy to continue holding the stock, and to maintain the loan
- and if the stock price then rises just 10% to £110 a share, and if the buyer then sells those shares, he has doubled his investment: he receives a gain of £10 for his £10 investment, i.e., in this case a gain of 100%
- hence the concept of 'leverage'
- at this point of sale, the investor pays his broker the £90 per share owing on the call loan – and

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[29] See my lecture: *The South Sea Bubble of 1720 and its relationship to the current financial crisis: an old and still current story of greed, fraud, and stupidity*: presented to the lecture series *Breakfast with the Bulletin*, on *Market Meltdown, Economic Uncertainty,* in the Bennett Lecture Hall, Flavelle House, Faculty of Law, University of Toronto, 78 Queen's Park Crescent, Toronto: on Tuesday, 25 November 2008. The Power Point presentatation for this lecture and the Bulletin's webcast are available online, at: no. 2 on http://www.economics.utoronto.ca/munro5/ConferencePapers.html

everybody seems to gain (except, perhaps the person to whom the shares were sold

- obviously, continuous gains of this easy nature promoted and fuelled a stock market boom

(2) **The ensuing Liquidity Crisis:** when share prices fall

- Suppose now that the investor has not sold but continues to hold his stock, until prices cease to rise: inevitably triggering a fall in the stock price, under these 'bubble' conditions
- once the price begins to fall, the collateral loses its value – and the broker no longer wants to hold that stock
- The broker first contacts the stock-buyer (investor) to demand full payment of the balance (i.e., the full amount of the 'call loan'): i.e., beyond the value of the stock (collateral) held by and sold by the broker: for the stock buyer-borrower had pledged all his assets to cover the loan.
- If the broker does not receive immediate repayment, he will then sell the stock for whatever it will fetch on the exchange – and then demand repayment of the balance from the investor
- The investor, in agreeing to make the purchase with the 'call loan', has pledged all of his other assets as well, to cover the call loan.
- consequently such borrower-investors than had to sell perfectly good stock in order to pay the brokers' call loans
- as the quantity sold exceeds the quantity demanded for the stock, stock prices (or most stock prices) continue to fall.
- This may be regarded a financial form of Gresham's Law: i.e., bad stocks drive out good.[30]

(3) These features of leverage and liquidity crises appear in almost all financial crises: including the most recent one, of 2008-2009

iii) **How the South Sea Company produced the Bubble Crisis:**

(1) 'boiler room' activities: in the case of the South Sea Company itself, the directors were deliberately and artificially seeking to drive up share values, by highly unethical or illegal means:

- as a result, South Sea stock prices rose from a par value of £100 to over £1,000 a share

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[30] Gresham Law: Gresham's Law states simply that 'bad [cheap] money drives out good [dear].' Its supposed author, Sir Thomas Gresham (1519-79), an English advisor of Elizabeth I, merely articulated a commonplace observation about European monetary manipulations during the previous two centuries. In essence, this 'law' contends that anyone possessing two coins that had the same official exchange value but differed in their precious-metal contents would rationally choose to spend only the 'undervalued inferior' coin – debased, counterfeit, worn, or clipped, while selling the overvalued 'better' coin (or its bullion content) to those foreign mints offering a higher relative price. Taken from: John Munro, 'Gresham's Law', in Joel Mokyr, et al, eds., *The Oxford Encyclopedia of Economic History*, 5 vols. (Oxford and New York: Oxford University Press, 2003), vol. 2, pp. 480-81. For the online version of this Encyclopedia: http://www.oxford-economichistory.com/?&authstatuscode=202

- we now call this illegal activity ‘boiler room operations’
- consider that the preferred dividend of £5.00 per share meant indeed 5% for the par value of South Sea Co stock, at £100 a share, but only 0.5% when the stock purchase price is £1,000 a share

(2) **Why did the South Sea Company do so?** for the reasons just suggested, earlier:

- because an essential part of the plan to acquire the outstanding national debt was the conversion of those debt instruments into South Sea Company stock.
- therefore, the higher the value of the stock, the fewer shares would be surrendered or traded in acquiring the outstanding issues of national debt.

(3) Of course, all such speculative bubbles eventually have to burst when enough buyers and sellers come to realize that stock prices cannot continue to rise without some economic justification.

(4) **So many companies were marketing shares that the South Sea Company,** or its brokers, had difficulty selling its own new shares.

iv) **Then followed so-called Bubble Act of 1720,** ironically engineered by the directors of the South Sea Company itself, and act that triggered the events leading to its own downfall.

(1) **The Bubble Act: The South Sea Co. appealed to Parliament (the government, in effect) to pass a new law:** statute 6 George I cap. 18, thereafter always known as the ‘Bubble Act’

(2) that act restricted the right of marketing shares on the London Stock Exchange to only those companies possessing a legal charter of incorporation (from 24 June 1720),

(3) the statute also required those companies to operate only within the terms of their charter.

v) **Needless to say (as noted earlier), the South Sea Company did possess such a charter of incorporation,** as did also the Bank of England, East India Company, Royal African Company, Hudson’s Bay Company (as noted last day).

vi) **Most other companies trading on the stock exchange,** however, lacked such charters of incorporation, which, as noted earlier, were very difficult and expensive to obtain.

vii) **The crisis was directly precipitated by the South Sea Company itself,** in August 1720:

(1) when it brought a lawsuit under this new act (securing legal or court writs of *scire facias)*

- against some unchartered companies and companies with dubious charters (two insurance companies, with the South Sea Company’s complaint that their activities were in violation of these companies’ charters),
- but chiefly those whose shares were selling at a premium,

(2) The real reason, of course, was that these and other companies, through their own sales of shares, were drawing speculators away from buying South Sea Stock.

(3) That lawsuit sparked a panic, which led to massive sales of shares: within a month the prices of some of the accused companies fell as follows:

- York Buildings Insurance: from £305 to £30
- London Assurance: from £175 to £30;
- Royal Exchange Assurance: from £250 to £60.

(4) That led to a veritable panic on the London Stock Exchange, causing virtually all stock prices to fall, including shares in incorporated companies, and thus including the South Sea Company itself.

(6) Some examples of the sales of and fall in prices of good stocks:

- South Sea Company stock , which had reached a peak of £1050 in mid-summer 1720 had fallen to £180 by 28 September 1720,
- and while fluctuating thereafter, reached a low of £121 on 14 December 1720.
- Shares of the Royal African Company fell even more precipitously: from £200 to £45 in that period (and to just £25 by February 1721),
- Bank of England shares fell somewhat less sharply: from a peak of £265 to a low of £132.[31]

(7) As the graph indicates, by far the greatest rise in share prices – with a general rise in prices – was for the stock of the South Sea Company, with again irrational beliefs in continuous price rises to produce substantial capital gains.

vii) **But even without that lawsuit, a stock market crash was almost inevitable, for a simple and obvious reason that had escaped the attention of the South Sea Company officials:**

(1) investors in joint-stock companies without incorporation charters quickly realized that

- they would soon no longer be able to sell their shares through the London Stock Exchange, i.e., as publicly traded shares,
- and henceforth they would have do so 'over the counter', through private brokers;

(2) Thus their stock became far less negotiable, far less liquid, and thus far less desirable;

(3) So the 'smart thing' to do was to unload them quickly before the law was fully enforced.

viii) **Results: Financial panic and crisis in late 1720:**

(1) the stock-market underwent a severe and explosive crisis and suddenly crashed, evidently much more severely than the crash of Black Monday, October 1929 – let alone that of October 2008.

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[31] Statistics taken from Scott, *Joint Stock Companies*, vol. III, pp. 324-26; somewhat different prices are given in Dickson, *Financial Revolution*, Table 17, p. 139. See also Ann M. Carlos, Nathalie Moyen, and Jonathan Hill, 'Royal African Company Share Prices during the South Sea Bubble', *Explorations in Economic History*, 39:1 (January 2002), 61-87.

(2) Many, many powerful and rich investors were severely burned and they demanded a full investigation of the causes of the crash.

(3) That investigation, which began on 8 December 1720, revealed that South Sea Company officials had bribed government ministers and Members of Parliament, and other royal officials, as well as other corporations.

(4) and that in turn led to the fall of the government, and its replacement by Sir Robert Walpole (1676-1745), generally regarded as the Britain's first true Prime Minister, serving from 1721 to 1742.

(5) The South Sea Company itself then virtually collapsed:

(6) as the graph on the screen shows, its share prices fell from a peak of almost £1,000 a share, and plummeted to almost the par value of £100 a share.

ix) **The Bubble Act of 1720**: its future history

(1) Its subsequent importance thus concerns the way in which Parliament interpreted the provisions of the Bubble Act so very restrictively:

- by almost always refusing charters of incorporation to any potential joint stock companies;
- or by making it even more prohibitively expensive to obtain them.

(2) Thus: without such charters, joint-stock financing was illegal and impossible --

(3) and that thereby virtually eliminated this financial organization as a potential mechanism for financing fixed capital formation during the Industrial Revolution era.

(4) The only significant exception to be noted were the canal companies:

- which clearly served the public good,
- and also clearly required this form of financing, if canals were to be built and operated
- in any event, the creation of any canal company itself required private acts of Parliament:
- to grant them monopoly rights on their routes and also Eminent Domain, for confiscation of lands necessary for digging and constructing the canals
- thus adding on provisions for limited liability for investors was a virtually costless but necessary provision to attract buyers of the stock (i.e., attract capital).

(5) The Bubble Act remained in force until 1825.

(6) The reasons for its repeal we shall see later, when we return to the topic of British banking.

ix) **South Sea Company after the Bubble Act**:

(1) was subsequently reorganized to be merely a holding company, holding government stock.

(2) as noted earlier (n. 28), the South Sea Company succeeded in converting only £13.985 million during this financial operation (i.e. 44.3% of the proposal total for conversion: £31,580, 888)

f) **Pre-eminence of the Bank of England from 1721**:

i) **With its rival, the South Sea Company, eliminated as a competitor and then re-organized as a mere holding company, the Bank thereafter handled all new government borrowing:** all loan issues (except for a very few debentures issued by the Exchequer, as the table shows).

ii) **From 1720, all of the government loan issues, debentures,** were in the form of perpetual stock: without any maturity, though callable and redeemable on demand by the government.

iii) **The initial issues paid 5% interest; then 3% or 4%,** as shown in the table on the screen.

iv) **1721:** The Bank's own issue of 5% annuities followed by another issued of 3% annuities or perpetual stock marked the beginning of its new career in managing the national debt.

g) **The Conversion of the National Debt in 1749-52**: Pelham's Conversion and the Birth of the Consols [Consolidated Stock of the Nation]:

i) **Financial Re-organization of the National Debt with 'Pelham's Conversion':**

(1) **In 1749, the Chancellor of the Exchequer (i.e., the Finance Minister),** Sir Henry Pelham, implemented his plan to convert (eventually) all of the outstanding issues of redeemable government stock: chiefly in the form of 4.0% government perpetual stock:

- first into 3.5% government perpetual stock and then
- by 1757, into 3.0% stock,
- all fully negotiable, tradeable on the London Stock Exchange

(2) The composition of the long-term redeemable National Debt in 1749:

- was £70,441,296: of which 27.75 percent (£19,549,484) was in the form of debts owed to the Three Sisters (of which the Bank of England itself held 11,686,800, as noted earlier).
- The Bank of England and the South Sea Company, reorganized as holding company after 1721, also managed 69.90 percent of the debt (£49,241,891) in perpetual stock, Old and New Annuities.
- The Exchequer accounted for the small remaining portion: 2.34 percent (£1,649,821).

(3) Because of prior national debt conversions undertaken by the South Sea Company, the national debt now had just three components in terms of interest-bearing securities:

- those at 3.0 percent, accounting for 17.52 percent of the total (£12,337,821);
- those at 3.5 percent, accounting for just 0.57 percent (£400,000 - by the Exchequer);
- and by far the largest proportion, 81.92 percent, in 4.0 percent stock and South Sea Annuities.
- this can be seen more conveniently in the following table:

The Composition of the national debt in 1749: **On the eve of Pelham's 3% Conversion**

A. Debt Owed Directly to the Three Corporations	**Millions of Pounds**	**Subtotal**	**Percentage of the Total**
1. Bank of England	11.7		16.6%
2. East India Company	4.2		6.0%
3. South Sea Company	3.7		5.3%
Subtotal	**19.6**	**19.6**	**27.8%**
B. Debt (Government Stock) as Managed by:			
1. Bank of England	25.6		36.4%
2. South Sea Company	23.6		33.5%
Subtotal	**49.2**	**49.2**	**69.9%**
Total of A and B: by the 'Three Sisters'		**68.8**	**97.7%**
Loans Managed by the Exchequer	1.6	1.6	**2.3%**
TOTAL PUBLIC DEBT		**70.4**	**100.0%**

(4) The first step of Pelham's Conversion, undertaken in 1750, was

- to convert those 4.0 percent securities, amounting to £57,703,475, into 3.5 percent perpetual but redeemable stock, the Consolidated Stock of the Nation, popularly known thereafter as 'Consols'.
- He succeeded in converting 87.95 percent (£50,750,649),
- thus leaving 12.05 percent (£6,952,826) for intense and bitter negotiations with the South Sea Company, which held almost all of this remainder (after the East India Company had capitulated in

April 1750).

(5) The second and final step was the conversion of remaining stock on Christmas 1757

- of the new 3.5 percent Consols into 3.0 percent Consols in 1757;[32]
- in achieving this manoeuvre, the government and South Sea Company finally agreed that the Company's 4.0 percent stock would also be converted into 3.0 percent Consols at Christmas 1757.[33]

(6) Pelham succeeded in achieving this conversion with the implicit though unofficial promise that the government would not call this stock for redemption for many years to come (most assumed for at least 30 years) -- and thus it would guarantee the interest rate for that period.

iii) **Again, as in past similar circumstances, the holders of Consols would make a satisfactory gain in accepting the conversion:**

(1) by converting their higher-yielding but callable securities into lower-yielding but non-redeemable and presumably 'perpetual' securities for at least 30 years.

(2) In fact they remained perpetual for about 135 years; they were not 'called' until 1888 [with a similar financial manoeuver on the part of the Exchequer, known as 'Goschen's Conversion'] [34].

(3) As a perpetual annuity, with a guaranteed annual coupon, a very attractive long-term investment, especially for those who anticipated future declines in the interest rate.

iv) **By 1752**: Pelham's had completed his mission, with the conversion of 15 separate national debt issues into one consolidated debt issue, called 'Consolidated Stock of the Nation', or popularly 'Consols,' the term used to this day.

v) 1757: to repeat the final aspect of the conversion: 3.5% rate was further reduced to 3.0%

v) **Interest Rate**:

(1) 3.5% until 1757, when it dropped to 3%;

(2) it remained at 3% from 1757 to 1888, when a new conversion (known as 'Goschen's Conversion) succeeded, in the same manner as the 1750-52 Conversion, in reducing the rate to 2.75%,

(3) The statute for that conversion stipulated as well that, in 1903, the rate was to drop to 2.5%.

(4) The act also stipulated that 5 April 1923 was the earliest date on which these new Consols could be

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[32] *Ibid*., table 26, p. 232, table 29, p. 239, table 30, p. 242.

[33] The South Sea Company was allowed to borrow £2.1 million at 3% in order to discharge the unsubscribed South Sea annuities, totaling £2,276,894. See Dickson, *Financial Revolution*, p. 240.

[34] In 1888, Goschen converted the 3.0% Consols (in effect, redeemed them) into 2.75% Consols; and in 1903, into 2.5% Consols, the rate that has been maintained to this day. With severe deflation and falling interest rates, 3% Consols were then (1888) trading well above par.

redeemed – and they were not redeemed, in fact.

(5) from 1903 to this very day the rate has remained at 2.5%.

vii) **Current value of 2.5% Consols (one of the 'Gilts' - gilt-edged securities):** [35]

(1) With a par value of £100, this 'gilt' is currently (24 October 2012) valued on the London Stock Exchange:

@ £66.09 per share (2.5% Consol), for a yield of 3.78%

(2) Recent valuations of 2.5% Consols on the London Stock Exchange:

Current Prices and Yields on British 2.5% Consols as Traded on the London Stock Exchange

To obtain the current yield, divide the coupon (2.5) by the market price

Date	Market Value	Yield
October 2012	£66.09	3.78%
March 2012	£63.85	3.92%
October 2010	£56.80	4.40%
March 2010	£50.53	4.95%
October 2008	£54.69	4.57%
March 2008	£55.14	4.53%
October 2007	£54.58	4.58%
March 2007	£54.79	4.56%
October 2006	£60.04	4.16%

[35] To obtain a web quotation on the current market value of Consols go to the Financial Times, and look for Markets & Funds Data/Bonds & Rates/UK Gilts : http://news.ft.com/markets/gilts.
Or: http://markets.ft.com/ft/markets/reports/FTReport.asp?dockey=UKG-281008.
Also on my Home Page (Other Web resources)

Date	Market Value	Yield
March 2006	£59.43	4.21%
October 2005	£57.37	4.36%
March 2005	£53.50	4.67%
October 2004	£54.05	4.63%
March 2004	£51.85	4.82%
October 2003	£47.73	5.24%
March 2003	£51.16	4.89%
October 2002	£52.04	4.80%
March 2002	£47.21	5.29%
October 2001	£51.15	4.89%
March 2000	£52.85	4.73%
October 1999	£47.29	5.29%
March 1999	£53.037	4.72%
October 1998	£48.250	5.18%
October 1997	£37.906	6.60%
October 1996	£31.688	7.89%

(3) Why the difference over the past sixteen years?

- Because interest rates have fallen considerably from what they had been in 1996, though not continuously, as the table shows;
- In fact the current yield or real interest rate on Consols is the lowest recorded over these 16 years: thus contradicting macro-economic assumptions about the long term costs of a huge overhang in public debts.
- Note the inverse relationship: the higher the current interest rate, the lower the market value of the security (to equalize yields amongst securities); and the lower the rate, the higher is the market value of the Consols: and you will see that market value of Consols has never been higher, over these past 16 years, than today.

viii) **The marketing of these Consols was handled by the offices of the Bank of England, the South Sea Company (reorganized), and the East India Co:** who were collectively called the Three Corporations (Three Sisters).

ix) **Importance of Consols for the London Stock Exchange**

(1) indeed the chief business of the London Stock Exchange, from the 1750s until the Repeal of the Bubble Act in 1825, again permitting joint-stock company shares to be traded, was trading in consols, and in Bank of England, East India Co., and South Sea shares;

(2) all of these, directly or indirectly, were forms of government debt.

(3) Up until World War I, Consols continued to account for the overwhelmingly largest share of the British national debt.

(4) But thereafter their importance fell sharply with new post World War I financial instruments.

(5) And their role on the London Stock Exchange today is now very minor

x) **The Importance of Consols for English and British capital investment: their economic advantages (especially over interest-bearing bonds):**

(1) readily negotiable, on the London and Amsterdam stock exchanges: while most bonds were not

(2) no maturity date: thus one could be assured of a stable, life-time income

(3) they were very popular because

- they were risk-free (the yield represents the pure rate of interest), with guaranteed annual coupon (interest) payments
- they were so readily negotiable, at home and abroad (on international exchanges)

(4) They therefore helped to popularize and greatly expand the activities of the London Stock Exchange, to become the world's leading capital market

- especially after the Bubble Act restrictions
- trading in consols and other forms of virtual government debt (Bank of England, East India Co, South Sea Company shares) became the overwhelmingly dominant activity of the London Stock Exchange, until the coming of railroads, in the 1830s

(5) They therefore served, for so many merchants, businessmen, and industrialists, as the prime *collateral* to be offered banks and other financial institutions in securing long-term loans.

(6) consols, as annuities (*rentes*) were not subject to the usury laws,

- because they were not interest-bearing bonds:
- the usury laws, not abolished until 1854, had set the interest rate ceiling at 5% (from 1711, as noted earlier).

(7) By the time of Pelham's Conversion – and indeed well before – the nominal interest rate had, however, fallen well below this 5% limit:

(8) but the actual yields on Consols could, of course, vary, as seen on the table

8. **<u>Contributions of Bank of England to the 18th Century English Economy</u>**

a) **Management of the National Debt and Interest Rate**:

i) **The Bank created a widespread, effective, well-organized capital market for government borrowing,** in which the population had full confidence.

ii) **Note that the Bank of England itself held an important share of the national debt:** £11.7, or 17% of the total debt in the 1750s.

iii) **key point is the very sharp reduction in the rate of interest on government borrowing:** from 14% in 1693 to 3% in the 1750s:

(1) To a considerable extent, this represented the ability of the Bank of England (or Three Corporations or 'Sisters' collectively) to organize the capital market and inspire public confidence:

(2) i.e., the ability to sell and trade in government stock, to pay out interest promptly, etc.

iv) **The Bank of England did not provide the only the reason for the reduction in that interest rate,** but certainly it provided a primary reason in eliminating all risk and uncertainty for investors.

v) **This tremendous reduction in interest rates on government borrowing was a major factor in reducing the general level of interest rates,** as several historians (Ashton, Dickson) have commented: in making it so much cheaper and easier for private businesses to borrow.

vi) **To be sure, the two capital markets were not identical:** but they certainly did overlap in competing for the same source of funds from those could make alternative choices on investing.

vii) **In sum, the Bank of England helped to reduce 'crowding out', as it is now called.**

(1) The government was almost always the chief and overwhelming borrower in the capital market; and when it needed funds to defend the country, it would borrow no matter how high the interest, no matter what the cost, as shown in the 1690s.

(2) The importance of government financing, especially for warfare, can be seen in table on the screen, with the tremendous growth in the volume of the national debt during the 18th and 19th centuries: from £14.2 million in 1700 to £244.0 million in 1790 (before the Napoleonic Wars) to £775.7 million in 1850.

Unredeemed British Public Debt, in Decennial Years, 1700 - 1910

In Millions of Pounds Sterling

Date	Funded Debt in £ millions	Unfunded Debt in £ millions	TOTAL DEBT IN £ MILLIONS	Percentage Change over last decade
1700	4.7	9.4	14.2	
1710	7.3	14.1	21.4	+50.7%
1720	49.8	4.1	54.0	+152.3%
1730	47.4	4.0	51.4	-4.8%
1740	43.3	4.2	47.4	-7.8%
1750	72.8	5.2	78.0	+64.6%
1760	97.6	4.2	101.7	+30.4%
1770	128.6	2.1	130.6	+28.4%
1780	156.1	11.2	167.2	+28.0%
1790	234.6	9.4	244.0	+45.9%
1800	411.4	22.6	434.0	+77.9%
1810	567.7	39.7	607.4	+39.9%
1820	798.5	41.6	840.1	+38.3%
1830	772.6	25.5	798.2	-5.0%
1840	768.0	20.6	788.7	-1.2%
1850	775.7	17.8	793.5	+0.6%
1860	789.7	16.3	806.0	0.016
1870	741.5	6.8	748.3	-7.2%

Date	Funded Debt in £ millions	Unfunded Debt in £ millions	TOTAL DEBT IN £ MILLIONS	Percentage Change over last decade
1880	710.5	27.3	737.8	-1.4%
1890 *	586.0	32.3	618.2	-16.2%
1900	552.6	16.1	568.7	-8.0%
1910	614.9	62.5	677.4	0.191

***** This reduction was in part due to Goschen's conversion of 3% Consols into 2.75% consols in 1888: in that not all of those redeemed were converted into the new consols.

Source: B.R. Mitchell and Phyllis Deane, eds., *Abstract of British Historical Statistics* (Cambridge, 1962), pp. 401-02.

viii) **Certainly other factors also contributed to that fall in the interest rate,** despite the ballooning of government debt: commercial expansion, growth of banking and financial institutions; but even there the importance of the Bank of England has to be acknowledged.

c) **Other Positive Contributions of the Bank of England**:

i) **To follow on from the preceding topic: its great achievement was its role in completing the English Financial Revolution, with Pelham's Conversion of 1749-57:**

(1) To be sure, the English did not invent the concept and the basic institutions of the modern European Financial Revolution, which was imported almost fully developed from the Dutch Republic (Republic of the United Provinces), by the Dutch-born king William III, husband of Mary II (daughter of the deposed James II), following the Glorious Revolution of 1688.

(2) And, as argued earlier, that financial revolution was medieval in origins, beginning in the towns of northern France and Flanders in the 1220s, in response to the newly intensified anti-Usury campaign

(3) But the English perfected this system, improved it well beyond the Dutch model, or anything similar then found in France, Spain, Germany, etc.

(4) The most important achievement was in basing the permanent, funded, national debt entirely upon perpetual annuities, and converting them all into the Consolidated Stock of the Nation – Consols – freely marketed on the London, Amsterdam, and other stock exchanges.

(5) In the Dutch Republic, France, and elsewhere the permanent funded national debts were a

a greater mixture of annuities and bonds or loans

(6) In term of just annuities or *rentes*, the public debts of continental countries were much more a

combination of life annuities (or *rentes*, *renten*) and perpetual annuities, of which the life-annuities were far less marketable or negotiable than perpetual annuities for many reasons.

- perpetual annuities by their very nature were always inheritable and as such transferable in ownership, and thus by their nature far more marketable
- life-annuities were by their nature tied to one specific life, and thus expired or were extinguished on the death of the holder (or spouse, or in some cases, one child), whereas perpetual annuities were never extinguished by anyone's death, and only by redemption at the command of the issuer

(7) Historically, perpetual annuities (for all these reasons) were cheaper for the government issuers: paying a return normally only half that for life-annuities.[36]

ii) **Issuing stable paper money as legal tender**:

(1) The Bank did establish a stable and fully acceptable medium of exchange in its printed banknotes, which became legal tender:

(2) in fact the only form of paper credit that fully met all the essential criteria for true money;

(3) and a stable currency, at least until 1797, with the era of the 'Paper Pound' (to 1815)

iii) **Serving as the Bank or Lender of Last Resort**:

(1) By its rediscounting facilities, the Bank did provide valuable assistance for London's private banking community;

(2) and certainly proved far more effective than Amsterdam's Wisselbank in assisting these banks in time of crisis;

(3) After 1797, the Bank of England became even more effective as the 'Lender of Last Resort', by extending the general privilege of discounting to all financial institutions (i.e., not just to client banks, as in the past).

iv) **Transaction Costs and Government Financial Services**:

(1) the Bank provided the government with efficient, low cost services

(2) in managing payments, effecting remittances and transfers, in supplying short-term lending (in discounting Exchequer Bills, etc.).

v) **Consols:** consider again their very important role in the British economy during the second half of the 18th and during all of the 19th century (until World War I): especially in serving as collateral for lands (instead of land in mortgages)

d) **Negative Aspects of the Bank of England**:

i) **Its monopoly on joint-stock banking**:

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[36] For proof of this, see my publications cited in nn. 9, 12, 19 above.

(1) from 1694 (clarified or re-emphasized by statute in 1709): in restricting other English banks to being six-member partnerships: limiting size and capitals.

(2) In a sense, the Bubble Act of 1720 virtually neutralized that monopoly by preventing the subsequent formation of joint-stock companies (thus including banks) that did not have charters of incorporation.

(3) Therefore, the subsequent end of the Bank of England's monopoly required the repeal of both the Bubble Act (in 1825) and these provisions on joint-stock banking (in 1826).

(4) We shall see the reasons for this when we come back to the topic of British banking in the 19th century: or rather, from 1815 to 1914.

ii) **Its reluctance to assist non-client banks**: before the 1797 financial crisis.

iii) **Very high denomination bank notes, until the 1790s.**

iv) **Its refusal to establish any branches**: outside London (until 1833).

v) **Nevertheless, on balance, the positive features of the Bank of England outweighed these negative aspects.**

7. Development of Country Banking During the Industrial Revolution

a) **The term 'country banking':**

i) **country banking refers not to rural banking,** but to all banking outside of London, most of which was in fact urban.

ii) **The distinction is thus the age-old one in England, between 'city and country':**

(1) London and the rest of England: originally, between 'court and country': i.e., the royal court, with the crown and Parliament, was of course located in London.

(2) but all the more so when London was the overwhelmingly largest city.

b) **Concentration of Banking in London:**

i) **Until the very eve of the Industrial Revolution,** almost all banking in England was in fact almost totally concentrated in the city of London.

ii) **The first bank to be formed outside London was at Bristol,** as late as 1716.

iii) **By 1760,** on the eve of the Industrial Revolution, there were only about a dozen 'country banks' in operation.

b) **Thereafter, country banks were formed in rapid profusion**:

i) **by 1780,** 100 had been formed.

ii) **by 1800,** 370 banks;

iii) **and by 1825,** over 600 such banks.

iv) **That explosion in country banking was simply in response to the needs of industrialization:**

(1) thus the reason why so few banks had been formed before then is simply the fact that they were not needed before the Industrial Revolution.

(2) That such banks were formed so readily and so quickly with the onset of industrialization, and by those engaged in that Industrial Revolution, demonstrates, in effect, how the Industrial Revolution provided its own capital formation.

iv) **These new banks were created all over England,**

(1) but chiefly of course in the new industrial districts

(2) to meet local needs for banknotes, for working capital, and for remitting funds to other cities or overseas.

v) **Most of them were formed by merchants engaged in regional or foreign trade,** by grain and cotton merchants;

vi) **but some also by industrial entrepreneurs themselves,**

(1) especially in the textile and iron industries (e.g., Arkwright in cotton, Boulton in iron);

(2) some were also formed by the new canal companies;

(3) some by tax collectors, etc.

vii) **The formation of such country banks to provide the working capital needs of industrialization was – to repeat a very key point – one of several ways in which the Industrial Revolution,** in effect, provided its own capital needs.

c) **The Financial Functions of the Country Banks**: **in providing both the lubricants and fuel for industrialization,** essentially in the manner examined in our previous discussion of London banking (i.e., the Goldsmiths):

i) **especially in discounting bills,** promissory notes, commercial paper, usually for 90 days, usually for working capital needs

ii) **straight loans**:

(1) typically also for three months, but sometimes longer;

(2) usually in the form of overdraft privileges (allowing the borrower to write cheques for sums greater than those deposited in his account).

(3) Some of these loans were continually renewed so that in fact such banks were really financing fixed capital formation (plant and machinery)

iii) **Country banks were especially important for their note issues**:

(1) because Bank of England notes had two major problems: as noted earlier

- they did not readily circulate outside of London, because they could not be cashed except through

London banks dealing with the Bank of England

- and B of E banknotes were of such high denominations before 1797.

(2) Thus the country banks rendered great service in helping the industrial economy overcome that chronic shortage of coin during the 18th century.

d) **The Role of the London Banks with Spread of Country Banking**:

i) **London banks served a vital role as the keystone of the arch,** so to speak: in serving as transfer agents for the new country banks, thus creating and integrating a national financial network.

ii) **London banks were especially important in transferring surpluses from agricultural areas,** where deposits usually exceeded loans, to the new industrial areas, with a shortage of deposits to generate necessary loans.

iii) **Thus the London banks could re-lend those agricultural surpluses:** to banks in industrial areas.

e) **Weaknesses of the Country Banks**: chiefly lay in their small size

i) **Their Structure as Six-Member Partnerships or Family Banks:** without joint-stock privileges

(1) These country banks were legally restricted in organization and size to six-member partnerships

(2) Initially, from 1694, that restriction came from the Bank of England's monopoly on joint-stock banking (reinforced by provisions of the Bank Act of 1707).

(3) The Bubble Act of 1720, as just noted, also made it impossible for English banks to organize as joint-stock banks, even if the Bank of England had not enjoyed that monopoly on joint-stock banking

(4) Therefore, as also just noted, the removal of this major impediment meant the removal of both legal restrictions:

- First, the Repeal of the Bubble Act in 1825, to permit anew the formation of joint-stock companies
- The repeal of the Bank of England's monopoly on joint-stock banking, the next year: 1826

(5) The consequence for most of the new country banks that developed during the Industrial Revolution era:

- grossly inadequate capitalization,
- since few family firms of six-member partnerships were able to raise sufficient capitals, in the short run.

ii) **Although this restriction also applied to the London banks, it was not such a problem for them:**

(1) For those London banks had had more than a century to build up their capitalizations before the coming of the Industrial Revolution: i.e., from their formation in the 1660s to the 1760s, the even of the Industrial Revolution in England

(2) Many were able to grow to far larger sizes, with commensurately larger capitals, by a combination of profit reinvestment and acquisitions

(3) and during that time, the weaker ones had been weeded out by market forces: usually by buy- outs and amalgamations with larger goldsmith banks.

iii) **But for the new Country Banks, developing with the Industrial Revolution, it was impossible for them to build up large capitals in so short a period of time:**

(1) on average these new banks had only 20% to 35% of the capitalization of the older London banks (1/5 to 1/3).

(2) So the financial demands on their services, with rising industrial needs, meant that many were placed under great stress that threatened their reserves and thus their existence.

iv) **That small size and small capitalization meant a constant danger of bankruptcies**:

(1) the obvious danger that any one small bank might extend too much credit unwisely, or discount too many bad notes, to just a few individual firms whose default could bring down the bank.

(2) Old saying:

- If you owe the bank $1,000 you are in trouble;
- if you owe the bank $1 million, the bank is in trouble.

(3) A form of Gresham's Law in banking ('bad money drives out good') could ensue.

- The failure of just a single bank could cause a panic leading to a general run on the all banks in a district:
- as depositors vainly tried to withdraw all their funds in cash, to redeem banknotes for cash, the result would be a wave of bankruptcies, since no bank carried 100% cash reserves.

(4) So far as we can ascertain, for this era, the normal reserve ratio was about one-third.

(5) That precise catastrophe did occur in industrial Lancashire (cotton factories) in the 1770s, wiping out banking there for a full generation.

v) **As we have seen, not until 1797 did the Bank of England extend the privilege of rediscounting** (to shore up cash reserves) to such banks.

f) **For England finally to achieve banking stability, several more financial crises would have to occur**:

(1) a most drastic one, finally, in the 1820s that forced a reform in banking legislation.

(2) That reform was based essentially on Scottish banking, a superior system, to which we now turn.

8. <u>Scottish Banking During the Industrial Revolution</u>

a) **How and why did Scotland develop a superior banking system?** [37]

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[37] For the peculiar advantages that Scottish businessmen enjoyed, see Arthur Herman, *How The Scots Invented the Modern World* (New York: Three Rivers Press, 2001), especially chapter 12: 'Scots in Science

i) **Note: Scotland maintained a somewhat separate system of commercial law**

(1) when Scotland joined England, by the Act of Union of 1707, Scotland kept its own commercial law,

(2) and was thus exempt from English commercial law, including the English restrictions on banking and business organization;

(3)The Scots had a different partnership law, which did not so restrict the number of partners.

ii) **Scottish Joint-Stock Banks before the Industrial Revolution,**

(1) Scotland had established not one but three limited-liability joint-stock banks, and two more after;

(2) and that was in great contrast to England's one and only joint-stock bank, the Bank of England.

(3) The first three Scottish joint stock banks were all located in Edinburgh:

- The Bank of Scotland (1695), formed at same time as Bank of England;
- Royal Bank of Scotland (1727); and
- The British Linen Company Bank (1746), originally created to foster the textile industries.

(4) In the early 19th century, two more joint-stock banks were created:

- the Commercial Bank (1810);
- the National Bank of Scotland (1825).

iii) **The other private commercial banks were not limited in size to six-member partnerships,** as were English banks (though these Scottish banks were legally also partnerships).

(1) Thus the Bank of Aberdeen, for example, had over 400 partners, making it for all intents and purposes a large joint-stock company.

(2) Hence, these Scottish banks with unlimited partners could amass very large capitals, build up large clienteles, and maintain very healthy reserves.

iv) **Their chief asset lay in the development of branch banking**: which is a topic in itself, to which we now turn.

b) **Evolution of Branch Banking in Scotland**:

i) **the predominance of the Edinburgh banks:**

(1) initially the three Edinburgh joint-stock banks tried to confine Scottish banking to that city;

(2) but their quasi-monopolistic attitude served only to encourage formation of competing banks outside Edinburgh, during the 18th century: especially in Glasgow, Aberdeen, Perth.

ii) **The Edinburgh joint-stock banks,** with their large capitals, then retaliated by establishing branches in

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and Industry', pp. 320-44. The author (PhD Johns Hopkins) is co-ordinator of the Smithsonian Institution's Western Heritage Program, and formerly Professor of History at George Mason University and Georgetown University.

those cities to compete with the new banks;

iii) **and some of the larger non-Edinburgh banks responded in turn by establishing their own branches,** in Edinburgh and elsewhere.

iv) **By 1800:** this competition between the larger banks in branch-banking had led to the proliferation of banking networks throughout Scotland:

(1) the Bank of Scotland led the way with 27 branches; [38]

(2) the British Linen Co. Bank was second with 17 branches;

(3) the others had three or more branches each, on average.

(4) Remember that the Bank of England had no branches: just the one bank in London.

c) **Importance of the Scottish Branch Banking System**:

i) **pooling reserves:** permitted all the branch members of one company to pool their reserves, so that if one branch ran into difficulties, the main office could rescue it by calling on the aggregate reserve.

ii) **That branch system of course was only made possible by large capitalizations,** without restrictions on the size of Scottish banks.

iii) **In contrast to the recurrent bank failures in England,** very few Scottish banks failed.

iv) **The only important Scottish bank to fail was the Ayr bank (1772),**

(1) which significantly had no branches;

(2) and the others that failed were also small partnership banks without branches (i.e., like the English).

v) **Many that failed were in fact absorbed into larger banks,** before the creditors and depositors were in danger of losing their assets.

vi) **Compare the Canadian and American banking experiences during the Great Depression of the 1930s, 'the dirty thirties':**

(1) the Canadian system with branch banking had no failures;

(2) the American banking system, in sharp contrast, with a ban on branch-banking beyond state borders, suffered the loss of almost 3,000 small banks, chiefly rural.

(3) that in turn brought about a horrendous contraction, implosion of credit, in the 1930s

(4) which in turn produced a steep and stark deflation in the American economy,

(5) which in turn sharply raised the costs of servicing previous debts: an enormous catastrophe.

(6) Consider the difference between the Canadian and American banking systems in the recent economic crisis, of 2008-2009:

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[38] Not to be confused with the Royal Bank of Scotland, formed in 1727.

- with our system of a few, very large scale chartered banks, with thousands of branches
- with the American system of far fewer large banks with branches, and limitations on inter-state banking.

d) **English banking had to wait until the drastic financial crisis of the 1820s**:

i) **In the early 1820s, dozens of English country banks failed,** forcing Parliament finally to heed petitions for changes in the banking law:

ii) **the major change:**

(1) To repeal the Bubble Act in 1825: thus permitting formation of joint stock companies

(2) **to abolish the Bank of England's monopoly on joint-stock banking,** in 1826: and

(3) thus, to permit other English banks to follow the Scottish system.

9. **<u>Financial Institutions and Capital Formation During the Industrial Revolution</u>**

a) **Limited Role of English Financial Institutions**: for reasons already seen

i) **Joint-Stock Financing**: played a limited role, between the 1720 Bubble Act and its 1825 Repeal.

(1) As noted earlier, the Bubble Act forbade any company to market shares without a legal charter of incorporation:

(2) So traumatic was the South Sea Bubble and financial crash that Parliament thereafter was extremely reluctant to grant charters of incorporation, which were enormously costly to obtain:

(3) far too costly for any small firm to engage in incorporation.

(4) As also noted earlier, the only significant exception were the canal companies:

- clearly they served the public good generally and were urgently required;
- and clearly they could be financed only by joint-stock companies: raise capital only by the sales of shares of ownership (stock)

(5) But the canal companies, by virtue of their natural monopoly status -- you cannot have two canals connecting points A and B --

- themselves necessarily had to be authorized and created by their own private acts of Parliament, which provided monopoly rights-of-way and Eminent Domain for confiscation of the lands necessary for the canal construction, as noted earlier.
- which thus normally included charters of incorporation, offering limited liability for shareholders

ii) **Private commercial deposit-banks**:

(1) as noted, such banks largely restricted their financing to discounting and short-term loans, to provide just working capital needs;

(2) and that was true also of Scotland.

(3) See the previous discussion of the 'Real Bills' doctrine to understand why this was so.

(4) Recent research, however, has shown that in both the cotton and iron industries, some banks did provide much longer term loans,

- though principally by rolling over or renewing shorter-term loans;
- in so doing, they helped to finance fixed capital formation in plant and machinery.
- Just the same, that remained a small and limited role throughout most of the 19th century.

(5) We will come back to British banking in the late 19th century to see some exceptions.

iii) **Mortgage and Insurance Companies**:

(1) these companies apparently played a much larger role in financing fixed capital formation:

- in supplying long-term loans on the security of property and capital assets
- i.e., the property served as the collateral for the loan.

(2) Large growth in mortgage-financing from the late 17th century;

(3) but this topic still not yet been well researched.

b) **The Private Industrial Firm was itself the chief source of capital**:

i) **a firm initially raised its capital by pooling family savings,** and those of its partners (and families).

ii) **then it secured more capital by borrowing money through mortgages:** i.e., by borrowing funds using land or other forms of real estate as collateral

iii) **personal loans were also very important**:

(1) for the cotton industry, its leading historian, Stanley Chapman, has shown that for one particular firm in 1815 personal loans from 97 creditors supplied £36,000

(2) for an average loan of £371 from each creditor

iv) **the firm then received its working capital needs from private banks,** usually through discounting commercial paper, as was demonstrated several times before.

v) **subsequent growth in capital stock would be financed largely by profit reinvestment**:

(1) by 'ploughing back' profits (i.e., by deliberately forgoing current consumption: an example of the 'Protestant ethic', as in the Weber-Tawney thesis?), which often accounted for more than half of investment funds in these industrial concerns.[39]

(2) Opportunity Cost of profit re-investment: the yield on consols, as the forgone interest income from

[39] This subject was covered in my lecture on religion, culture, and the Dissenters in 18th-century England, necessarily involving the Weber-Tawney thesis on 'Protestantism and the Rise of Capitalism:' week two (19 Sept 2012), lecture no. 3.

investing those profits in government securities.

c) **Was the Industrial Revolution Self-Financing?**

i) **If profit reinvestment was or became the principal source of fixed capital formation,** or even if it became just a leading source,

(1) then one could argue indeed that the Industrial Revolution was largely self-financing;

(2) or at least that capital formation was more a consequence than a prior cause of the Industrial Revolution.

(3) I have already cited the formation of the Country Banks as an example of this phenomenon.

ii) **We may further argue, in this respect, that capital formation was necessarily dependent upon general economic growth and industrial development:** in terms of market expansion, technological change (to cut costs more rapidly than prices), creation of financial facilities.

iii) **Nevertheless, there were clearly areas where some prior capital formation was necessary, and necessary in large amounts**:

(1) in transportation, especially: in shipbuilding, canals, highways; and from the 1830s especially, in railroads.

(2) in mining and metallurgy: as we shall see, with innovations in iron smelting and refining, that meant quantum leaps in industrial scale.

d) **Levels of Capital Formation During the Industrial Revolution**

i) **Many years ago the American economist W. W. Rostow argued that for any economy to achieve 'take-off' into modern industrialization,** with self-sustained growth, its level of capital formation had to rise to at least 10% of Net National Product (NNP = NNI). [40]

ii) **Subsequently, however, the British economist Phyllis Deane disputed this:** [41]

(1) she contended that this condition was certainly not relevant to the 18th-century British Industrial Revolution.

(2) According to her analyses, it began with surprisingly low levels of capital investment:

- from 1700 to the 1760s, just 3% to 5% of NNI,
- rising to perhaps 6% by the 1780s,
- and to no more than 8% of NNI by 1800, still well below the 10% mark.

(3) In her view, that 10% barrier was broken only by the coming of the railroad in the 1830s: the first heavy

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[40] W. W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto* (Cambridge, 1960).

[41] Phyllis Deane, *The First Industrial Revolution* (London, 1965).

industrial consumer of capital.

iii) **More recently (1978), however, another British economist,** Cambridge's Charles Feinstein, has produced an entirely different set of figures which may (or may not) suggest another scenario. **A summary of his estimates are shown in the table on the screen:**

Feinstein's Estimates of Gross Domestic Capital Formation in England, 1771 - 1850

Annual Means Per Decade in £ Millions

Decade	G.D.C.F.	as % of GDP	Gross Domestic Product
1771-80	7.05	7%	100
1781-90	11.12	10%	110
1791-1800	14.31	11%	135
1801-10	16.57	10%	160
1811-20	20.51	10%	200
1821-30	28.29	10%	275
1831-40	38.59	11%	365
1841-50	49.43	11%	450

Source: Charles Feinstein, 'Capital Formation in Great Britain,' in Peter Mathias and M. M. Postan, eds., *Cambridge Economic History of Europe*, Vol. VII: *The Industrial Economies*, part i (Cambridge, 1978), Tables 6 and 28, pp. 40, 91.

Note the following:

(1) His figures show a rise in capital investment from 7% in the 1770s to 10% in the 1780s, thus indicating some support for the Rostow hypothesis.

(2) However, his figures also include capital investments in housing, which are excluded from Phyllis Deane's estimates.

(3) Furthermore, and more importantly, his statistics are expressed in *gross* terms (vs. Deane's net terms): i.e., gross domestic capital formation as a percentage of gross domestic product.

- So his investment estimates include large amounts for replacement of depreciated, worn-out, or obsolescent capital stock.
- If such replacement had been between one third and one half, as later figures suggest, that could mean very low levels of net capital formation, in terms meant by Phyllis Deane (and Rostow had also meant net capital as percentage of NNI).

(4) But Feinstein's figures also suggest that the railroad provided no great breakthrough in capital formation: that the level did not really change appreciably with railway investments from the 1830s (from 10% to 11%, but back to 10% by 1850s.

v) **Relatively Low Levels of capital formation in the 18th century**: however, do not reflect any real shortage of savings in the economy.

(1) The growing volume of potential savings, of large surplus, is evident certainly from signs of growth and surplus in the agricultural, commercial, and financial sectors of the economy.

(2) If the level of capital formation was low during the Industrial Revolution era, that may reflect the following:

vi) **Possible reasons for low levels of capital formation during the early phase of the Industrial Revolution:**

(1) the imperfections in the capital market:

- common-law restrictions on size of partnerships;
- the impact of legislation: the Bubble Act in particular. for the period 1720 - 1825
- Bank of England’s restrictions, as noted already

(2) The very modest needs for fixed capital during the first phase of the Industrial Revolution: i.e., apart from mines, smelters, canals.

- In the cotton industry especially, and similar ones, the amount of plant and machinery needed was small (indeed many cotton producers simply rented space in a factory),
- and cheap to build and maintain.

iii) **Chief features of capital formation in this stage of the Industrial Revolution**:

(1) far more productive and intensive use of capital, as a result of technological and entrepreneurial innovations,

(2) rather than increases in the absolute level of capital formation.

APPENDICES:

BILL OF EXCHANGE OR ACCEPTANCE BILL

- developed by Italian merchants engaged in long-distance trade (from late 13th century)

PRINCIPAL - AGENT RELATIONSHIPS

(1) PRINCIPAL A: in home city

- **lends money or sells goods on credit to**

(2) PRINCIPAL B: in home city

- **borrows the money or buys the goods from Principal A**
- **sells a Bill of Exchange to Principal A, and in so doing**
- **'draws' the bill for payment on Agent B, in a foreign city, where he maintains a bank deposit account**

(3) AGENT A: in the foreign city

- **receives a copy of the bill from his Principal (A)**
- **presents the bill for 'acceptance' to Agent B, and thus obtains his agreement to honour the bill on the stipulated date of maturity**

(4) AGENT B: in the foreign city

- **having received a copy of the bill from his Principal (B), agrees to accept the bill for payment, when the bill is presented to him**
- **pays or 'honours' the bill when Agent A presents the bill for redemption (payment) on the stipulated date of maturity**

NOTE: AGENT A, on collecting the bill, will arrange to have a return bill drawn on PRINCIPAL B, who will then pay PRINCIPAL A, on that bill's date of maturity.

BANKS & DISCOUNTING DURING THE INDUSTRIAL REVOLUTION

(1) The owner of cotton-spinning mill, Frank Appleby, makes a contract with a textile merchant, George Batemen, to sell him 1,000 yards of cotton yarn, with delivery in, say two months ('a forward-sale contract'). In return, to pay for this purchase of cotton yarn, George Bateman (merchant) gives Frank Appleby (cotton spinner) a *promissory note* (or 'inland bill'), promising full payment in 90 days.

> I, George Bateman, promise to pay Mr. Frank Appleby or his assignees [or the bearer of this note], the sum of £100 sterling, in Manchester, 90 days from the date of this note, namely on 1 February 1787, as full payment for the delivery of 1,000 yards of good spun cotton yarn of 90S fineness. I authorize my banker, James Young, to make payment on my behalf.
>
> Dated: 1 November 1786 at Manchester. (Signed) George Bateman

(2) The cotton-spinner, Frank Appleby, then immediately takes this promissory note to his Manchester banker, Samuel Glynn and Sons, and sells this note at discount, i.e., Appleby sells his note for some amount *less* than its redeemable face value on maturity. Obviously he cannot sell the note for the full face value, or the bank would earn no return (income) on the transaction.

(3) Appleby endorses the note on the back, and assigns its claim to the banker, Samuel Glynn and Sons.

> The banker, Samuel Glynn, buys this note for, say, £97 sterling; and gives the seller of the note, Frank Appleby, this sum of money, in three possible ways:
>
> (i) By crediting Frank Appleby's bank account with £97 -- with a stroke of the pen, thus allowing Appleby to make payments with his suppliers by writing cheques on this bank account. Subsequently, Appleby can withdraw cash from this bank account -- perhaps in some mixture of bank notes and coins -- to pay his workers.
> (ii) By giving Appleby £97 in bank notes that are issued by the bank itself (i.e. notes drawn on the bank of Samuel Glynn and Co., redeemable in legal-tender coin only at this bank).
> (iii) By giving Appleby £97 -- or part of that sum -- in Bank of England notes. [N.B. the Bank of England did not issue any £1 notes before 1797.] Bank of England notes, however, were redeemable in coin only at the Bank of England itself, in London.

(4) The cotton-spinner, Frank Appleby, can thus use this money -- his working capital -- in order to buy the raw cotton and other supplies, to pay the rent on his buildings, to pay the wages of his carders and spinners, and other salaries, and shipping costs in delivering the spun yarn.

(5) On 1 February 1787, the banker, Samuel Glynn and Sons, as *the assignee and bearer of the note*, then presents it to banker acting on behalf of the issuer, Mr. George Bateman, for collection. As indicated above, Bateman's banker, James Young, will make the full payment of £100 to Samuel Glynn and Sons, debiting the bank of account of George Bateman.

(6) What does the banker, Samuel Glynn and Sons, earn from this transaction?

> (i) Having purchased the bill for £97 and then having redeemed it for the full face value of £100, the banker earns the difference, namely £3. Thus £3/£97 = 3.093%.
> (ii) Interest rates or yields, however, are always calculated on an annual basis. Therefore the proper calculation of his yield or return on this transaction, for the period of three months or 90 days,

expressed as annual yield in percentage terms (‘interest’), is about 4 times as much. The proper calculation for the annual yield is:

3/97 x 365/90 = 0.125429 or 12.54%

Table 1. The English National Debt, 1693 - 1752 : Public Subscriptions

Date	Type of loan Public Subscription	Managed by	Amount Raised £ millions	Interest Rate*
1693	Million pound loan: life annuity	Exchequer	1.000	14.0%
1694	Lottery: 16-yr annuity	Exchequer	1.000	14.0%
1694	Loan: Bank of England	Bank of England	1.200	8.0%
1694	Annuities: 3 lives	Exchequer	0.021235	14.0%
1694	Annuities: 2 lives	Exchequer	0.170917	12.0%
1694	Annuities: 1 life	Exchequer	0.107848	10.0%
1697	Lottery: redeemable loans (redeemed by 1711)	Exchequer	0.01763	6.3%
1698	Loan: by New East India Co., in stock	New East India Co.	2.000	8.0%
1704	Annuity: 99 years	Exchequer	1.018868	6.6%
1704	Annuities: 1, 2, & 3 lives**	Exchequer	0.364108	6.6%
1705	Annuity: 99 years	Exchequer	0.690	6.6%
1706	Annuity: 99 years	Exchequer	2.855762	6.4%
1707	Annuity: 99 years	Exchequer	1.155	6.25%
1708	Annuity: 99 years	Exchequer	0.640	6.25%
1708	Annuity: 99 years	Exchequer	1.280	6.25%
1709	Loan: by United East India Co. stock	United East India Co.	1.200	?
1710	Lottery loan	Exchequer	1.500	9.00%
1710	Annuity: 32 years (Lottery Loan)	Exchequer	0.900	9.00%
1711	Perpetual stock [Conversion of 6 series	South Sea Company	9.471324	5.00%

Date	Type of loan Public Subscription	Managed by	Amount Raised £ millions	Interest Rate*
	of short term loans]			

1711	Lottery: redeemable debenture	Exchequer	1.500	6.0%
1711	Lottery: redeemable debenture	Exchequer	2.000	6.0%
1712	Lottery: redeemable debenture	Exchequer	1.800	6.0%
1712	Lottery: redeemable debenture	Exchequer	1.800	6.0%
1714	Lottery: redeemable debenture	Exchequer	1.710	?
1715	Redeemable debentures	Bank of England	1.080	5.0%
1717	Redeemable debentures	Bank of England	9.530	5.0%
1717	Redeemable debentures	Bank of England	0.950	4.0%
1718	Army debentures	Bank of England	1.600	4.0%
1719	Navy debentures	Bank of England	0.110	5.0%
1719	Lottery: redeemable debenture	Bank of England	0.500	4.0%
1719	Lottery: redeemable debenture	Exchequer	0.500	4.0%
1720	Perpetual stock [conversion of various loans 1693 - 1719 in stock]	South Sea Company	13.985	5.0%
1721	Redeemable stock	Bank of England	0.500	5.0%
1726	Lottery: redeemable stock	Bank of England	1.000	3.0%
1728	Bank of England loan	Bank of England	1.750	4.0%
1729	Bank of England loan	Bank of England	1.250	4.0%
1731	Redeemable debentures	Exchequer	0.400	3.5%
1731	Lottery: redeem. stock	Bank of England	0.800	3.0%
1736	Redeemable debentures	Exchequer	0.600	3.0%
Date	**Type of loan Public Subscription**	**Managed by**	**Amount Raised £ millions**	**Interest Rate***
1739	Redeemable debentures	Exchequer	0.300	3.0%
1742	Redeemable stock	Bank of England	0.800	3.0%
1743	Lottery: redeemable stock	Bank of England	1.800	3.0%

1744	Lottery: redeemable stock	Bank of England	1.800	3.0%
1745	Lottery: redeemable stock	Bank of England	2.000	3.0%
1746	Lottery: redeemable stock	Bank of England	3.000	4.0%
1747	Redeemable stock	Bank of England	4.000	4.0%
1747	Lottery: redeemable stock	Bank of England	1.000	4.0%
1748	Lottery: redeemable stock	Bank of England	6.300	4.0%
1749	Perpetual stock	Bank of England	2.970	3.5%
1750	Perpetual stock	Bank of England	1.000	3.0%
1750	Perpetual stock: conversion of 4% stock: Bank of England and East India Co South Sea annuities	Bank of England	50.750649	4.0% to 3.5%
1752	Consolidation of 9 issues	Bank of England	9.137821	3.0%
1752	Consolidation of 6 issues	Bank of England	17.701324	3.5%
	Total consolidation	Bank of England	26.839145	
1757	Consolidated Stock of the Nation or Consols: rate reduction (all of above)		3.0%	

* Interest rates paid on ‘blanks’ to holders of lottery loans (i.e., those who did not obtain a prize-bearing debenture)

** annuities of one, two, and three lives converted that year into 99 year annuities

Source:

Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), tables 2 - 30, pp. 48-242.

Table 2.

Prices of English Stock in 1720:

South Sea Company, Bank of England, East India Co, Royal African Company

Date	Price of Bar Gold in £ ster	Exchange on Amsterdam	South Sea Co. Stock	Bank of England Stock	East India Co. Stock	Royal African Co Stock
01 Jan	3.900	35.600	128.000	150.000	200.000	24.000
15 Jan	3.900	35.900	134.250	152.000	204.000	26.000
01 Feb	3.900	35.600	131.000	157.000	207.000	25.000
16 Feb	3.900	35.500	187.000	148.000	216.000	26.000
01 Mar	3.900	35.400	170.000	152.000	212.000	45.000
15 Mar	3.900	35.900	183.000	152.000	213.000	49.000
01 Apr	3.900	36.100	302.000	148.000	230.000	60.000
14 Apr	3.900	36.100	315.000	140.000	221.000	66.000
02 May	3.900	36.100	335.000	154.000	234.000	60.000
13 May	3.900	35.400	352.000	167.000	237.000	68.000
01 Jun	3.900	35.800	610.000	210.000	290.000	140.000
17 Jun	3.900	34.110	745.000	208.000	335.000	105.000
01 Jul	3.900	34.500	950.000	238.000	420.000	145.000
15 Jul	3.975	34.100	890.000	240.000	390.000	150.000
02 Aug	4.075	33.110	840.000	230.000	365.000	138.000
16 Aug	4.025	34.100	790.000	227.000	360.000	127.000
01 Sep	4.025	33.110	775.000	227.000	345.000	130.000

Date	Price of Bar Gold in £ ster	Exchange on Amsterdam	South Sea Co. Stock	Bank of England Stock	East India Co. Stock	Royal African Co Stock
16 Sep	4.025	34.100	520.000	210.000	270.000	65.000
01 Oct	4.025	35.100	290.000	190.000	195.000	50.000
14 Oct	3.900	35.300	170.000	135.000	145.000	40.000
01 Nov	4.050	33.000	212.000	142.000	165.000	47.000
15 Nov	4.100	34.000	195.000	143.000	170.000	45.000
01 Dec	4.000	34.000	192.000	145.000	165.000	46.000
15 Dec	4.000	33.100	155.000	140.000	155.000	40.000

Source:

Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), Table 17, p. 139.

Table 3.

Governments Debts Exchanged for South Sea Company Stock in 1711
in pounds sterling

Category	Type of Debt	Amount Subtotal	Amount	Percent of Total
1a	Navy and Victualling to Michaelmas 1710	5,130,539		
1b	Ordnance to Michaelmas 1710	154,325		
1c	Transport office to Michaelmas 1710	424,791		
	Subtotal		**5,709,655**	**60.28%**
2a	Army and Transport debentures up to 1702	987,157		
2a	accrued interest on these debentures to 1710	31,500		
2b	Shortfall in coal duties to pay loans: 1697, 1702	12,025		
2c	arrears in subsidy to Elector of Hanover	9,375		
	Subtotal		**1,040,057**	**10.98%**
3a	Navy, Ordnance, Transport Debts 1710	378,859		
3b	Interest of debts for 1710-1711	85,000		
	Subtotal		**463,859**	**4.90%**
4	Principal and interest on short-term loans 1710-11		1,371,428	14.48%
5	Sum for current supply		500,000	5.28%
6	Interest on whole debt for 1711		386,325	4.08%
	TOTAL		**9,471,324**	100.00%

Source:

Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), table 7, p. 80

Table 4.

The Structure of the British National Debt at 29 September (Michaelmas) 1714

in pounds sterling

Group no.	Category of Debt	Capital Value or Principal	Sub-Total	Annual Payment	Rate	Percent Share
1	**Irredeemable Debt**					
	Annuities Long (99 years)	9,998,490		666,566	6.67%	24.78%
	Annuities Short (32 years)	2,538,000		216,000	8.51%	6.29%
		12,536,490	**12,536,490**	**882,566**	**7.04%**	**31.06%**
2	**Redeemable Debt**					
	Exchequer Loans:					
2a	1711: first lottery	1,928,570				4.78%
2a	1711: second lottery	2,602,200				6.45%
2a	1712: first lottery	2,341,740				5.80%
2a	1712: second lottery	2,341,990				5.80%
2a	1713: civil list lottery	633,010				1.57%
2a	1714: lottery	1,876,400				4.65%
		11,723,910				29.05%
2a	**less amount discharged**	**320,648**	**11,403,262**	**684,196**	**6.00%**	**28.26%**
2b	**Bankers' Annuities (1705)**	**664,263**	**664,263**	**39,856**	**6.00%**	**1.65%**
3	**Owed to the Three Sisters**					
3a	Bank of England	3,375,028		202,512	6.00%	8.36%
3b	East India Company	3,200,000		160,000	5.00%	7.93%
3c	South Sea Company	9,177,968		188,166	2.05%	22.74%
3	subtotal	**15,752,996**	**15,752,996**	**550,678**	**3.50%**	**39.03%**
	TOTAL		**40,357,011**	**2,157,296**	**5.35%**	**100.00%**

Source: Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), table 7, p. 80

Table 5:

Structure of British Government Long-Term Debt in 1719
in pounds sterling (current values)

Category of Debt						
1	**Debt Owed to the 'Three Sisters' (Corporations)**				**Totals**	**Percent**
1a	Bank of England			3,375,028		6.76%
1b	East India Company			3,200,000		6.41%
1c	South Sea Company			11,746,844		23.54%
	sub-total				**18,321,872**	36.72%
2	**Redeemable Government Stock**				**16,546,202**	33.16%
3	**Annuities**					
3a	Long Term* Annuities: 99 years (at 20 yrs purchase)	666,566	5.000%	13,331,320		26.71%
3b	Shorter Term	121,669	7.143%	1,703,366		3.41%

	Annuities: 32 years (at 14 years purchase)		
	subtotal: annuities	**15,034,686**	30.13%
2 & 3	**Sub-total: gov't stock & annuities**	**31,580,888**	64.18%
	TOTAL	**49,902,760**	100.00%

Source: Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), table 9, p. 93.

Table 6.

Structure of Great Britain's Redeemable Long-Term National Debt in September 1749 on the Eve of Pelham's Conversion

No	Category	At 3%	At 3.5%	At 4%	Sub-total	Totals	Percentage Share
1	**Debts Owed to the Three Corporations**						
1a	Bank of England	3,200,000		8,486,800	11,686,800		16.59%
1b	East India Company	1,000,000		3,200,000	4,200,000		5.96%
1c	South Sea Company			3,662,784	3,662,784		5.20%
	Subtotal:	**4,200,000**		**15,349,584**	**19,549,584**	**19,549,584**	**27.75%**
2	**Perpetual Stock Managed by:**						
	Bank of England	7,200,000		18,402,472	25,602,472		36.35%
	South Sea: Old Annuities			13,651,100	13,651,100		19.38%
	South Sea: New Annuities			9,988,319	9,988,319		14.18%
	- Subtotal South Sea			23,639,419	23,639,419		33.56%
	Subtotal			**42,041,891**	**49,241,891**	**49,241,891**	**69.90%**
	Total for Three Sisters					**68,791,475**	**97.65%**

No	Category	At 3%	At 3.5%	At 4%	Sub-total	Totals	Percentage Share
3	**Managed by Exchequer**						
	1731: 3.5% series		400,000		400,000		0.57%
	1736 and 1739 loans	900,000			900,000		1.28%
	St Kitts-St Nevis debenture	37,821			37,821		0.05%
	1720 loan			312,000	312,000		0.44%
	Subtotal Exchequer	**937,821**		**312,000**	**1,649,821**	**1,649,821**	**2.34%**
	TOTALS	**12,337,821**	**400,000**	**57,703,475**	**70,441,296**	**70,441,296**	**100.00%**

Source:

Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), table 26, p. 232.

Table 7.

Four Per Cent Debts Subscribed to 3.5 percent Conversion by 30 May 1750 [converted to 3.0 Consols at Christmas 1757]

Values in current pounds sterling

Type of Debt	Total Amount	Amount Converted	Not Converted	Percent of Total	Percent Converted
Bank of England	8,486,800	8,486,800	0	16.72%	100.00%
East India Company	3,200,000	3,200,000	0	6.31%	100.00%
South Sea Company	3,662,784	0	3,662,784	0.00%	0.00%
South Sea Old Annuities	13,651,100	12,404,270	1,246,830	24.44%	90.87%
South Sea New Annuities	9,988,319	8,958,255	1,030,064	17.65%	89.69%
Government 4% Stock managed by the B of E	18,402,472	17,571,574	830,898	34.62%	95.48%
Government 4% Stock managed by Exchequer	312,000	129,750	182,250	0.26%	41.59%
TOTALS	**57,703,475**	**50,750,649**	**6,952,826**	**100.00%**	**87.95%**

Source:

Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development of Public Credit, 1688-1756* (London, 1967), table 29, p. 239

Table 8.

Consolidation of the British National Debt in 1752

Date of Loan or Stock	Manager	Debt at 3 percent	Debt at 4 percent converted to 3.5 percent	Total	percent of total
1720	Exchequer		129,750	129,750	0.49%
1721	Exchequer	37,821		37,821	0.14%
1731	Bank of England	800,000		800,000	3.00%
1736	Exchequer	600,000		600,000	2.25%
1738	Exchequer	300,000		300,000	1.12%
1742	Bank of England	800,000		800,000	3.00%
1743	Bank of England	1,800,000		1,800,000	6.74%
1744	Bank of England	1,800,000		1,800,000	6.74%
1745	Bank of England	2,000,000		2,000,000	7.49%
1746	Bank of England		2,824,429	2,824,429	10.57%
1747	Bank of England		4,189,365	4,189,365	15.68%
1747	Bank of England		929,277	929,277	3.48%
1748	Bank of England		6,660,007	6,660,007	24.94%
1749	Bank of England		2,968,496	2,968,496	11.11%
1750	Bank of England	1,000,000		1,000,000	3.74%
	TOTALS	**9,137,821**	**17,701,324**	**26,839,145**	100.00%
	percentages	34.21%	65.79%	100.00%	

Source: Peter G. M. Dickson, *The Financial Revolution in England : a Study in the Development*

of Public Credit, 1688-1756 (London, 1967), table 230, p. 242.

Table 9: Unredeemed British Public Debt, in Decennial Years, 1700 - 1910
In Millions of Pounds Sterling

Date	Funded Debt in £ millions	Unfunded Debt in £ millions	TOTAL DEBT IN £ MILLIONS	Percentage Change over last decade
1700	4.7	9.4	14.2	
1710	7.3	14.1	21.4	+50.7%
1720	49.8	4.1	54.0	+152.3%
1730	47.4	4.0	51.4	-4.8%
1740	43.3	4.2	47.4	-7.8%
1750	72.8	5.2	78.0	+64.6%
1760	97.6	4.2	101.7	+30.4%
1770	128.6	2.1	130.6	+28.4%
1780	156.1	11.2	167.2	+28.0%
1790	234.6	9.4	244.0	+45.9%
1800	411.4	22.6	434.0	+77.9%
1810	567.7	39.7	607.4	+39.9%
1820	798.5	41.6	840.1	+38.3%
1830	772.6	25.5	798.2	-5.0%
1840	768.0	20.6	788.7	-1.2%
1850	775.7	17.8	793.5	+0.6%
1860	789.7	16.3	806	0.016
1870	741.5	6.8	748.3	-7.2%
1880	710.5	27.3	737.8	-1.4%
1890	586	32.3	618.2	-16.2%
1900	552.6	16.1	568.7	-8.0%
1910	614.9	62.5	677.4	1911

Source: B.R. Mitchell and Phyllis Deane, eds., *Abstract of British Historical Statistics* (Cambridge, 1962), pp. 401-02.

Table 10 **Current Yields on British 2.5% Consols as Traded Daily on the London Stock Exchange**

To obtain the current yield, divide the coupon (2.5) by the market price

Date	Market Value	Yield
October 2012	£66.09	3.78%
March 2012	£63.85	3.92%
October 2010	£56.80	4.40%
March 2010	£50.53	4.95%
October 2008	£54.69	4.57%
March 2008	£55.14	4.53%
October 2007	£54.58	4.58%
March 2007	£54.79	4.56%
October 2006	£60.04	4.16%
March 2006	£59.43	4.21%
October 2005	£57.37	4.36%
March 2005	£53.50	4.67%
October 2004	£54.05	4.63%

Date	Market Value	Yield
March 2004	£51.85	4.82%
October 2003	£47.73	5.24%
March 2003	£51.16	4.89%
October 2002	£52.04	4.80%
March 2002	£47.21	5.29%
October 2001	£51.15	4.89%
March 2000	£52.85	4.73%
October 1999	£47.29	5.29%
March 1999	£53.037	4.72%
October 1998	£48.250	5.18%
October 1997	£37.906	6.60%
October 1996	£31.688	7.89%

To obtain a web quotation on the current market value of Consols go to the Financial Times, and look for Markets & Funds Data/Bonds & Rates/UK Gilts:

http://markets.ft.com/ft/markets/researchArchive.asp?report=UKG&cat=BR

Choose a category (bonds and rates) and choose a report (UK Gilts: cash market); or

http://markets.ft.com/ft/markets/reports/FTReport.asp?dockey=UKG

or: http://news.ft.com/markets/gilts.

Also on my Home Page (Other Web resources)

http://www.ft.com/marketdata/bondsandrates/gilts

Table 11: Capital Formation in England, 1700 - 1850:

Phyllis Deane's view (*British Economic Growth, 1688-1959*, Cambridge, 1968).

Net Domestic Capital Formation as a Percentage of Net National Income:

1700 - 1760 3% - 5% of NNI in the form of NDCF

1760 - 1780 5% - 6% of NNI in the form of NDCF

1780 - 1800 6% - 8% of NNI in the form of NDCF

1800 - 1830 8% - 10% of NNI in the form of NDCF

1830 - 1850 10% - 12%+ of NNI in the form of NDCF

.....

Feinstein's View:

Estimates of Gross Domestic Capital Formation in England, 1771 - 1850

Annual Means per Decade, in £ millions

Decade	Gross Domestic Capital Formation	Gross Domestic Product	GDCF as a Percentage of the GDP
1771-80	7.05	100	7%
1781-90	11.12	110	10%
1791-1800	14.31	135	11%
1801-10	16.57	160	10%
1811-20	20.51	200	10%
1821-30	28.29	275	10%
1831-40	38.59	365	11%
1841-50	49.43	450	11%

Source:

Charles Feinstein, 'Capital Formation in Great Britain,' in Peter Mathias and M. M. Postan, eds., *Cambridge Economic History of Europe,* Vol. VII: *The Industrial Economies*, part i (Cambridge, 1978), Tables 6 and 28, pp. 40, 91.