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POLITICAL ARITHMETIC AND THE ENGLISH LAND TAX IN THE REIGN OF WILLIAM III*

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ABSTRACT. *This article explores the role of the method of political arithmetic and political arithmeticians in the changing methods of raising finance during the Nine Years War. It discusses the actions of parliament-men in committees and their interaction with reports containing data, and the influence of projectors on the decision to introduce, and later abandon, the pound rate. Throughout this period, political arithmeticians were active participants, providing data, advice, and schemes to the treasury and parliament, and when they were not, 'country' MPs, in particular, were active in calling for data and leading its cross-examination. This article suggests that debates on public finance did not occur along party lines, with 'county communities' given fresh presence by the quantification of the inequality of the land tax burden. Political arithmetic is shown to have played an important role in the processes and negotiations that occurred over the setting of taxation policy in the 'long eighteenth century'.*

It remains the view that the 'long eighteenth century' saw little quantitative inquiry, a view particularly marked by the absence of a census in Britain until 1801.[1] Attention that has previously been given to political arithmetic has focused on attempts to collect 'vital statistics' by individuals, and less on the impact of policy this method had. None have closely studied the influence of the method in parliament, its role in legislation, committees and speeches, or its influence over the direction of policy on public finance of either the treasury or parliament-men. Studies in the growth of 'parliamentary inquiry' have concentrated on committees of inquiry, most notably the commission of public accounts and the country party members associated with it.[2] The absence of

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[1] J. Hoppit, 'Political arithmetic in eighteenth-century England', *Economic History Review*, 3 (1996), pp. 516–40, at pp. 516, 519, 525.

[2] J. Downie, 'The commission of public accounts and the formation of the country party', *English Historical Review*, 91 (1976) pp. 33–51; J. Innes, 'Legislation and public participation, 1760–1830', in D. Lemmings, ed., *The British and their laws in the eighteenth century* (Woodbridge,

wider quantitative inquiries has suggested parliament-men made policy on ill-informed grounds and has led to a concentration on certain areas of discourse on political economy, overlooking both the role of the method of political arithmetic and of political arithmeticians as prominent actors in policy-making. Recent emphasis by Steve Pincus on land taxation has therefore been placed on its party-political dimensions, arguing that the tax was an attempt to strengthen the whig-manufactory interest against the tory-landed one.[3] This article also challenges the conclusions of William Ward and John Beckett, who argued that the tax established was the result of a struggle between opposing 'county interests' that 'stumbled upon' the tax, 'more by accident than design'.[4] By showing that political arithmetic was more than a 'backbenchers' phenomenon',[5] the treasury being an important motivator of political arithmetic during the Nine Years War, it is suggested that contemporaries also saw and understood their world in quantitative terms. Political arithmetic was seen as a necessary aid to decision-making, particularly during the 'settlement' of the tax after the Ryswick peace treaties in 1697, reflecting the importance of parliament and negotiation in its procedures to the continuing role of political arithmetic.

Since the rising costs of the Nine Years War forced ministers and parliament-men to project new methods of finance, it is advantageous first to outline the changing methods of levying the land tax and their chronology.[6] The first system was the monthly assessment, which was reintroduced in February 1689, initially using county quotas set in 1677. This was a system whereby each county raised a levy to a parliamentary-determined total, having the advantage of certainty of yield. The alternative means, the pound rate (also known as the 'aid', or 'subsidy') was also a Restoration method and reintroduced in May 1689 alongside the monthly assessment, in an attempt to combine the equality of the pound rate, which levied a rate on every pound of a subject's income, with the certainty of a monthly assessment. The monthly assessment was employed until 1692, before being succeeded by the pound rate between 1693 and 1697. From 1698, the monthly assessment was reimposed using county quotas set by the yields received in the first pound rate, echoing the policy between 1689 and 1692. The monthly assessment raised the question of the equality of distribution, with rates set at a county level, with the north and west being historically underrated in quota taxes, encouraging MPs from the south and

2005), pp. 102–32; D. Hayton, ed., *The House of Commons, 1690–1715* (5 vols., Cambridge, 2002), I, pp. 374–8, 395–406.

[3] S. Pincus, *1688: the first modern revolution* (London, 2009), ch. 12.

[4] J. V. Beckett, 'Land tax or excise: the levying of taxation in seventeenth- and eighteenth-century England', *English Historical Review*, 100 (1985), pp. 285–308, at p. 285; W. Ward, *The English land tax in the eighteenth-century* (Oxford, 1953), p. 21.

[5] J. Innes, 'Parliament and the shaping of eighteenth-century English social policy', *Transactions of the Royal Historical Society*, 5th ser., 40 (1990), pp. 63–93, at pp. 87, 89.

[6] Beckett, 'Land tax or excise', pp. 285–9; Ward, *The English land tax*, pp. 2–3.

east to push for a pound rate. Both methods were intended to tax the profits from land and offices, though they became synonymous with a 'land' tax.

'Political arithmetic' was termed by William Petty in 1672 and was methodologically restricted to express oneself only 'in terms of number, weight or measure; to use only arguments of sense … [and to study causes that] have visible foundations in nature'.[7] This programme borrowed heavily from Francis Bacon and the Royal Society, which Petty had helped to found, having been an active member of the Hartlib circle in the late 1640s, experiencing the impact of its 'science' on practical politics as leader of the Down Survey in Ireland during the Protectorate. The central claim of the method was that the collection and estimating of 'statistics' on acreage, population, national wealth and of other 'things relating to government', would ease the decision-making process and eliminate dissent, by informing discourse on the activities of the state.[8] In the 1690s, public finance sustained this Restoration art, motivating Charles Davenant, John Houghton (who drew on Edmond Halley's calculations of the acreage of England and Wales) and Gregory King.[9]

Mary Poovey once argued that political arithmetic required an absolutist monarch to implement its reform schemes and was therefore incompatible with the 'liberal governmentality' after the Glorious Revolution.[10] In contrast, this article shows that political arithmetic was recognized as an important method to reason and conceptualize issues on public finance and the inequality of taxation. The dispersed nature of decision-making, partly a result of the treasury laying in commission under William III, offered an opportunity for lobbyists and projectors, and one they acted upon. Parliaments and the treasury became stimulators, audiences and organizers of this data collection, because of, and focusing on, the rising costs of war, in contrast to the Restoration period, where Petty had focused his efforts on the king and privy council.

[7] W. Petty, *Political arithmetic* (1690), p. vii.

[8] C. Davenant, *Discourses on the publick revenues, and on the trade of England* (2 vols., 1698), I, p. 2; C. H. Hull, ed., *The economic writings of Sir William Petty* (2 vols., London, 1899), II, p. 397; H. W. E. Landsdowne ed., *The Petty–Southwell correspondence, 1676–1687* (London, 1928), pp. 230–1, 252, 282.

[9] P. Slack, 'Government and information in seventeenth-century England', *Past and Present*, 184 (2004), pp. 33–68, at pp. 48–51; W. Petty, *Verbum sapienti* (1691), pp. 1–2; Hull, *Economic writings of Sir William Petty*, I, pp. 239–40, 301–2; J. Graunt, *Natural and political observation upon the bills of mortality* (1662), p. 42; G. King, 'The LCC Burns journal', in P. Laslett, ed., *The earliest classics* (London, 1973), p. 264; J. Houghton, 'An account of the acres and houses, with the proportional tax &c of each county in England and Wales', in W. Cobbett, *Parliamentary history of England* (36 vols., London, 1806–20), V, Appendix, pp. civ–cvi; idem, *Collection for the improvement of husbandry and trade*, 24 (1693); C. Davenant, *An essay on the ways and means of supplying the war* (1695), p. 109; idem, *Discourses on the publick revenues*, I, pp. 239–43.

[10] M. Poovey, *The history of the modern fact: problems of knowledge in the science of wealth and society* (Chicago, IL, 1998) p. 147.

I

The central annual issue for William, his treasury and parliaments was funding the Nine Years War, which stimulated demand for information to place such funding on a secure footing. There are two paths to examine the extent of institutionalization of political arithmetic in parliament and the treasury, though this article focuses on the former. The first is the ordering of papers and reports on the land tax by both bodies, though there was little co-ordination between them. The second is through the Commons' supply committees and the committee of the whole house. These paths show that quantitative arguments made an increasingly important contribution to the passing of supply bills, peaking after the Ryswick treaties in 1697.

Turning first to the incidence of reports, it is possible, using the calendar of treasury books and the Commons' journals (the Lords is dealt with separately), to construct patterns of the occurrence of political arithmetic and its relationship with the passage and amendment of the land tax. Dates of their presentation are shown in Tables 1 and 2. Broadly, their occurrence followed the same pattern as legislative initiatives, with a post-war boom in activity as pressures on parliamentary time was eased, with no regular accounts presented to the treasury or parliament during wartime. As the average number of bills rose from 1.11 a day between 1688 and 1697 to 1.34 a day from 1697 to 1702,[11] the incidence of reports saw a similar increase, as ministerial threats of reports taking up parliamentary time and destabilizing war finance lost their validity.[12] Using the threat of destabilizing the Bank of England, ministers had successfully halted MPs from ordering its accounts in 1696, as part of the campaign for a land bank.[13] Equally, the clause in the land tax act of 1688/9 requiring a report to be presented to the Commons of all money levied under it was not fulfilled, and the clause was absent from the next act.[14]

The pressure on parliament-men to grant supply, in a period when peers rushed through the bill of 1695, believing the king wanted to give his consent the next day,[15] was intense, with ministers attempting to ensure short debates, and thereby reduced opportunities to reason with arithmetic. It was only because of the onset of peace that the clause in the 1696/7 act, that required estimates of its deficiencies to be laid before the Commons in the next session, was fulfilled.[16] The whig John Hampden (following William III) pressured the House to 'go into committee [and] do it speedily' in order for money to

[11] J. Hoppit, ed., *Failed legislation, 1660–1800, extracted from the Commons and Lords Journals* (London, 1997), p. 11.

[12] Sunderland to Portland, 13 July 1694, Nottingham University Library (NU), Portland MSS, PwA 1238.

[13] N. Luttrell, *A brief historical relation of state affairs from September 1678 to April 1714* (6 vols., Oxford, 1857), IV, p. 136.

[14] J. Raithby, ed., *Statues of the realm* (London, 1819) (SR), XI, pp. 142, 149–51, 180–218.

[15] Luttrell, *A brief historical relation*, IV, p. 14.

[16] SR, XII, pp. 166–89, part XCVIII.

be 'speedily given',[17] impeding detailed scrutiny until the onset of peace. Hence, the flow of information ordered by, and presented to, the Commons, was erratic until the winter of 1697/8 (see Table 2). Only matters that were less central to the funding of the war effort, such as the examination of public accounts, could be done on an annual basis, reflecting the importance of a professional body, independent of the treasury, to provide regular oversight to parliament.[18]

The treasury, as can be seen from Table 1, was able to show stronger elements of planning than the Commons, reflecting its desire to prepare for coming sessions. In December 1692, the secretary to the treasury, William Lowndes, received from the receivers of taxes the produce of three different aids, in an attempt to be more effective at pressing for the introduction of the pound rate, whilst the Commons lacked a report.[19] The requirement on receiver generals in the act of 1691 to report all money received to the exchequer before trinity term 1693 was implemented.[20] However, their estimate of the four shilling aids of 1693 and 1694 did not reach the floor of the Commons, whilst it did in 1698 and 1701.[21] This situation, however, did not stop contemporaries being aware that the yield of the pound rate was falling towards the assessment of 1692, for Davenant only reiterated arguments on the impracticality of a pound rate in 1694, again in 1698.[22]

The specific and limited nature of these reports is further shown in the details within them. Reports were limited to annual investigations, with at most the juxtaposition of two years of data, as in the Commons' reports of 6 January and 1 March 1698 (though the report in December 1696 did compare the amounts borrowed on three aids).[23] The treasury received two reports with two sets of aids in 1692 and 1696.[24] Peers received three reports from the commission for public accounts providing them with data in December 1691 and November and December 1693 (which gave the yield of the four shilling aid at three points in the year),[25] giving greater detail on the land tax earlier than what was extracted by the Commons.

[17] H. Foxcroft, ed., *Life and letters of Sir George Savile, first marquis of Halifax* (2 vols., London, 1898), II, p. 137; Cobbett, *Parliamentary history of England*, V, p. 657.

[18] For example, in the Commons between 1690 and 1693, *Journals of the House of Commons* (*CJ*), X, pp. 432, 570, 700, XI, pp. 26–7. For the Lords, between 2 Dec. 1691 and 16 Jan. 1692, *Journals of the House of Lords* (*LJ*), XIV, pp. 668, 677, 688, 693–4, 697, 699, XV, pp. 7–8, 14, 25, 31, 34. This article is based primarily on these printed sources, reflecting its focus on the use of political arithmetic in parliament.

[19] W. Shaw, ed., *Calendar of treasury books* (London, 1931–9) (CTB), IX, p. 1926.

[20] *SR*, XI, pp. 259–301, part XXXV.

[21] *CTB*, X, p. 557; *CJ*, X, pp. 665, 682, XIV, pp. 117–38, XVI, p. 226.

[22] Davenant, *An essay on the ways and means*, p. 109; idem, *Discourses on the publick revenues*, I, pp. 239–43.

[23] *CJ*, XI, p. 604, XII, pp. 30–1, 136–8.

[24] *CTB*, IX, p. 1926, XI, pp. 317–22.

[25] Historical Manuscripts Commission (HMC), *House of Lords MSS, 1690–1691* (London, 1892), pp. 356–401; HMC, *House of Lords MSS, 1693–1695* (London, 1900), pp. 20, 60–96.

Table 1 *Reports and papers on the land tax presented to the treasury and the Commons between 1689 and November 1697*

House of Commons		Treasury	
Account	Date presented	Account	Date demanded
State of incomes and issues of public revenues*	1 Dec. 1691		
		Account of what each county produced on the twelve pence aid, two shilling aid and additional twelve pence aid	6 Dec. 1692
		Estimate of what the four shilling aid will amount to	4 Mar. and 15 May 1693
Several sums returned to the exchequer, charged upon the several and respective counties across land	8 Jan. 1694 (ordered 5 Jan.)		
		Extract of duplicates of what the first four shilling aid and quarterly poll produced	30 Mar. 1694
State of the incomes and issue of the revenue*	25 Jan. 1695		
State of revenue and payments*	2 Dec. 1695		
		An account of the several payments that have been made to the exchequer on the fourth four shilling aid	30 June 1696

		The sums of clipped money paid into the exchequer before 4 May last and how much remained unpaid and how much each parish paid for the said sum (f the fourth four shilling aid)	3 July 1696
		Accounts prepared for the House of Commons, including the first four shilling aid, for the year 1693, third four shilling aid (1695) and the fourth four shilling aid (1696) *	27 Nov. 1696
An account of tallies struck upon parliamentary funds; the payments made upon, and the principal remaining*	1 December 1696		

* Refers to the land tax amongst other taxes.

Sources: CJ, x–iii; W. Shaw, ed., *Calendar of treasury books* (London, 1931–9), IX–xii.

Table 2 *Reports and papers on the land tax presented to the Commons between December 1697 and 1702*

Account	Date presented
An estimate of the deficiencies of last year's aids	13 Dec. 1697 (ordered 9 Dec.)
States, estimates and accounts	6 Jan. 1698 (ordered 17 Dec. 1697)
Deficiencies of supply	1 Feb. 1698 (ordered 29 Jan. 1697)
Rates of several counties of England and Wales, to the first aid of four shillings in the pound	1 Mar. 1698 (ordered 24 Feb. 1698)
Account of deficiencies*	12 Dec. 1699
Produce of several counties of England and Wales in the first aid of three shillings in the pound, and of the first and last quarterly poll	9 Jan. 1700
Gross and net produce of the deficient aids by county	29 Feb. 1700
Receivers in arrears	19 Jan. 1701
Arrears upon taxes, aids or supplies*	3 Apr. 1701
Certificate of money paid into exchequer on the two shilling aid	3 Apr. 1701

* Refers to the land tax amongst other taxes.
Source: CJ, x–xiii.

The 'heavy lifting' of comparing different assessments and proportionality was, therefore, left to individual members, whose remarks tended to focus on their own localities.

In terms of causation, the reports' aims were to give a broad conception of the problem of proportionality, arrears or yield, and to check the overall success of alterations. Therefore, the treasury opposed them if it wanted no switch between the pound or monthly rates, being content to see the tax voted and a proportion of revenue guaranteed. The pattern of parliamentary reports suggests that they were called to check expectations, with the pound rates' effectiveness explored in a report of the next winter, which occurred again after the reintroduction of the monthly assessment. These were not seen as necessary prerequisites for the voting of taxation, even at the height of the Nine Years War, with only one report received by the Commons before 1697. The greatest shift in attitudes came after December 1697, as can be seen in Table 2, when the Commons called reports to both check and estimate, whilst the treasury, considering the land tax 'settled' after the pound rate was abandoned, limited itself to fulfilling the act of 1696 requiring it to keep a check on yields, before

being joined in this attitude by the Commons after 1700. This was a retreat on the employment of political arithmetic during the war by the treasury, when reports had been used to prepare for coming debates and utilized as an estimating tool.

Moving to the debates themselves, there is further evidence that the accounts called for by individuals or committees were limited in aim, being employed at the preliminary stages of voting supply and to solve specific issues encountered during committee. For example, the report of 8 January 1694 was a response to the slow progress of the committee of the whole house, complaining the next day of having 'met with great difficulties . . . in charging each county with double what the same was charged with upon the act for two shillings in the pound'.[26] Individual members were also a source of demand for information. The lawyer, Robert Sawyer, asked members first to 'compute what the total charge amounts to, what you have given may come to, and what more is yet to raise' before the means of raising supply were considered.[27] In March 1690, Paul Foley, before being elected a public accounts commissioner, had demanded estimates for the revenue.[28] Both were answered by John Lowther, the first lord of the treasury, who enabled the House to proceed without relying on memories of the revenues of previous monarchs to estimate William's. The treasury endorsed the view that members should use the reports when parliamentary time allowed, to aid the passage of ministers' preferred measures. Lowther had been active with Christopher Musgrave in demanding members 'read the papers [as] the first thing [to] do' before considering supply.[29] In 1690, Mr Godolphin had thought the returns of twelve pence in the pound would tell the Commons 'exactly what to do'.[30] Lowndes 'computed the land tax for 1697', to introduce one committee debate.[31]

Without the pressures of war, more extensive parliamentary political arithmetic occurred, showing that the return to a monthly assessment cannot be seen solely as the result of the actions of 'regional blocs' in the Commons. There was an advance in the extent of parliamentary political arithmetic after 1697, with the demand for information continuing, especially from those attempting to reduce the burden of the tax in peacetime, using data as 'propaganda' for change, and resulting in a disjunction between treasury and parliamentary attitudes.[32] As can be seen from the absence of reports to the

[26] *CJ*, XI, pp. 51–2.

[27] H. Horwitz, ed., *The parliamentary diary of Narcissus Luttrell, 1691–1693* (Oxford, 1972) (Luttrell, *Diary*), p. 112.

[28] Cobbett, *Parliamentary history*, V, pp. 553, 566.

[29] A. Grey, *Debates of the House of Commons from the year 1667 to the year 1694* (10 vols., London, 1769), X, p. 358.

[30] Ibid., IX, p. 403. 'Mr Godolphin' may refer to Charles or Sidney Godolphin, both serving MPs.

[31] O. C. Williams, ed., *The minute book of James Courthope* (Camden Miscellany 20, 3rd ser., 133, London, 1953), p. 2.

[32] S. Winnington, *Notes on debates and proceedings in the House of Commons*, ed. D. W. Hayton (Camden 4th ser., 34, London, 1987), p. 395.

treasury, it showed little desire to support any change other than to see a monthly assessment reintroduced, successfully opposing the attempt of the leading country-tory, Robert Harley, to lay eighteen pence on land.[33] The treasury viewed reports as attempts to loosen the 'settlement' of the land tax, claiming that the 'formal steps of raising money had been more punctually observed during the war than at any time before',[34] and hence reports after 1697 were unnecessary.[35] It was left to 'Harley, Musgrave and that party' to manage the passage of the land tax and the calling of reports.[36] Without the demands of war to pressurize members, ministers were unable to see a bill for the land tax on the model of 1693 prepared, or a discussion happen upon it, until three reports had been received.[37] Despite the lord of the treasury and the chairman of supply and ways and means, Thomas Littleton, moving for such a form of tax, the House had resolved 'for more particulars of the grants than had been presented by [the secretary to the treasury] Mr Lowndes'.[38]

With less pressure on business, the House resolved to allow members to use the information for their own political arithmetic, reflecting the continuing informality of its employment. The Commons journals record that the reports of 13 December 1697 and 12 December 1699 were allowed to 'lie upon the table, to be perused by members'.[39] This allowed members to check whether the change of rates had been advantageous to the interest of their country, in addition to enabling reasoning with figures. The journals rarely note that papers laid on the table were 'pursued', such as in the case of the reports of the commissioners of the public accounts in December 1695 (usually it was noted they were merely 'laid on the table').[40] Members took advantage of the availability of data, with the committee comparing the yields, deficiencies, and proportions of the aids of 1696 and 1697. The committee 'examined Mr Ryley' (a treasury employee)[41] to deduce the yield of the next land tax and its proportions.[42] This enabled MPs to compare with Lowndes's calculations heard

[33] W. Hardy, ed., *Calendar of state papers, domestic series of the reign of William and Mary* (London, 1895) (*CSPD*), 1698, p. 43.

[34] W. Cowper, *Notes taken in the money-chair*, ed. D. W. Hayton (Camden 4th ser., 34, London, 1987), p. 363.

[35] Reports to the treasury were limited to the details of the deficiencies of first, third and fourth four shilling aids, and which were received every twenty-eight days between July 1698 and November 1701. See *CTB*, XII–XVII.

[36] G. P. R. James, ed., *Letters illustrative of the reign of William III from 1696 to 1708 addressed to the duke of Shrewsbury, by James Vernon* (3 vols., London, 1841) (*Vernon correspondence*), II, p. 3.

[37] *CJ*, XII, p. 93; HMC, *Le Fleming MSS* (London, 1890), pp. 349, 350.

[38] Proceedings in the House of Commons, 9–11 Feb. 1698, The National Archives (TNA), State Papers 32/9, fo. 178.

[39] *CJ*, XII, pp. 5–6, 424.

[40] Ibid., XI, pp. 214, 360–1. The books for the commission for public accounts were only made available in abstract. Cf. *CJ*, X, p. 619. Here three revenue papers were presented and sent to committee, reflecting the specialization in interpreting reports and the time required to examine them.

[41] HMC, *House of Lords MSS, 1693–1695*, p. 60.

[42] *CJ*, XII, pp. 30–2.

three weeks earlier.[43] This cross-examination was an exception, with the remainder of the reports read only to the committee. The Commons was behind the practice of peers. In December 1691, peers were summoned to discuss and decide upon thirty-one heads of queries on the books of accounts,[44] echoing the land tax investigations, whilst the investigations into miscarriages at sea of December 1693 to January 1694 and re-coinage between 1694 and 1695 had heard witnesses and papers.[45]

These investigations fed into pre-existing county-blocs on the land tax, with the presence of 'county communities' made more profound by the demonstration by data presented of the inequality of the tax burden, with 'one side endeavouring to ease themselves and load another' when setting the rates.[46] However, members involved in this neglected aspect of the passage of the land tax were more penetrating and refining of land tax bills than might be suggested by their voting along county lines. The debates of 1699 revolved around whether the sum raised should be fixed, not on counties, but 'upon every ward, parish and township', and defeated MPs hoped there would be 'another trial upon the report' as part of a counterattack on their opponents.[47] MPs had also attempted this the previous year, 'making a new trial how near they could not come to an equal taxation'.[48] As a result, William Fleming, a northern MP, was able to argue that it was not just the northern counties that had fallen short and to justify his actions to his locality, being aware that his barony would save £98 4*s* 2*d* by having the tax raised upon the wards.[49] Richard Cocks, whig MP for Gloucestershire, was knowledgeable of different yields, reasoning that his own county would pay less under the new quotas of 1698 compared to the rate of 1692.[50] This thought process and information was aided by his brother, who was receiver general of the county,[51] reflecting the informality of political arithmetic for most members. Even the political arithmetician, King, worked on the level of hundreds, rather than country-wide studies, with the receipts of the 1689, 1693 and 1696 taxes.[52] These limited exercises meant that supply procedures could exert pressure on policy in this period.

Although the land tax settled upon in 1698 was not original, as Beckett reminds us, we should not assume that its creation was merely a 'natural

[43] *The minute book of James Courthope*, ed. Williams, p. 2; newsletter to Sir Joseph Williamson, 21 Jan. 1698, TNA, State Papers 32/9, fos. 86–7.

[44] *LJ*, XIV, pp. 677, 686, XV, pp. 7–8.

[45] HMC, *House of Lords MSS, 1693–1695*, pp. ii, xix, 204, 497, 510–11.

[46] TNA, State Papers 32/9, fo. 317. For the 'county community', see in particular A. Everitt, 'The county community', in E. W. Ives, ed., *The English Revolution, 1600–1660* (London, 1971), and C. Holmes, 'The county community in Stuart histiography', *British Studies*, 19 (1980), pp. 54–73.

[47] HMC, *Le Fleming MSS*, p. 350.

[48] Proceedings in parliament, 9–11 Mar. 1698, TNA, State Papers 32/9, fo. 317.

[49] HMC, *Le Fleming MSS*, pp. 349–50.

[50] D. Hayton, ed., *The parliamentary diary of Sir Richard Cocks, 1698–1702* (Oxford, 1996), pp. 20–1, 106–7.

[51] *CTB*, XI, pp. 113, 142.

[52] King, 'Burns journal', pp. 41–6, 141.

response' to falling rates. The reports presented suggest that the characteristics of political arithmetic – information gathering, investigation, cross-examination and the specific rejection of another option – were occurring in the House of Commons. 'Confusion and parochial separatism'[53] were only part of the 'world' within which MPs operated, with quantification an important aspect of their perception of interests and identification of legislative options. Table 2 shows how far some MPs were willing to go to inform policy, this period being a powerful case-study of the mobilization of the treasury's resources to present information for a specific supply bill in a short time. This has consequences for how the land tax in the eighteenth century is viewed. It had been stressed that 'by the 1730s it passed almost on the nod'.[54] The legacy of 1698 remained, however, with the House receiving annual reports on arrears into the 1750s and investigations took place on its yield between 1719 and 1726, before the rate was reduced in the late 1720s.[55] It was the practices of 1698, not 1693, that became standard, with little advancement on these principles, resulting from a lack of treasury leadership to improve the quality or quantity of information presented.

This lack of progress was because the treasury considered the tax 'settled' after the reintroduction of the monthly assessment, ending the period of innovation in public finance that had existed during wartime, limiting itself instead to strengthening the central state, by increasing its oversight of collection through monthly reports. It continued to appreciate political arithmetic, albeit a more limited form. The nature of the land tax collection explains why the treasury desired statutory backing to collect more information regarding returns, with a falling speed of collection (declining from 79.4 per cent being collected within six months in 1696, to 2.58 per cent in 1698).[56] The inability of the treasury to supervise collection, with the duplicates 'irregularly brought in',[57] allowed communities to avoid reassessments of property values. Cumberland throughout this period employed the purvey, a rate that originated in James I's visit in 1617, to levy its land tax.[58] Reports to the treasury on the state of deficiencies at least every twenty-eight days until November 1701 informed a greater scrutiny of collectors.[59] The decision of the Kirby commission in February 1697 to 'abate a quarter of what they paid last year for land', because they feared that if they went 'too high in that tax [it would] be used as evidence against them in the future',[60] suggests awareness of

[53] Ward, *The English land tax*, p. 21.
[54] Beckett, 'Land tax or excise', p. 307.
[55] S. Lambert, ed., *House of Commons sessional papers of the eighteenth century, 1715–1800* (145 vols., Winnington, DE, 1975), I, index. For reports, pp. 39, 42.
[56] D. K. Smith, 'Land tax returns as a source for studying the English economy in the eighteenth century', *Bulletin of the Institute of Historical Research*, 54 (1981), pp. 54–61, at pp. 57, 107.
[57] HMC, *House of Lords MSS, 1690–1691*, p. 406.
[58] J. V. Beckett, 'Local custom and "new taxation" in the seventeenth and eighteenth centuries: the example of Cumberland', *Northern History*, 12 (1976), pp. 105–26, at pp. 113–14.
[59] *CTB*, XVI, p. 389.
[60] HMC, *Le Fleming MSS*, p. 348.

reports being employed and the continuing role of county particularism. The decision of 1697/8 had only been possible because 'the account of the first 2*s.* aid [was] fairly transcribed and kept in the exchequer'.[61] The raising of the land tax by a semi-bureaucratic collection method warns against any characterization of its purpose as a whig-manufactory tax to weaken the tory-landed interest, because its aim was to protect the localities and ensure parliamentary control of war finance. Compared to the excise, the land tax did not, and was not supposed to, aid executive oversight that would enable easier collection of information and political arithmetic. It took a clause in the act of 1696/7 to modify this characteristic of the land tax 'system' and only for three of the aids.[62] The broad trend remained a lack of intervention and reports.

Although there were reports on the state of the customs, excise and other taxes, this period lacks reports encompassing the entire tax 'system'. It was known that the only alternative to a land tax was a 'general excise' and so reports that raised this spectre, by comparing the two, were undesirable. Davenant explained the absence of excise schemes on this failure to inform the Commons of the produce of every branch of revenue, 'as men walk fearfully in the dark'.[63] The absence of comparative reports suggests that contemporaries were less concerned about the principle of a land tax than Pincus has argued. The whigs he quotes shared the tory fear of an excise.[64] John Swynfin saw no purpose in 'saving our lands [to] enslav[e] our persons by excise'.[65] Hampden supported the land tax, because it 'will smart while it lasts', so it would soon be taken off.[66] The tories Pincus quotes, like William Temple, wanted a more effective collection of a land tax, despite viewing it as the 'most unreasonable method of raising [tax] … that was ever introduced', because it ruled out an excise.[67] The tory Roger Kenyon was told 'when money is given … it should be by a land tax, for it is certainly the safest and readiest way to raise money'.[68] The tory Lord Bruce told his son-in-law, and tory MP for Warwickshire, Andrew Archer, that 'since money must be raised … I do like this way of so much per month'.[69] Because these tories that are quoted do not reflect Pincus's claims that the tax was the 'bogeyman of the tories',[70] political arithmetic was able to form an integral part in policy-making, debate being centred upon how best to raise the tax, rather than upon its principle. In the case of the excise, where there was principled objection, political arithmeticians and political arithmetic could

[61] TNA, State Papers 32/9, fo. 178. [62] *SR*, VII, pp. 218–38, part XLII.
[63] J. Brewer, *The sinews of power: war, money and the English state, 1688–1783* (London, 1989), p. 150. [64] Pincus, *1688*, pp. 368–9. [65] Grey, *Debates*, x, pp. 37–8.
[66] J. Hampden, *Some considerations about the most proper way of raising money in the present conjuncture* (1691), p. 34.
[67] W. Temple, *An essay upon taxes calculated for the present juncture of affairs in England* (1693), pp. 5, 8, 22.
[68] R. Logworth to Roger Kenyon, 7 Oct. 1690, Lancashire Record Office, Kenyon of Peel, DDKE Acc. 7840 HMC, 748.
[69] Lord Brooks to Andrew Archer, 22 Oct. 1692 (?), Shakespeare Centre Archive, Archer of Tanworth, DR 37/2/88/71. [70] Pincus, *1688*, pp. 384–5.

not overcome this hostility to impact on developments, despite Davenant's activity in 1691 and the treasury official Howard's in the spring of 1693.[71]

II

The calling of data was often at a committee's behest. The passage of supply legislation involved, by convention, the committees of supply and ways and means, which decided on sums to be raised and methods of doing so, and the committee of the whole House, which was also employed on a wide range of non-fiscal matters. The second reading of the land tax bills in the Commons all took this form. The preparation and presentation of bills were also undertaken by a small committee, offering opportunities for reasoning and challenging figures to influence a bill's final form. The committee of ways and means and of supply are central to the institutionalization of political arithmetic, because they enabled the hearing of backbenchers and their proposals and offered a 'space' for commentary by political arithmeticians, bolstering the politicization of supply under William.

The open nature of these committees and lack of treasury control was aided by the absence of standing order sixty-six which was not adopted until 1713. It was designed to prevent the House having to consider petitions for money other than 'what [was] recommended by the crown',[72] halting backbenchers' and private projectors' proposals. The opposition figures, Clarges, Foley, and Musgrave, were all named to bring in the supply bill in December 1692 and so could have used political arithmetic during the drafting of the bill.[73] The presence of a range of members in the committee of the whole House is important since it was where extensive amendments could be proposed, such as the (unsuccessful) attempt to introduce the pound rate in 1691.[74] Breaking down the members present and those who spoke in these debates, enables identification of the characteristics of the use and politicization of political arithmetic under William.

A range of members used political arithmetic during the committee of the whole house. The twelve names in Table 3 comprise a significant proportion of active members, considering that there were 149 and 148 speakers, recorded in the sessions of 1691 and 1692 respectively, in Narcissus Luttrell's diary.[75] The business of the Commons and the amending of bills was done by a small nucleus of leading debaters and committee-men, as members developed their specific interests and expertise. Luttrell's totals cannot be seen as comprehensive, but his interest in procedure and detailing of speeches renders his diary more useful in examining the extent of the use of political arithmetic than that of

[71] Sunderland to Portland, 3 May 1693, NU Portland MSS, PwA 1212/2.
[72] J. Hatsell, *Precedents of proceedings in the House of Commons* (4 vols., London, 1818), III, p. 242. [73] *CJ*, X, pp. 744–5. [74] Luttrell, *Diary*, pp. 61–2.
[75] Hayton, ed., *The House of Commons, 1690–1715*, IV, p. 417.

Table 3 *MPs who used political arithmetic on the land tax during the committee of the whole house*

Member	Constituency	Office	Subject
Thomas Clarges	Oxford	Public accounts commissioner	Yield (national) Total revenue (national)
Richard Cocks	Gloucestershire	Gloucestershire commissioner for the land tax	Yield of pound and monthly rates (Gloucestershire) Computing taxes that fall on landed gentlemen (Gloucestershire)
Paul Foley	Hereford	Public accounts commissioner	Excise yield (national) Total revenue (national)
Stephen Fox	Westminster	Treasury commissioner	Yield (national)
Henry Goldwell	Bury St Edmunds	–	Regional inequality (national)
Richard Hampden	Buckinghamshire	Chancellor of the exchequer	Yield (national)
John Lowther	Cumberland	Treasury commissioner	Yield (national)
Charles Montagu	Maldon	Treasury commissioner	Yield (Middlesex)
Christopher Musgrave	Carlisle	–	Yield (national)
Thomas Neale	Lugershall	–	Population (national)
Robert Sawyer	Cambridge	–	Total revenue (national)
Edward Seymour	Exeter	Treasury commissioner	Yield (national)

Sources: D. Hayton, ed., *The parliamentary diary of Sir Richard Cocks, 1698–1702* (Oxford, 1996) pp. 20–1, 106–7; H. Horwitz, ed., *The parliamentary diary of Narcissus Luttrell, 1691–1693* (Oxford, 1972), pp. 112–13, 311–12, 403.

Richard Cocks (whose diary is dominated by his own speeches) or Anchitell Grey. MPs that used reasonable estimates to advise and assess options on issues such as the yield or inequalities between counties used the political arithmetical

method in different ways, reflecting the different aims and priorities of the treasury and their opponents.

Whilst it has been shown how reports after 1697 could be used for partisan debating, this was not the purpose of the committee of the whole house. Instead, there was a different use of political arithmetic as MPs, guided by ministers and opposition leaders, attempted to 'examine ... [the] particulars ... [and] not lump [the revenue], but examine [it]'.[76] The call to examine 'particulars' suggests some MPs were expected to have knowledge of these and competency in working with them, which encouraged political arithmetic. The purpose of entering into the committee of the whole House was to be free of the rules of debate and build a consensus. These procedures lent themselves to the scrutiny of data and the questioning of ministers and opponents, due to there being less stress on the rule of relevance and being able to speak at length more than once in the committee of the whole.[77] Lowther spoke five times, and Foley four, in a single committee session, challenging each other's estimates of the double excise and land tax, underlining the use of committees by treasury ministers and backbenchers alike.[78] Committees offered an informal alternative to the calling for reports.

The institutional backbone of the commission of public accounts gave MPs a confidence in challenging the treasury and supporting fiscal legislation that they may not otherwise have possessed, as the privy councillor Sir Robert Howard had warned William in 1691.[79] Political arithmetic strengthened the politicization of the commission of public accounts and the leadership of Clarges, Foley and Harley. Although the commission was characterized by William Shaw as an oppositional body, obsessed with corruption,[80] James Downie is right in stressing that it was an expenditure-investigating body first, adopting a country attitude when the court became more obstructive.[81] The commission was not meant to be an estimating body, although, as seen above, their reports to peers included the yield of land taxes. Contact with those who worked with figures helped to strengthen their experience, with arithmetic practised on expenditure transferred to other areas. Arguably, Foley did not need the commission to reason with figures. He launched his father's iron manufactory as a joint stock company,[82] gaining experience with 'shop-arithmetic' that had inspired John Graunt's' mortality tables in 1662.[83] It was, however, Clarges and Foley, followed by Musgrave and Harley, who questioned

[76] Qu. Luttrell, *Diary*, p. 114. Clarges offered a similar definition in Cobbett, *Parliamentary history*, v, p. 656.
[77] *Vernon correspondence*, II, p. 428, for the decision of 8 Feb. 1700.
[78] Luttrell, *Diary*, pp. 112–14.
[79] Sir Robert Howard to the king, 31 Jan. 1691, TNA, State Papers 8/9, fos. 210–11.
[80] *CTB*, IX, pp. cli–clxxiv.
[81] Downie, 'The commission of public accounts', p. 51.
[82] Hayton, ed., *The House of Commons, 1690–1715*, III, p. 1058.
[83] Graunt, *Natural and political observations*, p. ii.

the crown's requests for supply. Clarges calculated how much the land tax would raise and what was still needed in February 1693, challenging treasury reasoning.[84] Foley lobbied Mr Godolphin over his scheme to raise £8 million,[85] whilst Harley, Musgrave and 'that party' pushed for the reports of 1698.[86] These men had to be lobbied through print and meetings, just like ministers, by political arithmeticians in order to influence supply legislation, reflecting the dispersed nature of decision-making in the 1690s.

Whilst one MP complained in 1670 of the continued dispute surrounding the acreage and value of England, 'some saying [the value] was 18, some 12, some but 9 millions [of pounds] yearly; some that [the area] was 50, some 36, some 30, some but 24 millions of acres',[87] the 1690s was dominated by the similarity of estimates. Allegiances continued, however, to follow a Restoration pattern; Sir Daniel Fleming's desire to protect 'the north' from the tax burden was present in 1698, and was no different from his response in 1663 or 1678.[88] Regional blocs were present in the debates of 4 December 1691 and 13 December 1692, where only Hugh Boscawen, Harley and Sir Charles Sedley did not follow regional lines and in 1698, when Lowther voted the opposite way to Fleming, thinking 'his part of the county overrated',[89] with these rare cases underlining the absence of a party divide on the land tax. Such blocs nevertheless used the rhetoric of political arithmetic and the apparent air of neutrality conferred by figures to justify their positions. The similarity of MPs' estimates confirms they were working with the same information, despite the lack of detailed reports between 1691 and 1693. Fox suggested the yield would be £1.55 or £1.56 million, with a loss of £50,000 in tax collection, with the House resolving to collect £1.57 million.[90] In 1698, it was reported that 'Mr Godolphin made a proposal about taxing people according to their expenses in the lump, going by the way of political arithmetic', providing calculations of population and their income.[91] Opposition figures also recognized that 'romantic' figures were not enough in an informed House. Musgrave, who believed the land tax would 'hit very hard on our northern counties',[92] was careful in using credible figures, believing that £100,000 would be lost in collection. His experience in customs and as a receiver of taxes and a farmer of tolls in northern England supported his political arithmetic, just like Fox's role in the Treasury.[93]

[84] Luttrell, *Diary*, p. 403.
[85] Henry Guy to first earl of Portland, 15 July 1695, NU Portland MSS, PwA 506.
[86] *Vernon correspondence*, II, pp. 3, 422; *CSPD*, 1698, pp. 77–8.
[87] J. Thirsk and J. Cooper, eds., *Seventeenth-century economic documents* (Oxford, 1972), p. 677.
[88] HMC, *Le Fleming MSS*, pp. 31, 142, 350.
[89] Luttrell, *Diary*, pp. 61–2, 311–13. They all spoke for a pound rate; HMC, *Le Fleming MSS*, pp. 31, 142.
[90] Luttrell, *Diary*, p. 114.
[91] Notes of proceedings in the House of Commons, 9–12 Apr. 1698, TNA, State Papers 32/10, fo. 104.
[92] Hayton, ed., *The House of Commons, 1690–1715*, IV, p. 971; Luttrell, *Diary*, p. 114.
[93] Hayton, ed., *The House of Commons, 1690–1715*, IV, p. 966.

MPs were therefore working with a different model to political arithmeticians. MPs and ministers were content to discuss proportionality based on quotas and yields received, but Houghton, Davenant and King preferred the hearth tax and acreage to estimate regional variations. There was dispute, with Davenant estimating that there were around 1.32 million houses in England and Wales, compared to Houghton's estimate of fewer than 1.2 million, despite both using the hearth tax returns.[94] On acreage, there was greater certainty, thanks to Houghton publishing Halley's calculations on the acreage of the kingdom, based on John Adams's map of England and Wales.[95] Their attempts to calculate the taxable capacity of the nation remained a private interest, and were not investigated or institutionalized by the treasury or parliament.

Since there was a range of members able to influence legislation, the Commons was enhanced as a place for the nation as a whole, including political arithmeticians acting as a sectional interest, to influence fiscal bills. Fear of an expansion of the excise encouraged, and procedural ability allowed, backbenchers to seize the initiative in supply proposals, with Fleming claiming to have 'persuaded a member to withdraw his proposal to tax malt' in December 1696.[96] The small number of MPs and treasury ministers who dominated committee sessions resulted in a more effective role of 'high' political arithmeticians.

III

The failure to implement an excise did not discourage projectors from lobbying parliament-men and ministers with advice and schemes meaning that, in those sessions where no reports were presented, the House and treasury did not lack information. As a result of regularly convening in October or November between 1690 and 1697, with the passage of supply legislation its first business, parliament prompted much private data collection by offering a permanent 'point of contact' for localities and interest groups.

The explicit aim of 'high' political arithmeticians was to supplement the reports and debates of the MPs and ministers. Although Pincus cited work written by political arithmeticians to argue that the land tax was a whig design, they should not be awarded the importance and centrality in the minds of policy-makers that this implies. The documents Pincus cites were all short and produced by political arithmeticians or past or present parliamentarians to lobby a specific bill, rather than setting the agenda of debate, as his argument implies.[97] As explored below, regarding Davenant and Houghton in particular, these documents were practical, projecting ones, with a short shelf-life, rather

[94] Houghton, 'An account of the acres and houses'; King, 'Burns journal', p. 11.

[95] For Petty's attempt, see 'A table containing the whole number of acres etc', in P. Slack, 'Measuring the national wealth in seventeenth-century England', *Economic History Review*, 57 (2004), pp. 607–35, at pp. 630–2.

[96] HMC, *Le Fleming MSS*, p. 345.

[97] Pincus, *1688*, p. 598 nn. 40–1.

than abstract, ideological documents and were seen as such by contemporaries. Together with King, these case studies show the extent to which the agenda and timing of public discussion was set by the Commons and the treasury.[98]

Political arithmeticians recognized their lack of manoeuvre and that MPs were subject to pressure from their localities, manifesting themselves as regional blocs over the pound and monthly assessments. These blocs were published by Davenant and Houghton, and linked by them to parliamentary representation, reflecting their frustration at the limiting effects of parliament and the distribution of constituencies on the impact of political arithmetic.[99] Borrowing Petty's ideas, King proposed a new system to elect MPs, which would have divided voters into ten groups of taxpayers, each paying £1 million in tax.[100] This marked a shift from Restoration political arithmeticians, who had stressed strong executive control. The land tax was an important stimulus in reconciling political arithmetic to the post-revolution state for both political arithmeticians and parliament-men.

John Houghton's work offers a prime example of how political arithmeticians interacted with post-revolution politics through producing 'investments' in specific bills. Houghton submitted a petition for the debate of 30 December 1692, when the Commons began to discuss three proposals for improving the equality of the tax, including placing assessors under oath.[101] Houghton had announced his intention to publish on 1 June 1692, but deliberately postponed it until this stage of the parliamentary calendar to circulate the petition.[102] He had less interest in the treasury, submitting it a year after the pound rate was introduced in an attempt to strengthen the treasury's defence of the new rate.[103] Davenant crossed this parliament–treasury divide, as did King. Davenant's *Discourse on public revenue* was published on 23 December 1697, at the 'opening of the session', just as his *Essay on ways and means* had been published for 19 November 1694, a session that saw the defeat of an attempt to return to the monthly assessment.[104] This reflects the importance of publishing the votes, which allowed lobbyists to chart the progress of particular legislation and marks the transition of these writers from a court-centred polity,

[98] A role parliament was fulfilling in the 1620s, see C. Kyle, *Theater of state: parliament and political culture in early Stuart England* (Stanford, CA, 2012), pp. 119–45.

[99] Davenant, *An essay on the ways and means*, pp. 75–91; Houghton, 'An account of the acres and houses'.

[100] King, 'Burns journal', p. 250; H. W. E. Lansdowne, ed., *The Petty papers* (2 vols., London, 1928), II, pp. 7–11.

[101] Luttrell, *Diary*, p. 337; Houghton, 'An account of the acres and houses'; idem, *Collection for the improvement of husbandry and trade*, 25 (1693).

[102] Houghton, *Collection for the improvement of husbandry and trade*, 16 (1692).

[103] *CSPD*, 1693, p. 441; 'An account of the acres and houses, with the proportional tax of each county in England and Wales', TNA, State Papers 32/5, fo. 63.

[104] C. Davenant, *Postscript to a discourse of credit* (1701), p. 8; D. Waddell, 'The writings of Charles Davenant (1656–1714)', *Library*, 11 (1956), p. 207; Ward, *The English land tax*, p. 18.

participating instead in the growing culture of engagement with events in parliament by non-parliamentary elements of the political nation.

King's work, being solely in manuscript, is harder to place in specific moments in the passage of bills, but both he and Davenant, despite being out-of-favour tories under William III, actively lobbied decision-makers. Davenant knew, from the late 1670s, both Thomas Clarges, a public accounts commissioner during the 1690s, and Joseph Williamson, the ambassador to the Hague and an MP.[105] King's criticism of the unequal burden of the war efforts of Britain and Holland shared common ground with opponents of the Whig Junto, whilst his ability to project the impact of increased taxation attracted ministerial interest.[106] As a result, King compared his calculations on the yield of a four shilling aid with Lowndes, having also sent computations on the underassessment of the Duty Act to the lord of the treasury, Stephen Fox. He also wrote of the necessity of using more certain estimates to avoid being misled by the overestimates of projectors.[107] King corresponded with the country-politician, Robert Harley, in the first months of 1697, regarding the inequality of the north and west in the land tax assessment.[108] 'High' political arithmeticians recognized and responded to specific demands of ministers and MPs, who, in turn, actively sought numerical evidence to aid their management of legislation.

Houghton's work was on a larger scale. His parliamentary petition was twice referenced in his *Collection*,[109] which for seven weeks revolved around it as he commented throughout the passage of the land tax bill in early 1693. His discussion of the inequality between acreage, housing, and proportion of the tax paid assumed that readers knew the petition's contents. He created a temporary community around the political arithmetical elements of the land tax,[110] portraying his work as a 'collective project', with readers able to check calculations, with Houghton perceiving them as the 'proper judges' of its utility.[111] He brought an old patronage network – his friendship with Halley, who had calculated the acreage of England and Wales – before a national audience through a publishing network, adapting political arithmetic to the

[105] Charles Davenant to Williamson, Jan. 1678, TNA, State Papers 29/400, fo. 244, and Charles Davenant to Williamson, 22 Aug. 1678, State Papers 29/406, fo. 43.

[106] G. King, 'Natural and political observations and conclusions upon the state and condition of England, 1696', in G. Chalmers, ed., *An estimate of the comparative strength of Great Britain; and of the losses of her trade, from every war since the Revolution* (London, 1804), pp. 55–6, 62.

[107] King, 'Burns journal', pp. 152–4, 159, 241.

[108] Thirsk and Cooper, eds., *Seventeenth-century economic documents*, pp. 790–8; and R. Nares et al., *A catalogue of the Harleian manuscripts, in the British Museum* (4 vols., London, 1908–12), II, p. 317, III, pp. 421, 426.

[109] Houghton, *Collection for the improvement of husbandry and trade*, 25 and 32 (1693).

[110] Ibid., 29 and 30 (1693).

[111] N. Glaisyer, 'Readers, correspondents and communities', in A. Shepard and P. Withington, eds., *Communities in early modern England: networks, places, rhetoric* (Manchester, 2000), pp. 235–52, Houghton, 'An account of the acres and houses'.

market.[112] We can assume parliament-men were part of this group, for he mobilized Randal Taylor's political skills and networks,[113] instead of using his usual publishing site around the Royal Exchange. Houghton was certainly aiming at encouraging a pound rate in 1692/3, and its retention in 1693/4, in which he evidently had a degree of success considering the nature of his 'campaign'. In a parliamentary political culture that historians are increasingly showing to have 'permeable' boundaries, it is likely Houghton advised leading parliament-men, joining the economic writer John Cary, who was called twice to committees on wool in 1697, and Richard Frith and King, who were 'assistant[s] ... in preparing the [Duty Act]'.[114]

Davenant also wished to legitimize policy. His work cannot be linked to any specific persons, though his other works produced in late 1695 and early 1696 were likely to have been read by Harley, and his *Memoriall concerning credit* was addressed to Lord Godolphin 'in obedience to you lordships instructions' and later editions to treasury commissioners in an attempt to influence their plans.[115] Davenant's work aided the creation of a mood to abandon the pound rate, legitimizing the retreat from proportionality, believing a 'monthly assessment ... [would be] more practicable [in 1698]' and offer certainty to the treasury (which can be seen to be its main concern after 1698, when it collected monthly yields). The pound rate, which was best at the beginning of the war, had failed to achieve better proportionality,[116] but this could only be acknowledged in peacetime, and Davenant wished to influence its replacement. Arguments expressed by political arithmeticians were mobilized by all sides and their quantification of county inequality played into the already present county-dynamic of legislation.

If we consider that the Commons refused to accept petitions in 1697 relating to bills imposing a tax for the current year,[117] this suggests a mood against projectors and political arithmeticians. Parliamentary reports, however, filled this gap. The real challenge to these groups came in the lack of dissemination of parliamentary data beyond Westminster. Efficient and accurate distribution of data from parliament was hard to achieve with accounts of proceedings often burnt and the author and publishers examined by committee.[118] Only after Robert Walpole's fall did the Commons publish its journals and some fiscal

[112] Houghton, *Collection for the improvement of husbandry and trade*, 25 (1693).

[113] M. Treadwell, 'London trade publishers, 1675–1750', *Library*, 4 (1982), p. 124.

[114] King, 'Burns journal', p. 264; C. Whitworth, ed., *The political and commercial works ... of Charles D'Avenant* (5 vols., 1771), IV, pp. 145–6; *The minute book of James Courthope*, ed. Williams, p. 60; C. Brooks, 'Projecting, political arithmetic and the act of 1695', *English Historical Review*, 97 (1982), pp. 31–53, at p. 42. For lobbying, see C. Kyle and J. Peacey, 'Under much coming and going', in their *Parliament at work: parliamentary committees, political power and public access in early modern England* (London, 2002), pp. 1–23.

[115] G. Holmes, 'Gregory King and the social structure of pre-industrial England', *Transactions of the Royal Historical Society*, 27 (1977), pp. 41–68, at p. 46 n. 23.

[116] Davenant, *Discourses on the publick revenues*, II, pp. 240–1.

[117] Hatsell, *Precedents of proceedings*, III, pp. 234–5.

[118] *CJ*, XII, pp. 601–2.

accounts.[119] Following Petty, Davenant depended on personal connections for data for his calculations. He gained his county yields from 'Mr ar. Mo, a very knowing person',[120] who was later MP for Great Grimsby, although the data, despite being published in 1694, only covered yields to 1692. King went to the exchequer himself for the records of the first four shilling aid.[121] This continuity with Restoration political arithmetic, where 'high' political arithmeticians remained dependent on personal connections for data, limited parliament's importance as a place for dissemination of information, though it now set the rhythm of public debate. The trinity of collection of information, its interpretation and publishing was not achieved under William due to parliament's attempts to maintain secrecy.

IV

Political arithmeticians recognized the shift that occurred after 1688–9. The lack of treasury control meant that arithmeticians could no longer lobby a single power or authority, as its original practitioners had done, having seen political arithmetic as something solely for 'the sovereign and his chief ministers'.[122] Graunt addressed his *Natural and political observations* to the privy councillor Lord Roberts, though he also believed magistrates should be involved.[123] Petty focused his attempts on demonstrating how political arithmetic could frame decision-making options to James II, lobbying to gain a permanent court position as 'accounter general'.[124] However, when recalling the history of political arithmetic since Petty, Davenant reflected that it was no longer focused on 'statesmen' to inform them 'how to reason upon things by figures', but also that the 'subordinate and ministerial parts of government' needed to be involved after 1689,[125] reflecting his awareness of the range of members listed in Table 3.

The diffused nature of decision-making and the use of political arithmetic forced political arithmeticians to 'lobby' on the land tax and to interact with published pamphlets, especially after the lapsing of the Licensing Act in 1695. These advances in publication meant political arithmetic could no longer be limited to enlightened rulers as Bacon and Petty had wanted, but instead became an important weapon in the committee members' and partisans' arsenal because of the neutrality arithmetic professed. It did not create these divides, only strengthening county competition; instead it was primarily a language used to legitimize arguments that arose during the rise of 'new finance' and the funding of the Nine Year's War after the Glorious Revolution.

[119] J. Innes, *Inferior politics: social problems and social policies in eighteenth-century Britain* (Oxford, 2009), pp. 144–5.
[120] Davenant, *An essay on the ways and means*, p. 79.
[121] King, 'Burns journal', pp. 152–4.
[122] Graunt, *Natural and political observations*, p. 74.
[123] Ibid., pp. i, 12, 59.
[124] Lansdowne, *Petty–Southwell correspondence*, pp. 230–1, 252, 282.
[125] Davenant, *Discourses on the publick revenues*, I, p. 14.

The politicking around the land tax was a question of mobilizing support and contemporaries were concerned that mis-writings would damage their claims to represent the landed interest and their county, and so endeavoured to use numerical proof.

Political arithmetic was a means to negotiate opinion, which also strengthened the need to do this, because it aided the dispersed nature of leadership as the Commons sought fiscal advice from commissioners and treasury ministers. Information presented to the Commons was handled by its members unimaginatively and data for the land tax was hindered by the lack of procedural modernization, and the impact of reports limited by the political culture. Ad hoc investigations show, however, that parliament-men and pamphleteers were willing, and expected, to reason with numbers and cross-examine data. It suggests that the claim that 'underassessment was tolerated by central government', is incorrect, with the treasury attempting to strengthen its capacities.[126] This article explores a neglected aspect of policy formation and shows that the land tax debates were not solely about county interest, with the Commons more open to lobbying than Beckett or Ward allowed, with outsiders having the knowledge and audience to influence the process. Policy-makers conceptualized their world in terms of county communities, but also in quantitative terms, which itself strengthened animosity between counties, and the importance of regional, rather than national, political allegiances. Political arithmetic was institutionalized in parliamentary bodies, publicizing the methods from which political arithmeticians worked. The practices seen between 1697 and 1699 were institutionalized and employed when the Commons considered the land tax rate in the 1720s.

[126] C. Brooks, 'Public finance and political stability: the administration of the land tax, 1688–1720', *Historical Journal*, 17 (1974), pp. 281–300, at p. 282.