

The Public debt (theory and case study)

Ec 365

March 2, 2026

The public debt:

- What is it: the debt of **the** government.
 - Implicit: there is **one** government (representing the people) controlling expenditures and taxes.
 - Not true in the "Old Regime": (ex Spain, next lecture)
 - the king completely controls expenditures
 - Parliament (whatever it is), or the people, can have some impact on taxation.
 - In the US today, ambiguous:
 - Two parties may have different views on the level of taxation.
- We begin with a simple case
 - England XVIII (after the "Glorious Revolution" of 1688
 - Assume that the debt has no credibility problem
 - About true is the Whig party (the party of business) is in power. (Remark on Venice)

Case study: England XVIII

- The English public debt

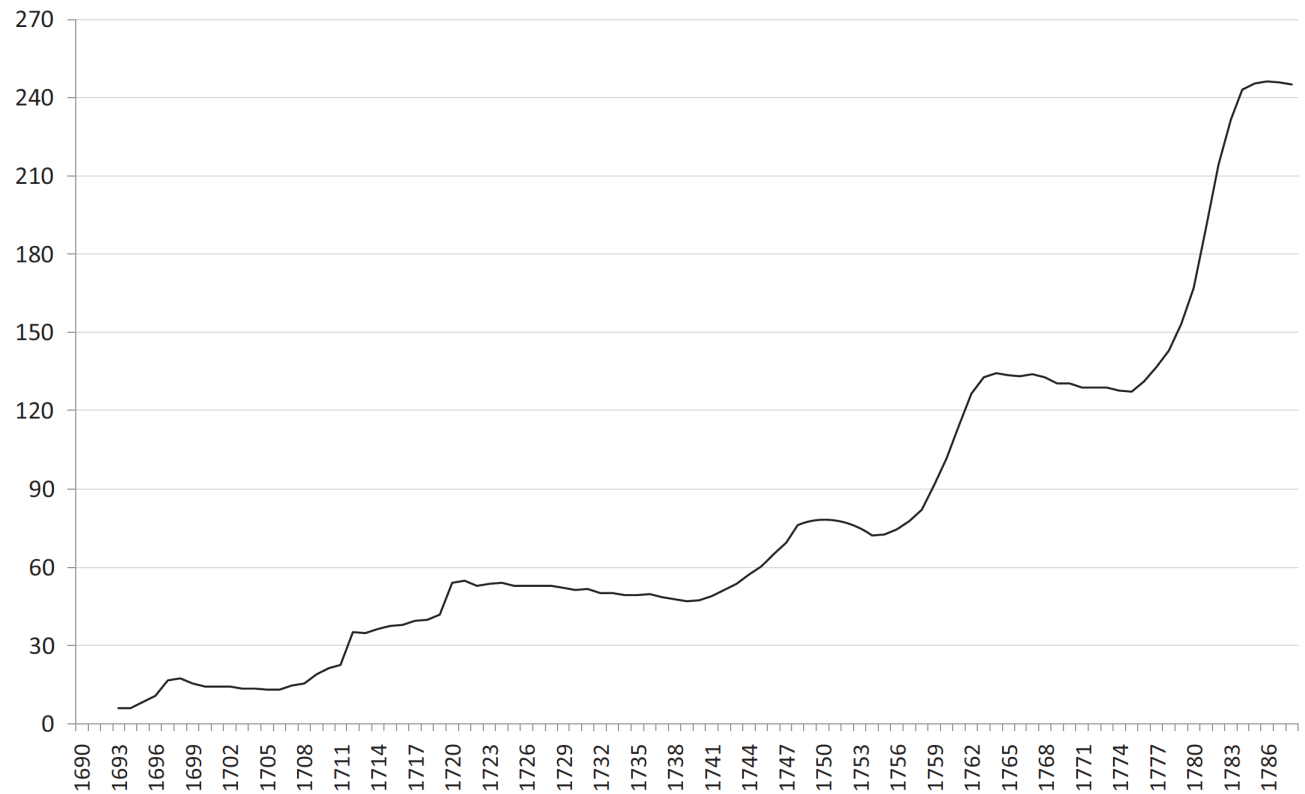
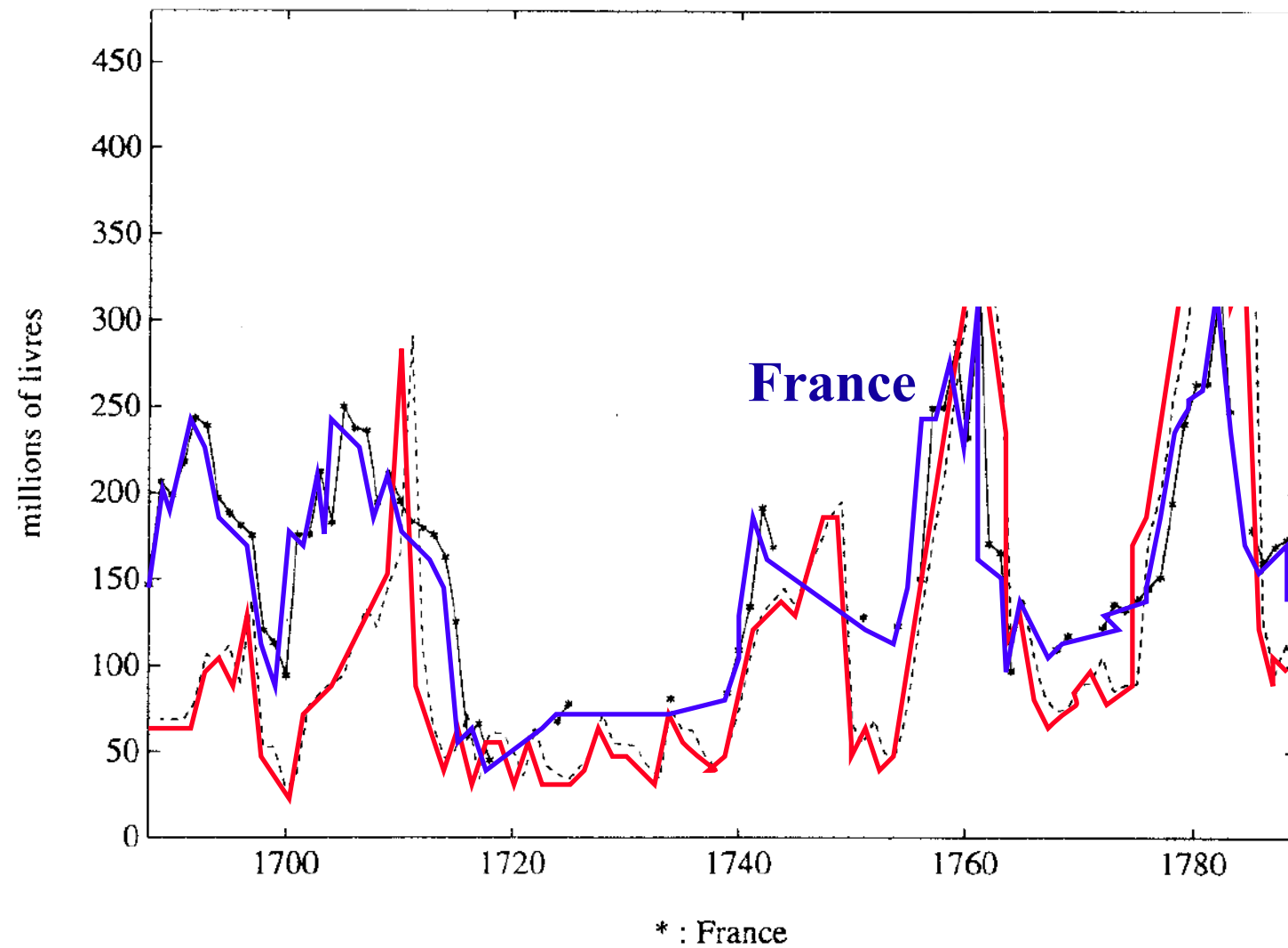


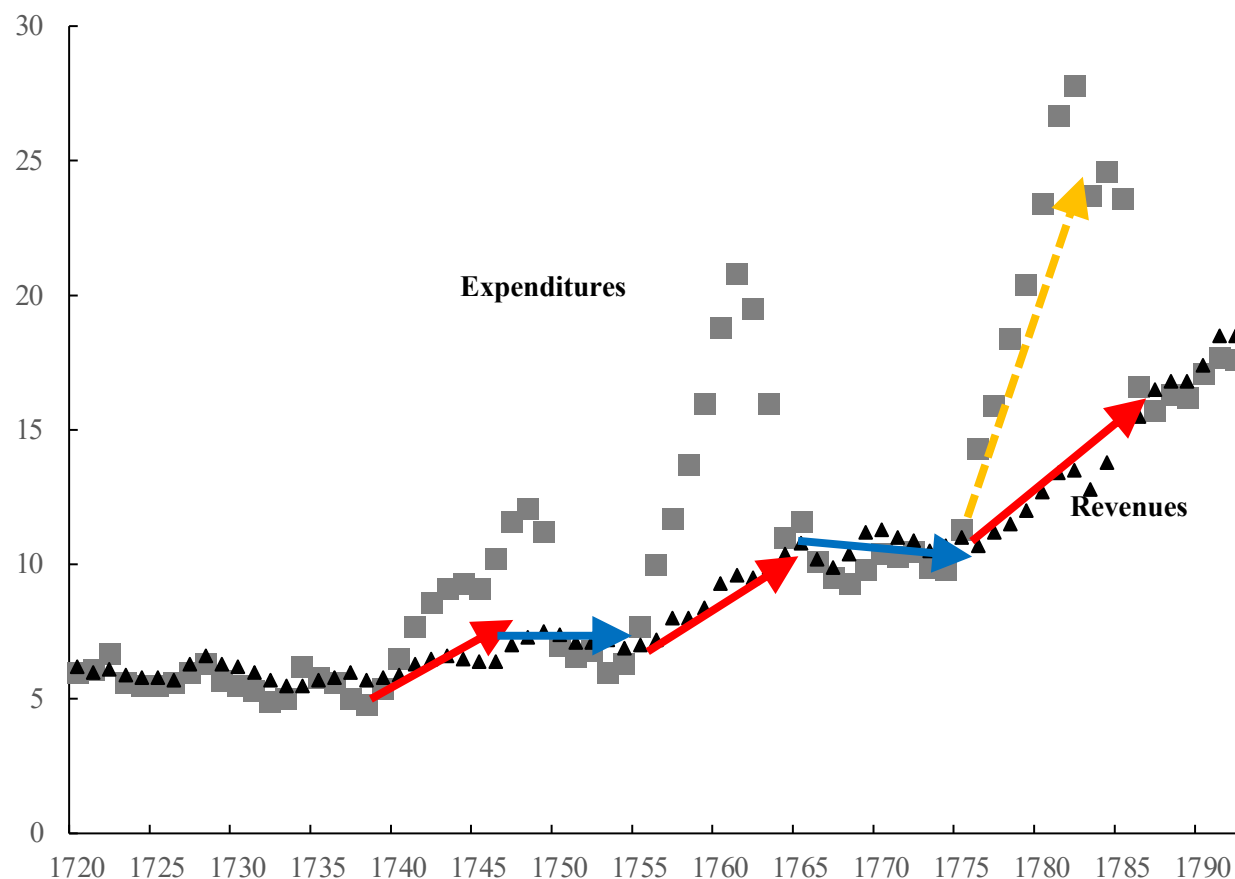
Figure 9.5. Total outstanding government debt (millions of pounds), 1690–1788. *Source:* Mitchell, Brian R. 1988. *British Historical Statistics*. Cambridge: Cambridge University

The second hundred years war: military expenditures



Theory (modern fiscal policy)

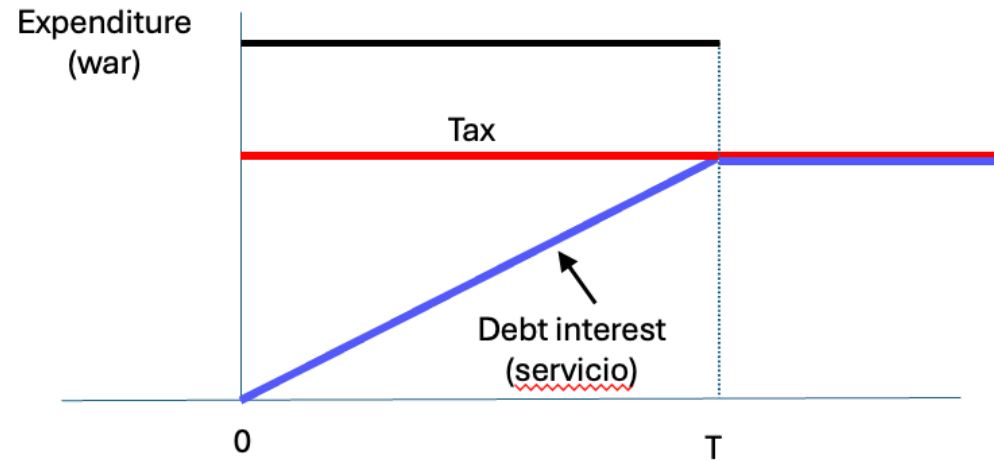
- Tax smoothing:
 - Program of future (overall) taxes **constant** as a fraction of GDP
 - The level should be adjusted for the budget constraint (of the government)
 - The government has a long life (in PV nearly infinite)
 - The government does not have to pay back the debt. (Discuss-important)



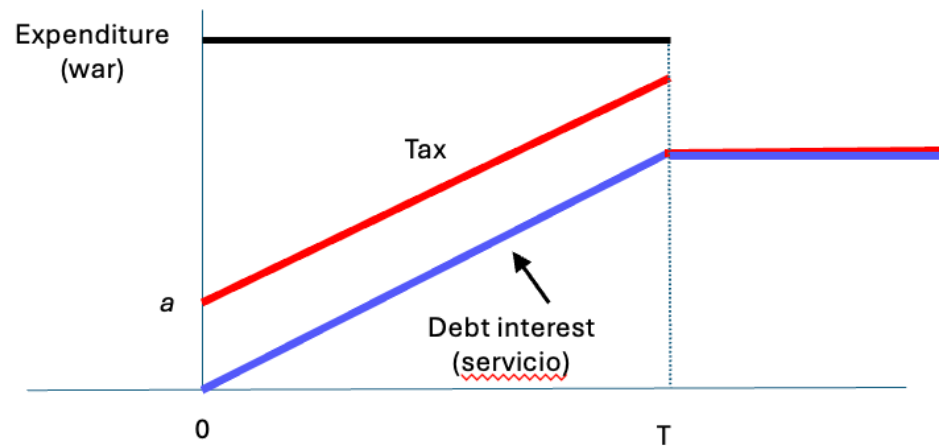
- Simple rule: tax level should pay the interest on the existing debt and the present value of expected future expenditures.
- In practice:
 - large shock (war), adjust the tax.
 - Small shock: smooth that out

Exercises

- Predictable fiscal shock:
 - Remember the assumptions
 - Behind the figure



- Indeterminate random end
 - Assumption: each year, a probability (fixed) that the war ends (for good) in that year.



How to service the debt ?

- Today: general revenues
 - Exception: social security tax:
 - special tax to ensure that the benefits will be paid.
- Before stable government (say before 1800).
 - Bonds (instruments of the debt—also called annuities) serviced (interest paid) by special taxes.
 - Equivalent to mortgage the revenues: they are allocated to the service of a particular bond.
 - True even for England in the XVIII.
 - The Parliament voted in each fall for the quantity of new bonds to be issued and voted at the same time for the taxes to service these new bonds.

Examples: first loans to the English gov. after the G.R.

TABLE 2
Government Long-term Borrowing, 1693-8

No.	Date of royal assent to Loan Act	Sum raised £	Interest %	Fund on which interest charged	Administration of loan
1	26 January 1693	108,100	10 until midsummer 1700, then 7.	Additional excise on beer and vinegar, and on imported beer, cider, and brandy, for 99 years from 25 January 1693.	A tontine loan (see text). It was hoped to raise £1m. The interest would be divided among the contributors until, by deaths, one took all.
2	Same Act as (1)	773,394	14	Same fund as (1).	This and (3) were single-life annuities to complete the £1m. contemplated by (1).
3	8 February 1694	118,506	14	Same fund as (1).	
4	23 March 1694	1,000,000	14	Duties on (a) imported salt, 1694-7, (b) half of new duties on beer, vinegar, cider, and brandy, 1697-1711. This fund was expected to yield £140,000 p.a. for 16 years. Duties were administered by the	A lottery of 100,000 £10 tickets. After the draw holders were given so much a year for 16 years. The sum varied from £1,000 p.a. for the largest prizes to £1 p.a. for blanks. After 16 years all payments were to cease.

First loans to government

TABLE 4
GOVERNMENT LONG-TERM BORROWING: INTEREST RATES, 1693–1739
(selected loans)

Date ^a	Amount	Interest	How Funded
Jan 1693	£723,394	14.0%	Additional excise
Mar 1694	1,000,000	14.0	Duties on imports
Mar 1694	1,200,000	8.0	Additional customs and duties
Apr 1697	1,400,000	6.3	Excise and duties
Jul 1698	2,000,000	8.0	Additional excise duties
Mar 1707	1,155,000	6.25	Surplus from funds of five loans from 1690s; duties
Jul 1721	500,000	5.0	Hereditary revenue of Crown
Mar 1728	1,750,000	4.0	Coal duties
May 1731	800,000	3.0	Duties
Jun 1739	300,000	3.0	Sinking fund

^a Date of royal assent to loan act.

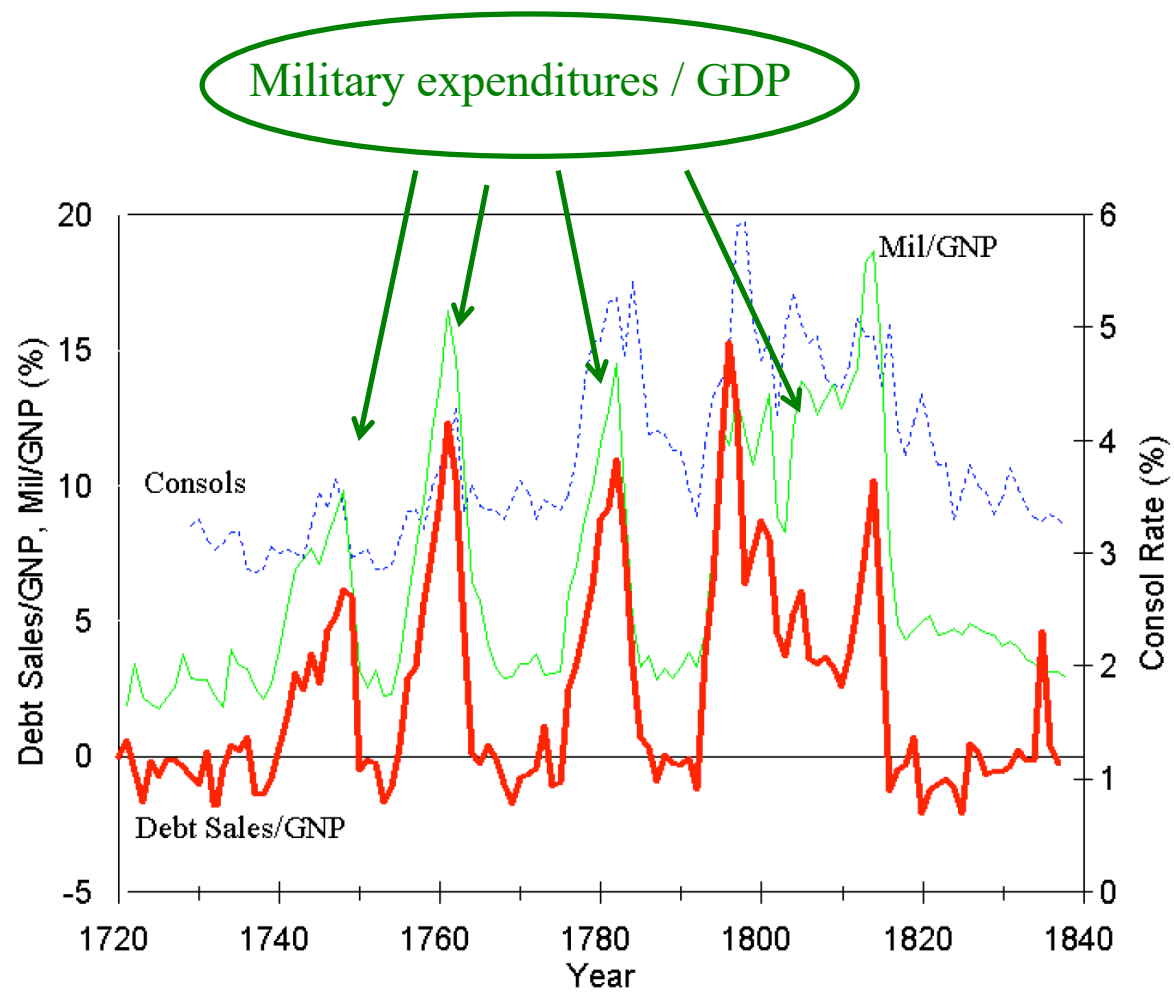
Source: P. G. M. Dickson, *The Financial Revolution in England* (New York, 1967), tables 2, 3, and 22.

				by additional duties, 1694-8; (b) five-sevenths of second half of new duties in (b) above.	If half the sum of £1.2m. was lent by 1 August 1694, the subscribers were to be incorporated as the <i>Bank of England</i> . The state could repay the £1.2m. borrowed on one year's notice after 1706.
6	Same Act as (5)	300,000	10, 12, and 14	The other two-sevenths of the fund in (b) above.	Annuities for one, two, and three lives, at respectively 14%, 12%, and 10%. The sums raised were £107,848 on one life, £170,917 on two, and £21,235 on three.
7	16 April 1697	1,400,000	6.3	(a) Excise of 6d. a bushel on malt; (b) duties on rum, cider, and perry, 1697-9.	A lottery of 140,000 £10 tickets. Only 1,763 tickets were in fact sold. The rest were used by the Exchequer as cash. £657,850 were paid and cancelled by 1702, the rest between 1702 and 1711.
8	5 July 1698	2,000,000	8	(a) Additional excise duties on imported and home-produced salt from 1699 in perpetuity; (b) duties on vellum, parchment, and paper in perpetuity.	The subscribers were incorporated later in the year as the <i>New East India Company</i> .
		£6,900,000			

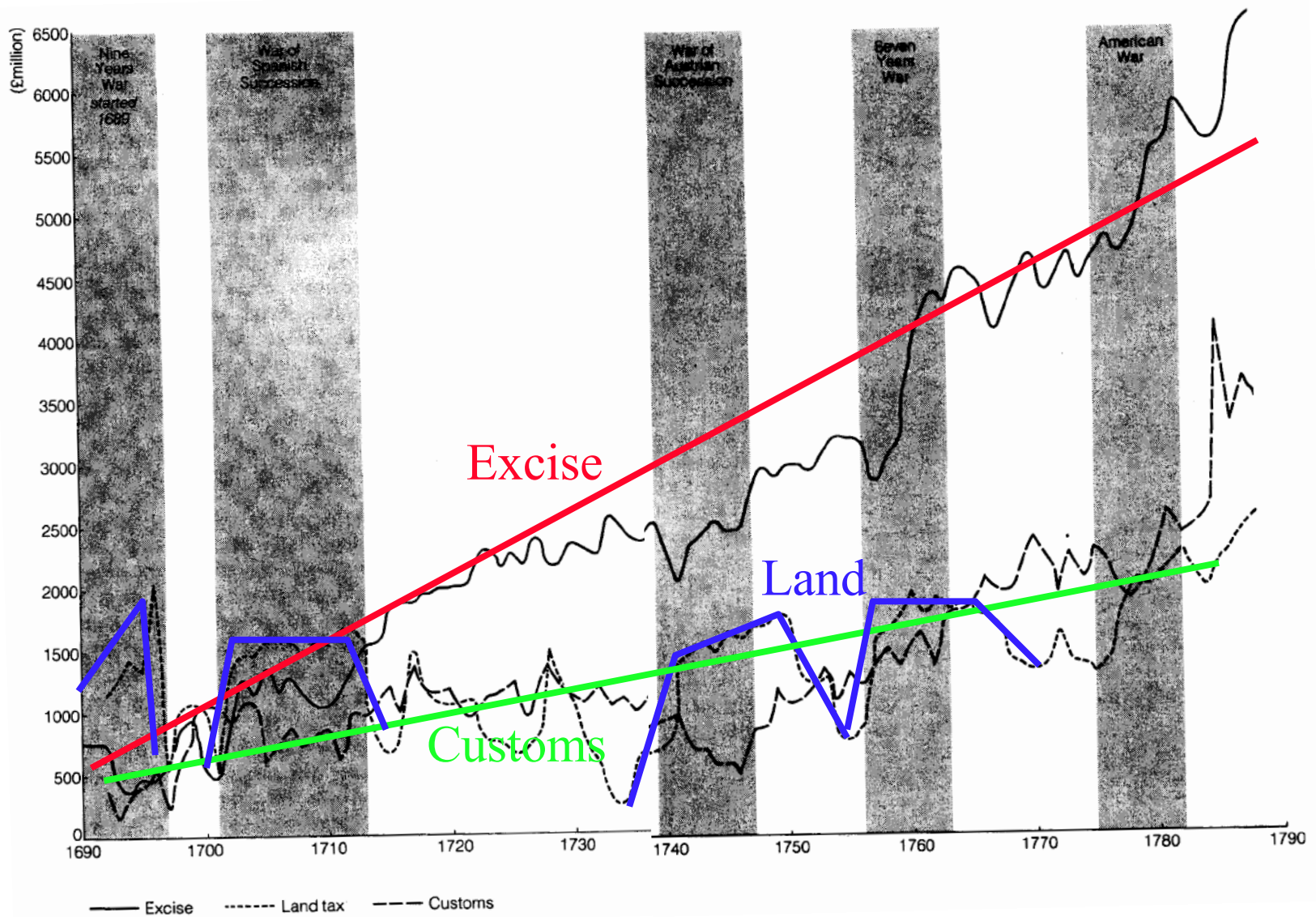
Money Subscriptions (issues of stock) made by the South Sea Company in 1720

<i>No.</i>	<i>Date</i>	<i>Issue price</i>	<i>Amount of stock proposed to be issued</i>	<i>Amount of stock actually issued</i>	<i>Cash payable on subscription or later</i>	<i>Cash payable to company if all calls met</i>
			£	£	£	£
1	1720 14 April	300	2,000,000	2,250,000	One-fifth down: balance in eight calls at two-monthly intervals. Last call 14 August 1721.	6,750,000
2	29 April	400	1,000,000	1,500,000	One-tenth down: balance in nine calls at three- or four-monthly intervals. Last call 14 December 1722.	6,000,000
3	17 June	1,000	No limit set	5,000,000	One-tenth down: balance in nine calls at six-monthly intervals. Last call 2 January 1725.	50,000,000
4	24 August	1,000	1,000,000	1,250,000	One-fifth down: balance in four calls at nine-monthly intervals. Last call 25 September 1723.	12,500,000
				£10,000,000		£75,250,000

books. Thus, in the fourth subscription there were about 2,500 names, compared with about 1,500 in the first subscription, which was for nearly twice the amount of stock. The directors certainly resolved not once but four



Tax Revenues in England



Actual tax policy

Major British Taxes 1788–1792

	Average Annual Yield 1788–92 (thousands of pounds £)	Type of Tax	Percent Distribution of Taxes	
			Itemized	Aggregate
1 Direct taxes				
Land, windows, etc.	3388	Direct		21.2%
2 Food				
Tea	583	Customs	3.6%	
Salt	999	Customs	6.3%	
Sugar	425	Excise	2.7%	
				12.6%
3 Heat, Light, Fuel	969	Cust & Exc		6.1%
4 Construction materials	648	Cust & Exc		4.1%
5 Clothing, footwear	1010	Cust & Exc		6.3%
6 Soap and Starch	501	Excise		3.1%
7 Alcohol and tobacco				
Beer	1968	Excise	12.3%	
Malt	1838	Excise	11.5%	
Hops	121	Excise	0.8%	
Wine	739	Customs	4.6%	
Foreign Spirits	990	Customs	6.2%	
Domestic Spirits	654	Excise	4.1%	
Tobacco	607	Customs	3.8%	
				43.3%
8 Commercial Services				
Newspapers, etc.	533	Stamp		3.3%
Overall total	£15,973			100.0%

Source: O'Brien (1988, p. 11)