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DISSECTING THE SINEWS OF POWER:
INTERNATIONAL TRADE AND THE RISE OF
BRITAIN'S FISCAL-MILITARY STATE, 1689-1823

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Dissecting the Sinews of Power: International Trade and the Rise of Britain's Fiscal-Military State, 1689-1823

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ABSTRACT

We evaluate the role of taxes on trade in the development of imperial Britain's fiscal-military state. Influential work, e.g., Brewer's (1989) "Sinews of Power," attributed increased fiscal capacity to the taxation of domestic, rather than traded, goods: excise revenues, coarsely associated with domestic goods, grew faster than customs revenues. We construct new historical revenue series disaggregating excise revenues from traded and domestic goods. We find substantial growth in taxes on traded goods, accounting for over half of indirect taxation around 1800. This challenges the conventional wisdom attributing the development of the British state to domestic factors: international factors mattered, too.

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1 Introduction

British expansion from the 17th to the 19th centuries established the largest empire in history and formed the context for the emergence of modern economic growth. In those centuries, Britain's capacity to wage and win wars relied on the expansion of the fiscal capacity of its state (O'Brien, 1988). Where did Britain get the revenue required to pay for its ships and men, and to repay the debts it incurred in fighting its wars? If revenues were primarily raised from domestic economic activity, this would support the conventional view among political economists that Britain's economic and political development relied mainly on internal factors (e.g., Britain's domestic political institutions and economic dynamism); if revenues were primarily raised from international trade, this would shift emphasis toward external factors (e.g., trade relying on imperial expansion).

Historical scholarship on the development of the British fiscal-military state — most notably Brewer's (1989) *Sinews of Power* — has emphasized the importance of increased excise tax revenue.¹ The excise tax has been treated by many historians as a tax on goods produced (and consumed) *domestically*; the importance of excise tax revenue thus suggests a central role for revenue generated from domestic economic activity, as opposed to revenue generated from trade passing through customs. This account rhymes well with a broader literature that considers domestic institutions in Britain to be the primary drivers of economic growth (e.g., North and Weingast, 1989; Acemoglu et al., 2005; Acemoglu and Robinson, 2012). Britain's empire, according to conventional wisdom, was built on its own production, and an efficient internal tax administration that extracted revenue from it. This conventional wisdom continues to influence the literature on the political economy of historical development (e.g., Besley and Persson, 2011; Acemoglu and Robinson, 2019; Koyama and Rubin, 2022; Angelucci et al., 2022).

In this paper, we challenge this conventional wisdom. Although long overlooked, from its inception the excise was a tax on goods produced and consumed domestically, and *also* on goods traded internationally. Indeed, recent scholarship (Hoppit, 2017), while lacking comprehensive revenue data, suggests that taxes on traded goods like tea, tobacco, and foreign spirits made up a

¹See also Mitchell (1988).

significant share of excise tax revenue in the 18th century.² Evaluating the role of traded goods in Britain's increased tax revenues thus requires data more disaggregated than the coarse categories (e.g., "Customs," "Excise," "Stamps," ...) reported in the primary source relied on by the reference work on Britain's fiscal development (i.e., Mitchell (1988) and Brewer (1989)).³

We construct such disaggregated data from sources in the National Archives (TNA) collection "Records of the Board of Customs, Excise and Customs and Excise, and HM Revenue and Customs" (these are referenced under *CUST 145*).⁴ These sources allow us to calculate yearly excise revenue raised *by commodity*. Thus, we can decompose the excise revenue according to whether the good being taxed is produced and consumed domestically (henceforth "domestic"), or instead produced abroad but consumed domestically, or produced domestically but consumed abroad (i.e., goods imported or exported; henceforth "traded"). We also construct new disaggregated customs revenue series that allow us to identify customs on traded goods as well as customs on domestically-produced coal. To construct the customs series, we relied primarily on the National Archives collection "HM Treasury – Accounts and Ledgers" as well as the collection "Board of Customs: Statistics: Revenue".⁵

That domestically-produced coal was taxed at customs is further evidence that the distinction between customs and excise reflected the management of the tax collection process, not the origin of the goods being taxed. This is clear when directly consulting the primary sources. These sources, however, present several challenges (that perhaps contributed to historians' longstanding reliance on secondary, more aggregate sources). The archival sources often present revenues at different levels of aggregation, and often have ambiguous labels. For example, *CUST 145/22* includes a category labeled "Excise," which is evidently *not* all of the traditional excise (i.e., that reported by Brewer, 1989), because it also lists categories like "soap" and "candles" separately, which are part of the traditional excise. The "Excise" subcategory in *CUST 145/22* is disaggre-

²The need to disaggregate excise revenues was noted also by O'Brien (1988).

³The primary source was a compilation produced for Parliament in the second half of the 19th century, "Accounts of public income and expenditure 1688-1869," (PP 1868–9, xxxv), referenced by Brewer as "British Parliamentary Papers, vol. 35 (1868–9).

⁴This collection is part of the larger set of documents stored at the British National Archives, "Board of Customs and Excise and predecessors: Excise Duties, Receipts, Payments and Rates." We rely primarily on *CUST 145/8*, *CUST 145/12*, *CUST 145/18*, *CUST 145/20*, and *CUST 145/22*.

⁵We primarily rely on *T 35/55*, *T 38/357*, and *CUST 37/50*.

gated in *CUST 145/12*. Yet, it is clear that *CUST 145/12* alone is insufficient because it leaves out the categories like soap and candles that are reported in *CUST 145/22*. Thus, constructing a comprehensive excise series disaggregated by product requires careful cross-referencing of categories across primary sources.

In some cases, categories may be too broad to allow unambiguous assignment into domestic or traded categories (e.g., salt and vinegar). We thus construct estimates of disaggregated excise revenue reflecting conservative assumptions regarding the revenue raised from traded goods. For example, we compute revenues collected on salt as domestic, though some salt was certainly imported. Nor do we make an effort to decompose the tax revenue on domestically-produced goods with a traded component to their value added. For example, taxes on domestically processed textiles are treated as domestic taxation even when the main input (e.g., a less processed textile) was produced abroad and represented a significant share of the value added.⁶

Even under these conservative assumptions, our data overturn the conventional wisdom regarding the importance of domestic taxation versus taxes on trade to Britain's fiscal development. The data in Mitchell (1988) and Brewer (1989) suggest that in the early 18th century, taxes on traded goods represented a *minority* — around 40% — of total indirect taxes (i.e., taxes on both traded and domestically produced goods). Over the 18th century and into the early 19th century, total revenues greatly expanded, and Mitchell (1988) and Brewer (1989) suggest that the tax share of traded goods fell in this period to around 30% of total indirect taxes. In contrast, our series show that the tax share of traded goods *grew* from around 40% of indirect taxation early in the 18th century to more than 50% around 1800. During the first quarter of the nineteenth century, traded goods provided a *majority* of the revenue from taxed goods. Accounting for revenues collected from traded goods and then used to subsidize exports and promote other national objectives (i.e., revenues spent on “bounties”) slightly increases this share further.⁷ The increase in revenues from traded goods from 1689 to the early 19th century accounts for more than half of the overall increase in indirect tax revenues. Tax revenues from overseas trade thus represented a substantial

⁶We leave for future work a more complete accounting of the role of trade in the rise of the British state and the British economy. This would require not only addressing the challenges noted above, but also more precisely estimating spillovers across sectors and the dynamic consequences of trade for the British economy.

⁷The revenues used for bounties did not reach the Exchequer and so were excluded from the revenue figures in Mitchell (1988) and Brewer (1989).

component of the fiscal expansion that funded Britain's imperial dominance.

Our findings have important implications for British and global economic history. Most directly, we contribute new data on British revenues over time that improve upon the standard references (Mitchell, 1988; Brewer, 1989). We join Hoppit (2017) in arguing against the traditional treatment of the excise as taxation of domestic production and provide improved, disaggregated data on both excise revenue and customs revenue from 1689 to 1823. In so doing, we contribute fundamental new evidence to the literature analyzing Britain's fiscal development in the early modern era (e.g., O'Brien, 2011; Murphy, 2013; Cox, 2016; Dickson, 2017).

In a narrow sense, our disaggregation of the excise allows to connect Britain's rising fiscal capacity in the 18th and 19th centuries to specific goods. In particular, we show that the taxation of products with inelastic demand — so called “drug foods” (Mintz, 1985) — provided a large share of Britain's rising tax revenue. Thus, we add to a literature that emphasizes the importance of trade and colonies to the development of the modern Atlantic economies (e.g., O'Brien, 1982; Pomeranz, 2000; Acemoglu et al., 2005; Findlay and O'Rourke, 2007; Palma, 2016; Henriques and Palma, 2019; Hersh and Voth, 2022).

In a broader sense, by placing international trade at the center of the fiscal changes experienced in Britain in the early modern era, we contribute to a reassessment of the drivers of British dominance. Received scholarship explains the rise of modern states by reference to war among European nations in the 16th to 19th centuries (Tilly et al., 1975; Bonney, 1999; Dincecco, 2011). Wars mattered because they induced investments in fiscal capacity that could then be used to fund a growing state that supported the economy (Besley and Persson, 2009). As war became more costly, it was the states able to raise more revenue that prevailed (Gennaioli and Voth, 2015; Cantoni et al., 2022). Britain was the winner of that fiscal-military competition. Therefore, identifying the sources of Britain's fiscal strength is pivotal to understanding the process of modern state formation. While wars among European powers produced a need for fiscal capacity for all contenders, we show that international trade contributed substantial means to building the fiscal capacity of the winner.

Because the trade that shored up Britain's fiscal capacity was conducted within the institutional context of the British Empire, our work relates to the literature that emphasizes the role

of empire and coercion in the historical development of capitalism (e.g., Williams, 2021; Findlay and O'Rourke, 2007; Beckert, 2014; Levy, 2021; Heblich et al., 2022).⁸ These authors consider that a strong fiscal-military state helped Britain dominate trade. Findlay and O'Rourke (2007) also propose that trade fed back into the fiscal-military state through the taxable wealth it created. This, they argue, established a mutually reinforcing relationship between economic activity and the development of the coercive power of the state.⁹ In the case of Britain, the possibility of such mutually-reinforcing relationship was negated by the conventional wisdom seeing domestic goods as the main contributors to Britain's fiscal might. Our finding that international trade provided a substantial share of indirect taxes not only counters the conventional wisdom on fiscal matters. Our finding also increases the plausibility of explanations in which empire was a driver of Britain's military and economic success.

In what follows, in Section 2, we describe the role of excise and customs taxes in funding the British state, particularly in times of war. In Section 3, we discuss the existing historical literature on the excise tax. In Section 4, we describe the historical data sources we rely on to construct new, disaggregated excise and customs revenue statistics. In Section 5, we present our newly constructed revenue time series. We conclude in Section 6.

2 Background: War and taxes in early modern Britain

Britain's fiscal capacity, like that of many early-modern European states, was developed in a context of recurrent warfare. In the 17th to 19th centuries, Britain's wars were increasingly conducted overseas, facilitating Britain's mercantilist economic policy.

Brecke (1999) provides comprehensive information on conflicts since 1400. From this data, we constructed time-series of Britain's military activity, as well as that of other Atlantic trading powers: France, the Netherlands, Portugal, and Spain. We also identify which conflicts involve fighting away from the European continent. From the 18th century on, Britain became the most belligerent power, and the one most frequently involved in overseas wars. In the 1600–1850 pe-

⁸Of course, there were other important contributors to the emergence of the industrial revolution in Britain, from resource endowments (Allen, 2009); to culture (Mokyr, 2010); to political institutions (North and Weingast, 1989; Acemoglu and Robinson, 2012).

⁹See also Sánchez de la Sierra, 2020; Acemoglu and Robinson, 2019; Dal Bó et al., 2022; Beraja et al., 2021.

riod, Britain fought 273 wars compared to 229 for France, the second most belligerent European power during the period. Moreover, England is the nation that shifted most aggressively toward fighting wars overseas. During the period 1600–1700, England fought 39 percent of its wars overseas, but this percentage increases to 65 in the period 1700–1850.

Britain’s empire was built on winning these wars, that were so frequently overseas, with its dominant navy. Glete (1993) provides detailed information on the capacity of Britain’s navy and the navies of its European rivals. We transcribed and harmonized the data on navy strengths in Glete, 1993, and found that during the period 1600–1800, when Britain developed its fiscal capacity, fought wars, and expanded its empire, its naval strength overtook that of all of its European rivals. First it overtook the Dutch in the second half of the 17th century, and then the French in the early 18th century.

Such naval superiority was expensive. For example, Findlay and O’Rourke (2007), citing Baugh (2004), note that “[A] 74-gun ship costing £50,000 to build in 1780 when the largest factory in England cost only a tenth of that amount.” It is thus unsurprising that each major war Britain fought was associated with an increase in its stock of government debt (see Online Appendix Figure A.1). This debt was backed by the promise of government tax revenue, and new taxes were regularly issued in a manner explicitly linked to the demands of war. For example, in 1689, Parliament passed “An Act for granting to Their Majesties a Subsidie of Tonnage and Poundage and other Sums of Money payable upon Merchandizes Exported and Imported” (2 W&M, sess. 1, cap. 4). Parliament passed this bill “for the better enabling your Majestyes to prosecute the present Warr against the French King and for the reduceing of Ireland.”

3 The excise: existing scholarship and an assessment of historical fiscal motives

The conventional wisdom on the excise tax is built on three pillars, all of which are well-summarized by Brewer (1989). First, its *domestic scope*: Brewer (1989, p. 56) writes that, “The excise was an indirect commodity tax on domestically produced goods, levied either at their point of production or distribution.” Second, compared to the customs tax, its great and increasing *rel-*

ative importance: Brewer (1989, p. 80) presents data showing approximately equal levels of excise and customs revenues collected around 1700, and excise revenue levels that are more than double customs revenues in the late 1700s. Third, its *contribution to state development*: Brewer (1989, p. 56) writes that, “Excises became the largest category of taxes, excisemen the biggest body of officials, and the Excise Office a byword for administrative efficiency. . . . [T]he English Excise more closely approximated to Max Weber’s idea of bureaucracy than any other government agency in eighteenth-century Europe.”¹⁰ There is some truth in this conventional wisdom: excise revenues did grow throughout the 18th century; the excise administration was an early example of an efficient government bureaucracy.

However, the conventional wisdom is incorrect in viewing the excise tax or the growth in excise revenues as entirely driven by domestic forces. This is evident, qualitatively, in the first excise bill passed by Parliament in 1643, which imposed a tax on, “[A]ll and every the Merchants and **Importers** of the said **Forraign** Commodities in the said Schedule mentioned.”¹¹ In a history of the excise, the Boards of Customs and Excise describe how “At the Accession of James II [in 1685], the Temporary Excises were renewed for his life, and increased by additional duties on Wine, Vinegar, Tobacco, and Sugar.” Needless to say, Britain did not produce tobacco or sugar domestically in 1685.¹²

To move beyond this initial assessment, we more systematically examine the military motives behind tax bills, as well as the importance of taxes on trade during the later Stuart reigns (those of William & Mary and of Queen Anne), when the excise and customs regimes of the 18th century were established.¹³ We read and classify every tax bill in 1689–1714 according to its mention of war and/or trade. Roughly 40 percent of bills across both rulers were “Public,” and could involve

¹⁰Brewer is not alone in taking any of these positions. Beckett and Turner (1990) and Ashworth and Ashworth (2003) join Brewer in treating excise as a tax on domestic production. The data series on customs and excise taxation in Mitchell (1988) are constructed from precisely the same coarse historical source as Brewer: the “Accounts of public income and expenditure 1688-1869.” The efficiency and importance of the excise administration are emphasized by Coffman (2013).

¹¹Emphasis added by the authors. The bill is TNA/CUST 145/15, “An Ordinance of the Lords and Commons, In Parliament, for the speedy Raising and Levying of Monies by Way of Charge and New Impost, upon the several Commodities in a Schedule annexed,” September 11, 1643.

¹²The history of the excise quoted is CUST 155/7, “Some Account of the Excise Duties,” 1829.

¹³Studying the Hanoverian monarchs of the 18th century is less revealing. Because the systems of excise and customs were already established, there were fewer tax bills. In addition, because the purpose of taxation — to pay for war — became self-evident, it also became implicit, rather than explicit, in tax bills.

Table 1: Classification of Tax Bills in 1689-1714: Financing Wars and Taxing Trade

	(1)	(2)	(3)	(4)	(5)	(6)
		Share of bills:		Tax bills:	Tax bills mention:	
Reign:	Bills	Private	Public	Share of Public	War	War & Trade
1689-1702: William & Mary	807	0.58	0.42	0.22	0.81	0.36
1702-1714: Queen Anne	943	0.64	0.36	0.20	0.77	0.50
Total:	1750	0.61	0.39	0.21	0.79	0.43

Note: This table reports the classification of bills passed during the reigns of William & Mary and Queen Anne. The coding is based on the authors' reading of the bills. Column 1 reports the count of all bills in each reign. Columns 2 and 3 decompose the count into the share of private and public bills respectively. Column 4 reports the share of public bills that are tax bills, column 5 reports the share of tax bills that mention military aims, and column 6 reports the share of tax bills that mention military aims and also include traded goods. Bills from the reign of William III are included in row 1 with William & Mary. See section 3 for a discussion of the coding.

matters of taxation.¹⁴ We find that around 80% of public tax bills mention military, colonial, or defense (i.e., "war-related") objectives in their text; during the rule of William and Mary, 36% of tax bills mentioned *both* war and taxes on traded goods, and this simultaneous mention rises to 50% during Queen Anne's reign (see Table 1).

One may still worry that even if many excise bills mentioned trade, traded goods could still have been marginal to the excise. Hoppit (2017) has collected evidence suggesting not only that excise taxes were collected on traded goods as Britain's fiscal capacity expanded, but also that the role of traded goods was substantial and growing. Hoppit (2017, p. 293) presents data showing that in 1741, of the excise revenue collected in London (one-third of all British excise), imported tea and liquors accounted for nearly 40%. In 1796, imported tea, spirits, wine, and tobacco and snuff accounted for nearly two-thirds of London's excise revenue. These data points, as well as our analysis of excise legislation, suggest the need to re-examine the historical evidence that sustains the conventional wisdom. As noted above, such a re-examination requires disaggregated data from archival sources that have not yet been systematically used.

¹⁴"Private" bills, in turn, affected some particular interest more circumscribed than the general public. Examples are bills affecting communal rights of passage, or roads.

4 Constructing new series of excise and customs revenues

4.1 Excise revenues

To construct our disaggregated excise tax dataset, we begin with *CUST 145/22*. This source is sufficient to construct, by individual good, yearly revenue series from 1788 onward, allowing us to classify revenues as originating in trade or from domestic production. Prior to 1788, *CUST 145/22* is not fully disaggregated. It presents good-level excise and inland revenues for many goods that fall under the traditional heading of “excise.” These include glass, soap, paper, tea, and chocolate, among others (see Online Appendix Figure A.2 for an image of *CUST 145/22*). Unfortunately, *CUST 145/22* also includes a category labeled “Excise” which requires further disaggregation. It is a subcategory of what is traditionally regarded as excise, and it aggregates revenues from different types of alcohol.

To disaggregate the “Excise” category from *CUST 145/22*, we turn to *CUST 145/8* and *CUST 145/12* for the years up to 1787.¹⁵ These sources include revenues information on various categories of alcohol, which add up to the “Excise” category from *CUST 145/22*. However they do not include the other disaggregated revenues that are reported in *CUST 145/22* (glass, soap, paper, tea, etc.), meaning that we need to combine information from *CUST 145/22*, *CUST 145/8*, and *CUST 145/12*.

The next step is to convert the revenues information on various types of alcohol from *CUST 145/8* and *CUST 145/12* into revenue data by good at a disaggregated enough level to allow assignment to traded or domestic categories. In some cases, e.g., “British Spirits”, this can be done directly from the source. However, most of the revenue reported in *CUST 145/8* and *CUST 145/12* is organized *not* according to good, but according to the acts under which taxes were collected (e.g., “IX Continued quarto Annae”) or allocated (e.g., “Hereditary and Temporary Excise”).

To convert act-level revenues into revenues by good, we first identify which goods are taxed under a given act. Then, we rely on data on taxed *quantities* by good and year, as well as tax *rates* by

¹⁵*CUST 145/8* and *CUST 145/12* include the same information; we rely on both sources to overcome the challenge of illegible documents (see Online Appendix Figure A.3 for an image of *CUST 145/12*).

good and year to calculate the revenues by good and year that fall under a particular act.¹⁶ When rates are ambiguous (for example, imported brandy might be taxed under the French brandy rate or as generic foreign brandy) we assign the lower rate to calculate the revenue from traded goods conservatively.

A final obstacle in identifying revenue from traded versus domestic goods is the temporary revenue category, “P Cent” (a percentage tax temporarily levied on selected commodities). This category of excise appeared in the *CUST 145/22* series between 1779 and 1787 and included both traded and domestic goods. To disaggregate the category, we use *CUST 145/20*, which shows the yearly contributions of each of the goods charged “P Cent” duties (e.g., tea and foreign spirits, among others).

4.2 Customs revenues

The vast majority of customs revenues were collected from traded goods, as one would expect. The primary domestic good that was taxed under customs was coal. In addition, other domestically produced goods were taxed under customs as “carried coastways goods.” We assign these revenues to domestic production, along with taxes levied on coal.¹⁷ In addition, from 1786–1806, a tax on windows (under the Commutation Act of 1784) was included in the customs revenues, and we assign these revenues to domestic production as well.¹⁸

Disaggregated customs revenues data come from multiple historical sources. To disaggregate total customs revenues into revenues from traded goods and revenues from domestically produced goods, we mainly rely on *T 35/55*, *CUST 37/1*, *T 38/357*, and *CUST 37/50*. These series end in 1806. We supplement with detailed tables on revenues by good or by act from the Parliamentary

¹⁶This is not always trivial: for example, rum is in some years implicitly taxed at the same rate as imported brandy, and sometimes taxed as a distinct commodity. For quantities of taxed goods we relied on *CUST 145/20*. For rates, we relied on *CUST 145/3*, *CUST 145/4*, *CUST 145/11*, *CUST 145/12*, *CUST 145/18*, and *CUST 145/20*, as well as printed primary sources and Parliamentary bills (e.g., Crouch, 1731, Baldwin, 1770, and 6 Geo. II, cap. 17). It is important to note that this “bottom up” approach may miss some revenues (e.g., temporary excises). Such measurement error is likely small, however: in Figure 1, below, we show that our aggregate Excise and Custom revenues are extremely close to those in (Mitchell, 1988) and Brewer (1989).

¹⁷While the vast majority of customs revenues collected from coal are on domestic consumption, a small share of customs revenues are collected from the international export of coal. We count the latter revenues as revenues on traded goods.

¹⁸The tax on windows is included under customs because it was enacted alongside a reduction in the tax rate on tea under the Commutation Act, and was managed by customs.

Papers for 1807-1818.

4.3 Methodological choices

We first identified goods that were undoubtedly traded internationally and taxed under the excise. Some of these goods, like foreign spirits, are labeled as such. Others are not labeled as foreign, but were certainly produced outside Britain, like tea, coffee and cocoa nuts, tobacco, and pepper. We also treat wine as traded - in contrast with “low wine”, which was recorded separately, and which may have included some domestic production.

This makes for an extremely conservative calculation of revenues from traded goods — a lower bound. When it is possible that a positive share of a good may have been domestic, we assign it to the domestic category. For example, we do not include in our estimated revenues from trade those revenues collected on hides or salt, though some hides and salt were certainly imported. In addition, taxes on domestically processed textiles are treated as domestic taxation even when the raw input (e.g., a less processed textile, or raw materials like silk or cotton) was produced abroad and represents a significant share of the value added.

We follow the approach of Mitchell (1988) and Brewer (1989) in that we report revenues net of: (i) the costs of running the respective tax administrations (i.e. “management costs”); (ii) refunds on import duties paid to re-exporters (called “drawbacks”); and, (iii) revenues used directly to subsidize domestic producers’ exports or to pay for other national objectives (called “bounties”) that never reached the Exchequer. To be precise, we collect information on the “Payments into Exchequer” for both customs and excise.¹⁹

While netting out the cost of the tax administration matches standard practice, and while refunds paid to re-exporters do not directly contribute to the strategic policy aims of the state, bounty revenues *were* used to support the state’s policy aims. Bounty revenues collected by customs officers from traded goods and used to pay domestic corn producers or to support the civil government of Scotland (to give two prominent examples) may not have reached the Exchequer, but they supported the state’s strategic objectives, nonetheless. Information on these bounty pay-

¹⁹We also follow Mitchell (1988) and Brewer (1989) in reporting revenues in millions of pounds in nominal terms. It is worth noting that the revenue increases over the time period we cover were not driven by higher price levels. Inflation over the period studied was low — below one percent per year (Thomas and Dimsdale, 2017).

ments were not available in the primary sources consulted by Mitchell (1988) and Brewer (1989), but we are able to identify this category of revenue, collected from both traded and domestic goods. We thus construct separate series of revenues from traded and domestic goods that include the bounty revenues in addition to the “Payments into Exchequer.” In order to keep our exposition as close as possible to that in the received literature, in the main text we focus on revenue series corresponding to “Payments into Exchequer,” and include bounties in series reported in the Online Appendix (all data reported in Online Appendix A).

5 Empirical patterns

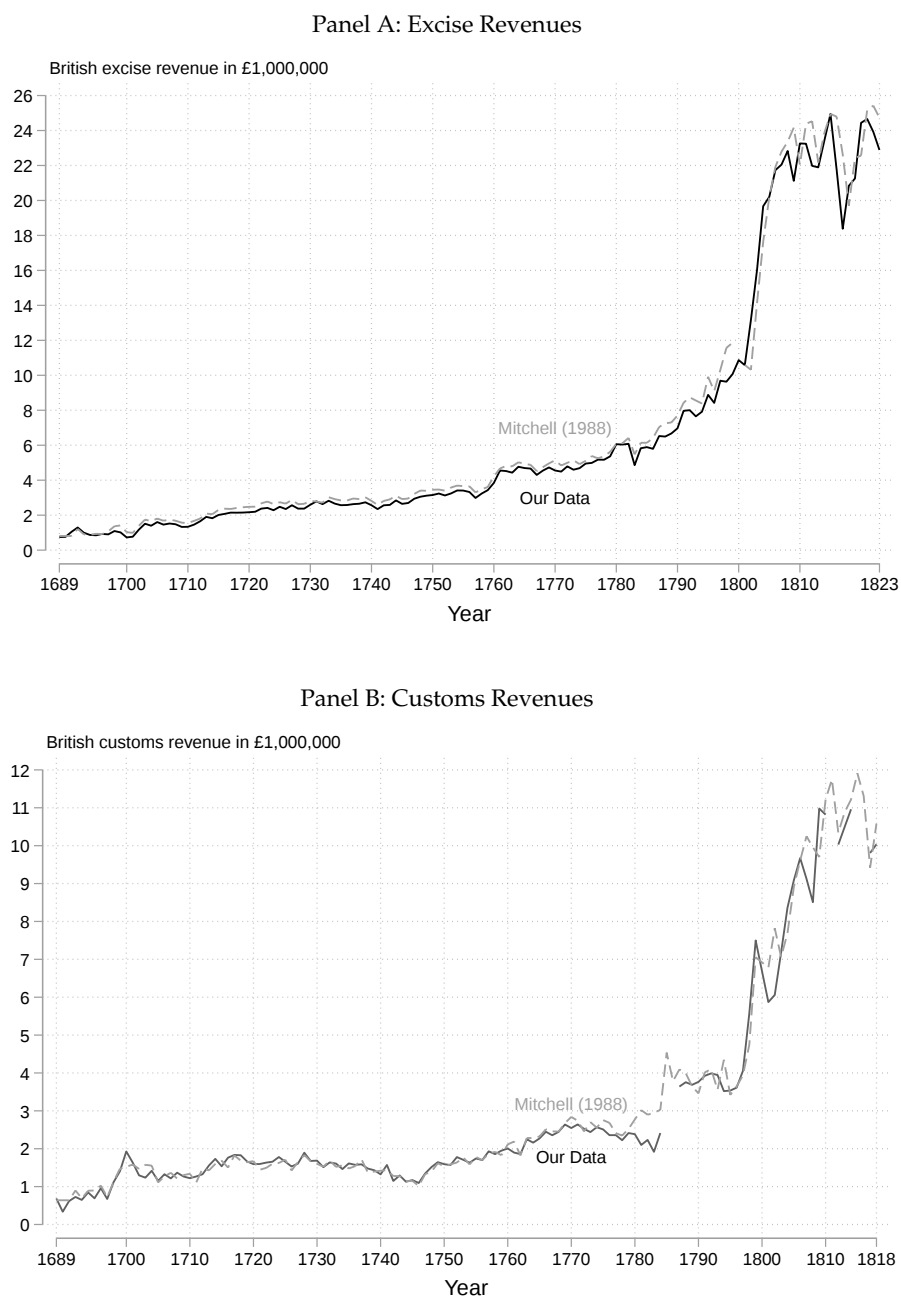
5.1 New vs. old series: comparison in the aggregate

We begin by comparing our total excise revenue and customs revenue series for the years 1689–1823 with those in Mitchell (1988), the standard reference (which is based on the same historical source as Brewer, 1989). In Figure 1, Panel A, one can see that our construction of total excise revenue closely matches the aggregate excise data reported previously by Mitchell (1988)).²⁰ Including the bounties in our excise data series has minimal effect (see Online Appendix Figure A.4). In Figure 1, Panel B, one can see that our construction of total customs revenue again closely matches aggregate data that have previously been collected (Mitchell, 1988). Adding the bounties to our customs data series has a more noticeable effect, but again the broad patterns of total revenue match those in Mitchell (1988). It is worth emphasizing that our data come from a different set of far more disaggregated historical sources; it is reassuring that these data yield aggregate patterns that match the established historical data sources.²¹

²⁰Our yearly total excise, total customs, bounty, and disaggregated customs and excise data are provided in Online Appendix Tables A.1–A.4.

²¹Note that the disaggregated data sources for Customs are missing for 1785–1786.

Figure 1: Comparison of Aggregate Excise and Customs Revenues with Mitchell (1988)



Note: This figure compares the aggregate patterns of excise and customs revenues of the British government (in £1,000,000) as calculated by the authors (black, solid lines) with those reported in Mitchell (1988) (as grey, dashed lines). Panel A reports the excise revenues for 1689-1823, and Panel B reports the customs revenues for 1689-1818. Gaps in the lines indicate years with missing data. See Section 4 for a description of the data and methodology. See Online Appendix Figure A.4 for a version of this figure which includes revenues spent to finance bounties.

5.2 New vs. old series: comparison of disaggregated data

We next decompose aggregate revenues into revenues collected from traded goods and revenues collected from domestic goods. Let $RevenueTrade_t$ denote the tax revenue raised on internationally traded goods, $RevenueDomestic_t$ denote the tax revenue raised on domestic goods, $Customs_t$ the tax revenue collected by customs, and $Excise_t$ the tax revenue collected as excise, all during year t . The approach in Brewer (1989) (using the same data as Mitchell, 1988), is to assume the following two equalities hold:

$$\begin{aligned} RevenueTrade_t &= Customs_t, \text{ and} \\ RevenueDomestic_t &= Excise_t. \end{aligned}$$

Then, following Brewer (1989), the trade-related share of total indirect tax revenue (i.e., the sum of taxes from traded and domestic goods) would be calculated as:

$$ShareTrade_t = \frac{Customs_t}{Customs_t + Excise_t}.$$

But as we have argued, it is incorrect to equate taxes on traded goods to taxes generated by customs, and taxes on domestic goods to the excise. It is necessary to define $CustomsCoal_t$ to denote tax revenue collected by customs on coal (a domestic product), $ExciseDomestic_t$ to denote excise taxes raised on domestic goods, and $ExciseTrade_t$ to denote excise taxes on traded goods. Then, using our disaggregated excise and customs data we can calculate:

$$\begin{aligned} RevenueTrade_t &= Customs_t - CustomsCoal_t + ExciseTrade_t, \text{ and} \\ RevenueDomestic_t &= ExciseDomestic_t + CustomsCoal_t. \end{aligned}$$

As a result, the trade-related share of total revenue is:

$$ShareTrade_t = \frac{RevenueTrade_t}{RevenueTrade_t + RevenueDomestic_t}.$$

Importantly, we can construct these time series restricting revenues to those paid to the Exchequer (as in Mitchell, 1988, and Brewer, 1989) or including also the revenues used to pay bounties.

In Figure 2, Panel A, we first show the levels of revenues from customs and excise as presented in Mitchell (1988) and Brewer (1989). Revenues are stacked on top of each other to sum to

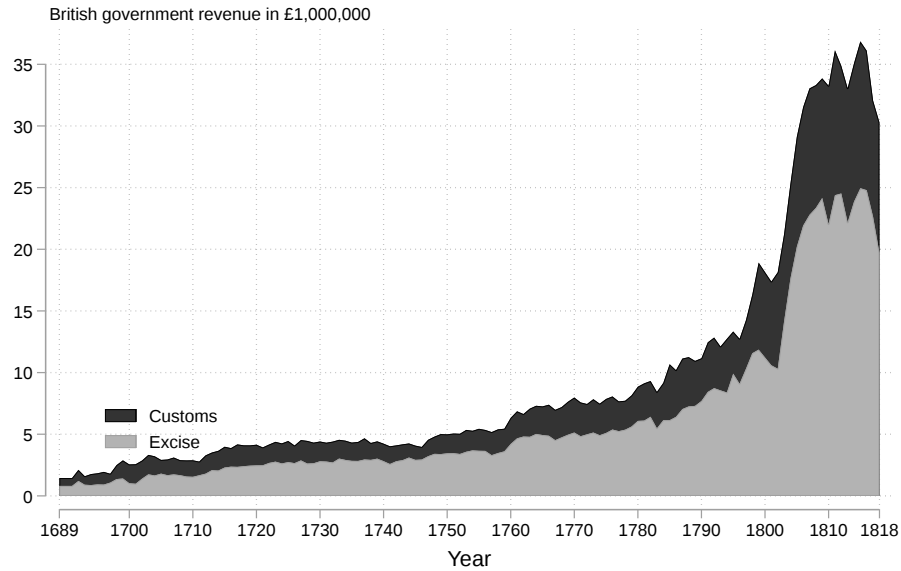
total revenue from indirect taxes. One can see two patterns. First, that excise revenue is substantially larger than customs revenue throughout the time period. Second, in the Mitchell (1988) and Brewer (1989) treatment, taxes on “domestic production” — to be precise, excise revenues — account for the bulk of enormous increase in revenues in the late 18th and early 19th centuries.

In Figure 2, Panel B, we show the levels of revenues from *traded* and *domestic* goods as we calculate them.²² A very different pattern of revenue growth appears. Revenue from traded goods *increases*, rather than declines in importance as the British state developed over the 18th century. At the height of the Napoleonic wars in the early 19th century, traded goods provide *more* revenue than domestic goods. If we take the entire period under study, increasing revenues from traded goods in 1689-1818 account for 54% of the overall increase of excise and customs revenues. The growth of the British fiscal military state was not financed on the taxation of domestic goods alone. Rather, tax revenues from international trade represented a substantial component of the fiscal expansion that funded Britain’s imperial dominance.

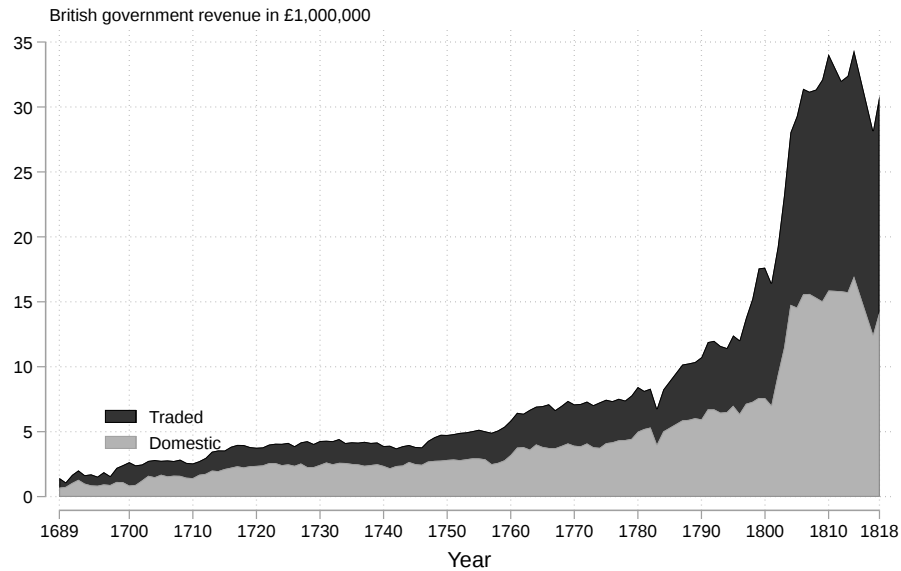
²²Figure A.4 in the Online Appendix reproduces the graph including revenues raised to be spent on bounties.

Figure 2: Decomposition of Excise and Customs Revenues

Panel A: Revenues from Customs and Excise (as in Mitchell, 1988, and Brewer, 1989)



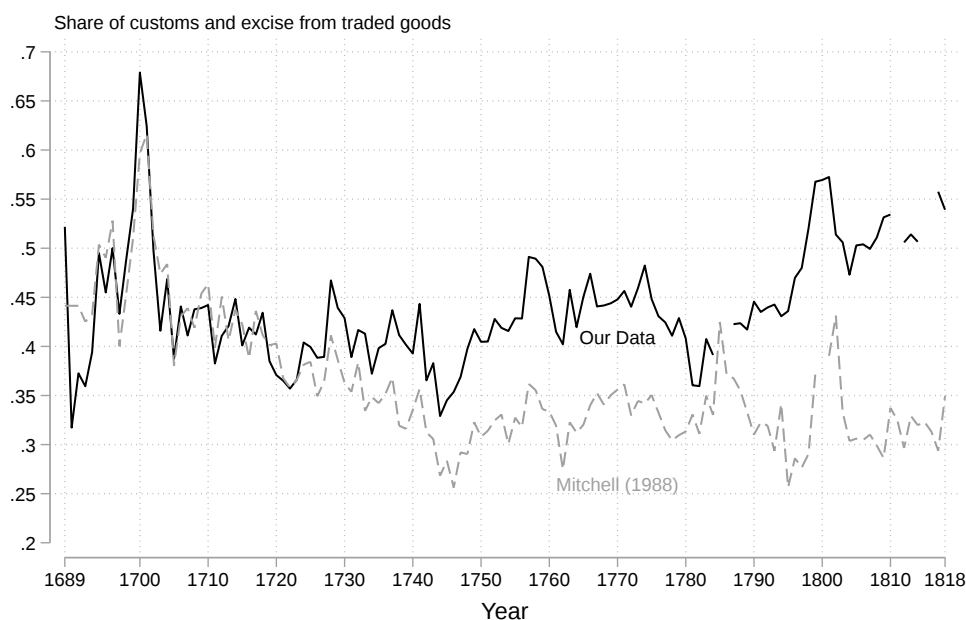
Panel B: Revenues from Traded Goods and Domestic Goods (as calculated by the authors)



Note: This figure decomposes the excise and customs revenue of the British government (in £1,000,000). Panel A decomposes the revenues as presented in Mitchell (1988) and Brewer (1989) into revenues from customs and excise. Panel B plots the levels of revenues from traded goods and domestic goods as calculated by the authors. Years with missing customs data are linearly interpolated. See sections 4 and 5.2 for a description of the data and methodology. See Online Appendix Figure A.5 for a version of Panel B which includes revenues spent to finance bounties.

In Figure 3, we plot the share of British customs and excise revenue from traded goods calculated using the approach and data in Mitchell (1988) and Brewer (1989) (i.e., treating customs revenue as coming from traded goods and excise as coming from domestic production), as well as the share of revenue from traded goods calculated using our disaggregated customs and excise data. One can see in the figure that the traditional narrative of a modest and declining role for taxes on traded goods as Britain expanded its fiscal capacity is overturned when examining disaggregated data on the excise. Indeed, our data show that as revenues expanded enormously over the second half of the 18th century, the share of revenues from traded goods actually *increased* and was *over 50%* of total excise and customs revenues in the late 18th and early 19th centuries. The share of revenues from traded goods reaches a peak of over 60% in 1800, when additionally considering revenues spent on bounties (see Online Appendix Figure A.6).

Figure 3: Revenues from Traded Goods as Share of Excise and Customs



Note: This figure compares the share of British customs and excise revenue from traded goods as computed by the authors with the share as reported in Brewer (1989) and using the data in Mitchell (1988). The grey, dashed line plots the share following Brewer (1989) in treating customs revenue as coming from traded goods and excise as coming from domestic production. The black, solid line plots the share of revenue from traded goods following the authors' calculations and using disaggregated customs and excise data. Gaps in the lines indicate years with missing data. See sections 4 and 5.2 for a description of the data and methodology. See Online Appendix Figure A.6 for a version of this figure which includes revenues spent to finance bounties.

5.3 What traded goods contributed to fiscal revenues?

An obvious threat to the success of the excise tax would have been charging rates that discouraged imports. A standard result in public finance due to Ramsey (1927) is that optimal taxes should bear an inverse relationship to the elasticity of demand. To gain insight into what made a high fiscal revenue possible we examine the nature of the traded goods that were taxed.

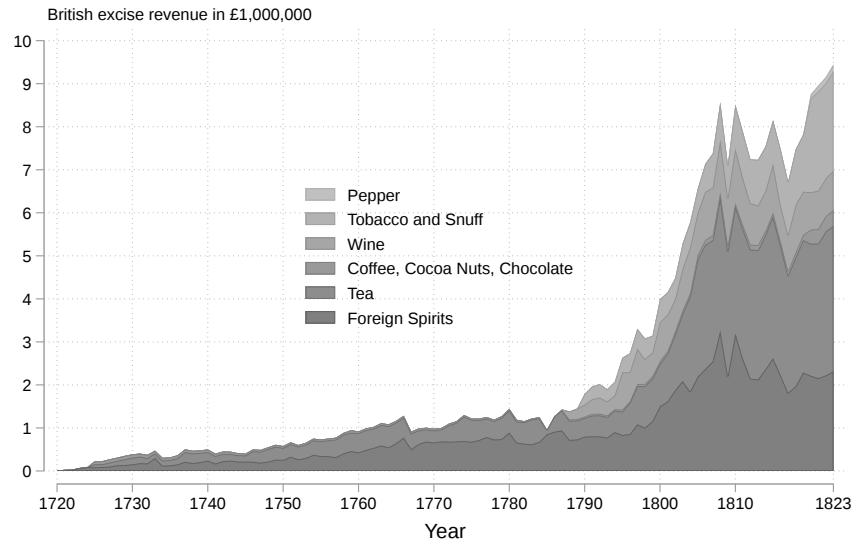
In Panel A of Figure 4, we further decompose excise revenues from trade by good. Tea and foreign spirits were the most important components throughout the 18th and early 19th centuries, with wine and tobacco playing an increasingly important role in the early 19th century. The other goods are cocoa, chocolate, coffee and pepper. The *entirety* of traded excise goods are consumption items that create habituation and have been noted to have relatively inelastic demands — actual drugs like alcohol and tobacco, as well as what Mintz (1985) called “drug foods.”²³ Panel B of Figure 4 decomposes the customs revenues from traded goods.²⁴ The set of goods includes imports that were taxed under both excise and customs (foreign spirits, tea, tobacco, etc.). The most important contributor to customs revenue was sugar, which was not taxed under excise, and which accounted for a third of customs revenues. A majority of customs revenues also came from habituation goods with highly inelastic demand. These findings help us understand why the combination of taxation and trade activity provided a high volume of fiscal revenue.

²³Pomeranz (2000) leverages Mintz’s characterization to argue that the trade on these goods gave the British economy an additional boost by expanding labor supply: to afford these goods, individuals altered their labor-leisure choices toward longer working hours (see also De Vries, 1994).

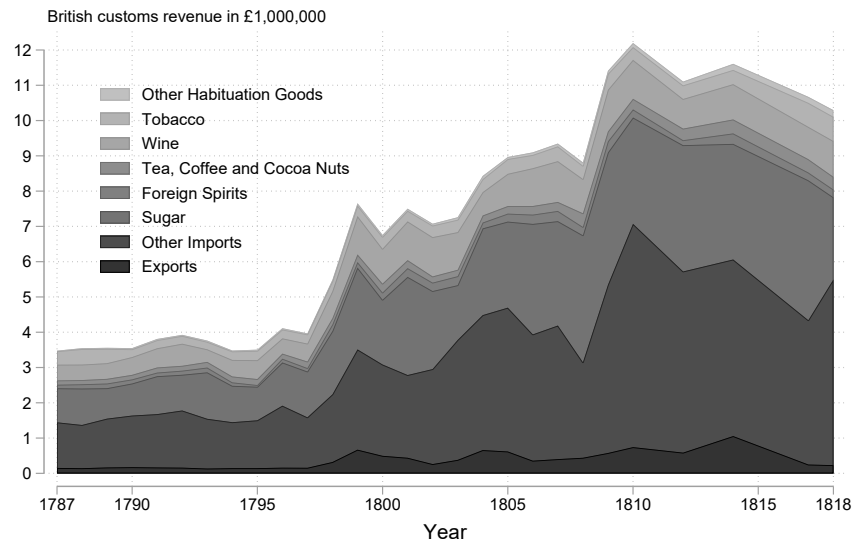
²⁴Before 1787 our customs data is disaggregated by tax act, which does not allow for a simple decomposition by goods.

Figure 4: Decomposition of Revenues from Traded Goods

Panel A: Excise Revenues, 1720-1823



Panel B: Customs Revenues, 1787-1809



Note: This figure decomposes British government revenues from traded goods (in £1,000,000). Panel A plots excise revenues by traded good for 1720-1823. Panel B plots customs revenues by traded good for 1787-1818. Excise revenues from tea and wine include revenues from tea and wine licences. Excise revenues from imported beer have been included with the revenues from foreign spirits, since revenues from imported beer are too small to be visible independently. Customs revenues from other habitation goods come from opium, licorice, pepper, spices etc. The "Other Imports" category of Panel B includes all the customs revenues from imports other than the habitation goods enumerated in this figure. See section 4 for a description of the data and methodology.

6 Conclusion

We provide new data on British excise and customs revenues over time that improve upon standard references. The data make clear that: (i) excise taxation was not only a tax on domestically produced goods, but was also a tax on traded goods; (ii) taxes on traded goods were a large share of indirect taxation, ranging from 40 to 55%; and (iii) taxes on traded goods were a growing share of total revenues from the early 18th century to the early 19th century, as Britain's fiscal-military state developed. These results are evident even under the conservative assumptions guiding the construction of our data.

The patterns revealed by the data we collect should change the narrative regarding Britain's fiscal development. This was not simply a process that relied on domestic production, bureaucracy, and taxation. Rather, it relied to a significant extent on the expansion of trade that was built on mercantilism, war, and empire. The more general implication is that the coercive power of the state can be both an input to, and an outcome of, taxable economic activity.

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SUPPLEMENTARY APPENDIX, NOT FOR PUBLICATION

A Appendix Tables and Figures

Table A.1: British Excise and Customs Revenues (in £1,000), 1689-1720

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excise revenues:				Customs revenues:			
	Paid to Exchequer:				Paid to Exchequer:			
Year:	Total	Trade	Domestic	Bounties	Total	Trade	Domestic	Bounties
1689	750	63	687		687	687	0	
1690	760	11	749		338	338	0	
1691	1050	3	1047		618	618	0	
1692	1297	0	1297		728	728	0	
1693	998	0	998		649	649	0	
1694	870	4	867		846	846	0	
1695	849	9	840		692	692	0	
1696	927	6	921		960	937	22	
1697	902	9	893		674	674	0	
1698	1093	5	1088		1119	1076	44	
1699	1016	16	1000		1406	1292	114	
1700	727	22	704		1928	1780	148	
1701	769	13	755		1638	1489	149	
1702	1176	13	1163		1299	1216	82	
1703	1513	10	1503		1236	1134	103	
1704	1396	25	1371		1418	1294	124	
1705	1606	32	1573		1151	1035	116	
1706	1461	26	1435		1327	1203	124	
1707	1523	19	1504		1217	1107	109	
1708	1481	18	1463		1368	1230	138	
1709	1328	10	1319		1267	1130	137	
1710	1334	16	1318		1222	1114	108	
1711	1459	10	1449		1268	1033	235	44
1712	1650	24	1625		1328	1199	129	40
1713	1902	19	1883		1557	1436	121	101
1714	1825	23	1802		1732	1572	161	44
1715	2012	26	1986		1536	1397	139	82
1716	2075	25	2050		1764	1584	180	46
1717	2146	22	2124		1836	1619	217	50
1718	2143	21	2122		1829	1704	125	63
1719	2150	15	2135		1664	1453	211	86
1720	2169	15	2155		1593	1381	213	71

Table A.2: British Excise and Customs Revenues (in £1,000), 1721-1757

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excise revenues:				Customs revenues:			
	Paid to Exchequer:				Paid to Exchequer:			
Year:	Total	Trade	Domestic	Bounties	Total	Trade	Domestic	Bounties
1721	2196	26	2170		1597	1359	238	67
1722	2375	30	2346		1633	1402	232	98
1723	2416	70	2345		1658	1421	237	99
1724	2283	87	2196		1781	1555	227	89
1725	2481	225	2256		1658	1428	230	125
1726	2350	227	2124		1531	1281	250	100
1727	2569	272	2297		1608	1354	254	60
1728	2376	309	2066		1894	1686	209	39
1729	2376	352	2024		1678	1429	249	31
1730	2594	387	2207		1686	1449	237	53
1731	2790	404	2386		1514	1271	244	85
1732	2631	374	2257		1639	1406	233	79
1733	2826	472	2354		1608	1358	249	125
1734	2661	304	2357		1463	1231	232	202
1735	2571	315	2256		1613	1351	261	124
1736	2581	365	2216		1575	1308	267	69
1737	2631	504	2128		1588	1339	249	123
1738	2655	467	2188		1476	1233	244	197
1739	2737	478	2258		1433	1197	236	167
1740	2569	500	2069		1324	1029	295	58
1741	2346	402	1944		1572	1335	238	38
1742	2565	451	2114		1150	907	243	111
1743	2587	448	2139		1295	1038	257	156
1744	2846	413	2433		1129	895	234	138
1745	2648	402	2246		1173	917	256	153
1746	2697	500	2197		1096	841	254	129
1747	2942	489	2453		1344	1092	252	156
1748	3056	549	2507		1516	1268	247	220
1749	3117	608	2508		1646	1381	265	261
1750	3153	578	2575		1592	1342	250	314
1751	3239	666	2574		1570	1282	288	212
1752	3127	602	2525		1779	1498	282	242
1753	3243	653	2590		1708	1421	287	308
1754	3412	751	2661		1631	1345	286	227
1755	3407	733	2675		1744	1475	268	263
1756	3326	752	2573		1701	1401	300	200
1757	2984	774	2211		1932	1641	291	120

Table A.3: British Excise and Customs Revenues (in £1,000), 1758-1794

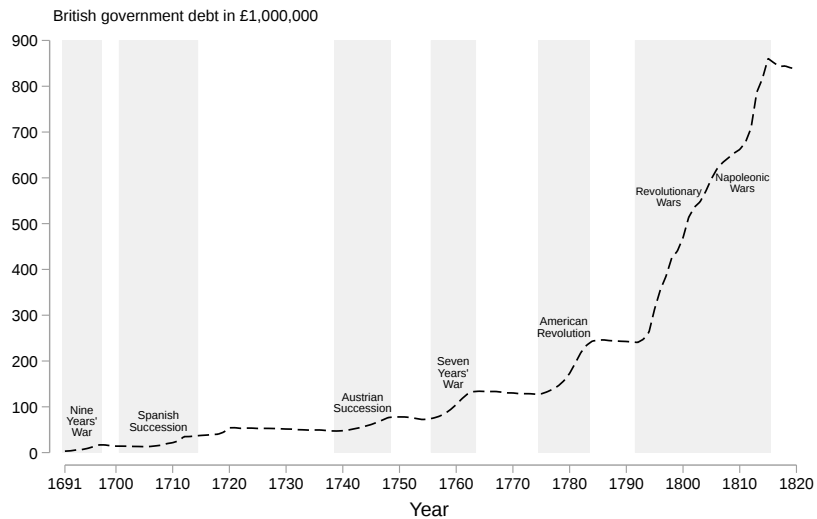
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excise revenues:				Customs revenues:			
	Paid to Exchequer:				Paid to Exchequer:			
Year:	Total	Trade	Domestic	Bounties	Total	Trade	Domestic	Bounties
1758	3236	884	2352		1858	1608	249	115
1759	3431	946	2485		1948	1642	307	188
1760	3848	919	2929		2007	1726	281	231
1761	4555	990	3565	0	1899	1688	211	293
1762	4523	1024	3499	3	1858	1542	316	460
1763	4432	1110	3322	9	2250	1947	302	485
1764	4770	1084	3686	8	2160	1824	336	565
1765	4696	1166	3530	8	2271	1972	299	339
1766	4665	1282	3383	10	2448	2090	358	354
1767	4303	915	3388	5	2356	2019	337	192
1768	4548	987	3561	5	2445	2102	343	175
1769	4731	1005	3726	6	2639	2267	372	186
1770	4554	982	3572	7	2546	2198	348	234
1771	4492	1000	3492	6	2642	2257	385	294
1772	4793	1099	3694	6	2526	2125	401	223
1773	4601	1156	3445	4	2439	2078	361	172
1774	4689	1300	3390	4	2568	2201	367	218
1775	4951	1220	3732	8	2510	2125	385	
1776	4991	1215	3776	7	2359	1951	408	
1777	5176	1254	3922	7	2359	1945	414	
1778	5171	1192	3979	7	2225	1847	378	
1779	5366	1274	4092	6	2415	2063	352	230
1780	6059	1444	4614	6	2384	2002	383	
1781	6040	1190	4850	12	2100	1744	356	
1782	6081	1156	4924	20	2233	1833	400	
1783	4861	1221	3641	11	1919	1542	376	
1784	5828	1249	4579	7	2414	1976	438	
1785	5891	955	4936	11				
1786	5795	1273	4521	8				
1787	6526	1430	5096	7	3641	2867	774	304
1788	6498	1382	5115	12	3756	2962	795	317
1789	6674	1448	5225	11	3687	2874	813	314
1790	6967	1790	5177	9	3764	2991	773	236
1791	7970	1966	6005	11	3925	3210	715	264
1792	8005	2017	5988	10	3989	3256	732	333
1793	7651	1900	5751	5	3947	3233	714	224
1794	7918	2073	5845	2	3521	2854	667	264

Table A.4: British Excise and Customs Revenues (in £1,000), 1795-1823

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Excise revenues:				Customs revenues:			
	Paid to Exchequer:				Paid to Exchequer:			
Year:	Total	Trade	Domestic	Bounties	Total	Trade	Domestic	Bounties
1795	8882	2630	6253	5	3535	2784	751	387
1796	8421	2735	5686	2	3613	2918	694	881
1797	9690	3305	6385	2	4056	3292	763	279
1798	9635	3080	6555	6	5571	4834	737	256
1799	10069	3140	6929	15	7499	6834	665	295
1800	10869	3994	6875	32	6763	6047	716	259
1801	10581	4148	6433	19	5871	5271	600	1661
1802	13165	4473	8692	21	6059	5406	652	992
1803	16040	5283	10757	18	7180	6465	715	261
1804	19670	5777	13893	12	8358	7481	877	304
1805	20207	6551	13656	31	9084	8177	907	270
1806	21735	7132	14603	27	9673	8697	977	317
1807	22049	7377	14672	20	9124	8188	935	546
1808	22829	8568	14261	7	8508	7443	1066	792
1809	21122	7119	14003	14	10981	9941	1039	720
1810	23261	8510	14750	13	10819	9698	1121	847
1811	23247	7881	15366	8				
1812	21980	7239	14740	24	10030	8956	1073	602
1813	21894	7231	14663	21				
1814	23425	7541	15884	20	10961	9879	1082	579
1815	24949	8151	16798	25				
1816	21786	7480	14306	13				
1817	18383	6721	11662	18	9808	8997	811	425
1818	20836	7471	13365	17	10035	9176	859	411
1819	21257	7819	13438	4				
1820	24439	8751	15688	4				
1821	24660	8958	15702	4				
1822	23922	9154	14767	4				
1823	22888	9449	13440	6				

Note: These tables report the yearly excise and customs revenues of the British government (in £1,000). Columns 1-3 report the revenues paid to the Exchequer collected by the excise, and columns 5-7 report the revenues paid to the Exchequer collected by the customs. These exchequer revenues are net of management costs, drawbacks, and bounties or other charges paid out of the revenues. Columns 2-3 for excise and columns 6-7 for customs disaggregate the exchequer revenues into those collected from traded and domestic goods. Columns 4 and 8 report the revenues that finance bounties or equivalent charges for national objectives. These revenues never reached the Exchequer and are therefore not included in the totals of columns 1 or 5. The excise revenues paying for bounties (in col. 4) are solely derived from traded goods. All the customs revenues paying for bounties (in col. 8) are collected from traded goods. Cells are left empty whenever data is missing. See section 4 for a discussion of the sources and methodological choices.

Figure A.1: Growth of British Government Debt in Times of War, 1691-1820



Note: This figure plots British government debt in £1,000,000 over time, with major wars shaded in gray. See section 2 for a discussion of this figure. Source: Mitchell (1988).

Figure A.2: Excise Revenues by Taxed Good in 1756, Sample of CUST 145/22

Good	Charges	Taxes	Exports	Alleviations
Coke	1735332 16 4 1/2	144107 16 4 1/2	666816 6 1/2	15381 11 2 1/2
Wheat	638474 17 4 1/2	55583 14 9 1/2	3770 9 11 1/2	677 10 10 1/2
Barley	161089 2 10 1/2	14013 19 0 1/2	790 19 7 1/2	2927 17 3 1/2
Beer	82587 18 6 1/2	2368 4 15 1/2		
Wine	203210 4 5 1/2	1353516 10 3 1/2	863 17 1 1/2	12668 2 1/2
Whisky	272602 13 5 1/2	12375 16 3 1/2	436 11 1/2	29491 10 10 1/2
Spirit Wine	19438 8	967 6 3 1/2	29 12 8 1/2	1146 3 9
W. Plate	9385 17 8	1622 18 7 1/2	23	1406 1 8 1/2
W. Wine	57943 9 11 1/2	6043 2 10 1/2	89 12	
Tea	379769 3 8 1/2	9308 17 16 8		
Chocolate	10464 1 5 1/2	1571 12 11 1/2	22 8	
Spirit Lic	54279 4 2 1/2	1387 13 10 1/2		
Wine	63548 12 7 1/2	2006 1 1/2	32 17 4	13162 11 2 1/2
Wine	63128 19 6 1/2	1894 8 9		195 3 7 1/2
Wine	1756 3731675 2 11 3 1/2	268787 4 5	12961 8 6 1/2	74861 9 1 1/2

Note: This figure reproduces a sample of the archival records organized under CUST 145/22. These records report excise revenues by taxed good from 1788 forward. For earlier years (e.g. 1756 in this figure) the category of narrow excise (cf. row 1 of this figure) needs to be further disaggregated. See section 4 for a more detailed discussion.

Figure A.3: Excise Revenues by Government Act in 1750-55, Sample of CUST 145/12

Gross and Net Produce of the Revenue of Excise
From Midsummer 1750. To 5th July 1755.

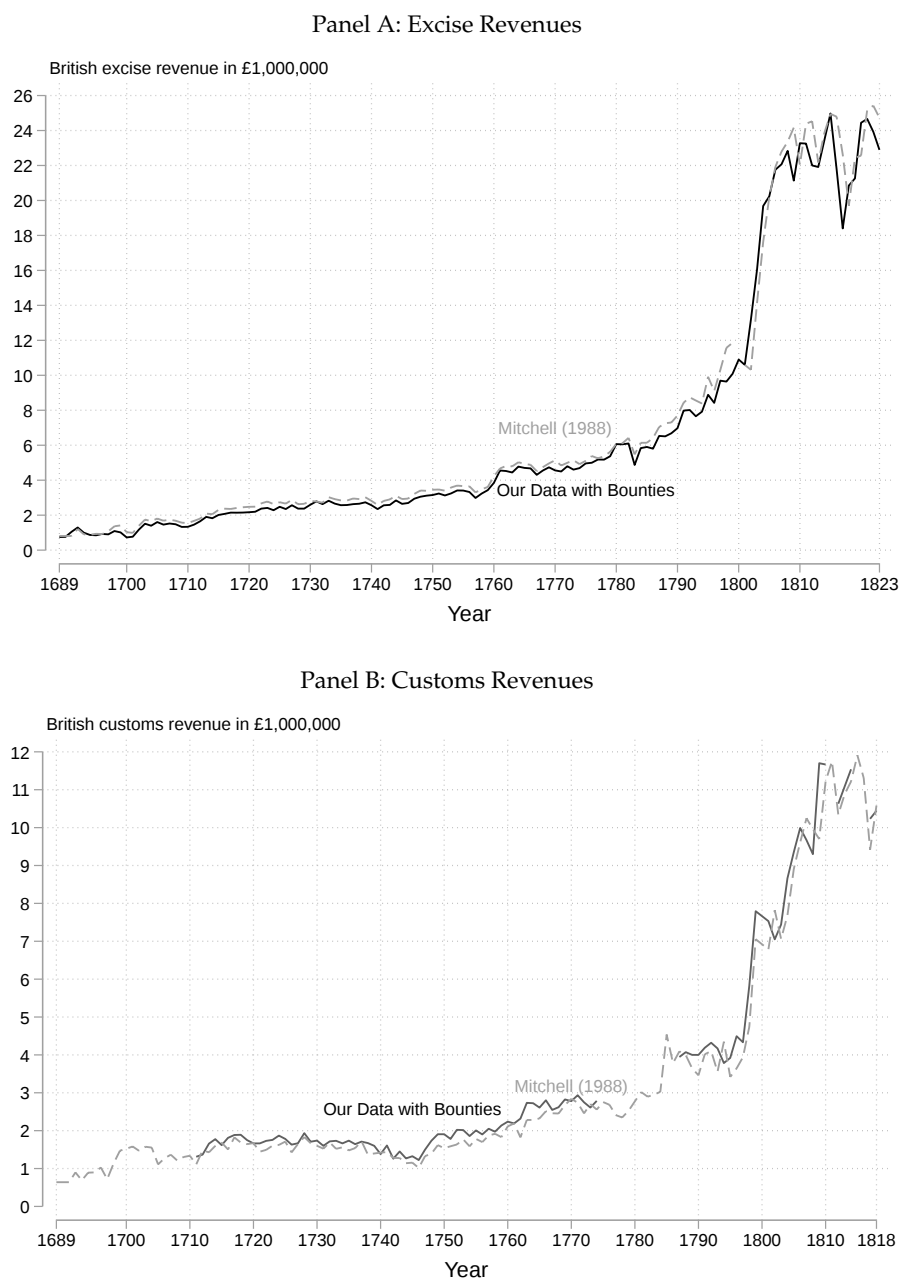
Item	Midsummer 1750	Midsummer 1751
Hereditary & Temporary Excise	527008 10 24	550283 10 42
Wages, New Years 9 th	172226 5 24	173319 3 01
Bank 9 th	172226 5 24	173319 3 01
Additional 5 th	172226 5 24	173319 3 01
Low Wines 24 th Sept 1750	57376 5 72	57750 15 54
Ad. Low Wines comm. 26 th March 1750	53508 11 2	57407 9 94
New Ad. Low Wines comm. 26 th March 1750	53508 11 2	57407 9 94
British Spirits 24 th Sept 1750	22001 5 1	23622 3 1
Ad. Br. Spirits comm. 26 th March 1750	52760 10 109	58144 8 52
New Ad. Br. Spirits comm. 26 th March 1750	52760 10 109	58144 8 52
Brandy, Arrack, Rum Imported	50886 1 104	42001 9 44
Wages	180017 1 8	200512 11 61
	2331 4 74	5255 7 101
Gross Produce	1618606 7 61	1698843 11 91
Charges of Management	132875 3 1	136999 12 91
Wages of Officers	1237817 8	921518 54
Expenses	1216416 2	13608 9 94
Allowances	211612 4	2346 5
Net Produce	150336 8 12	162468 58
	1430060 10	341306 375 11 41
	1618606 7 61	1698843 11 91

From Midsummer 1752. To 5th July 1755.

Item	Midsummer 1752	Midsummer 1753
Hereditary & Temporary Excise	527205 11 11	528778 8 4
Wages, New Years 9 th	172606 12 11	172829 11 6
Bank 9 th	172606 12 11	172829 11 6
Additional 5 th	172606 12 11	172829 11 6
Low Wines 24 th Sept 1752	57497 8 82	57338 19 64
Ad. Low Wines comm. 26 th March 1752	57497 8 82	57338 19 64
New Ad. Low Wines comm. 26 th March 1752	57497 8 82	57338 19 64
British Spirits 24 th Sept 1752	13711 4 79	16993 11 24
Ad. Br. Spirits comm. 26 th March 1752	52370 19 5	57129 12 3
New Ad. Br. Spirits comm. 26 th March 1752	52370 19 5	57129 12 3
Brandy, Arrack, Rum Imported	56096 10 94	60372 4 7
Wages	56082 15 4	60372 4 7
	26302 17 1	28762 28 9
	76268 7 91	86246 3 72
	189318 11 21	210696 1 109
	5133 12 4	7910 3 54
Gross Produce	1647627 7 82	1708137 11 84
Charges of Management	130011 5 14	136203 10 7
Wages of Officers	9504 1 104	9685 11 43
Expenses	17207 18 1	21304 19 3
Allowances	5178 4 6	2269 8 11
Net Produce	167931 9 66	169520 13 24
	1479645 10 24	1338617 1 63
	1647627 7 82	1708137 11 84

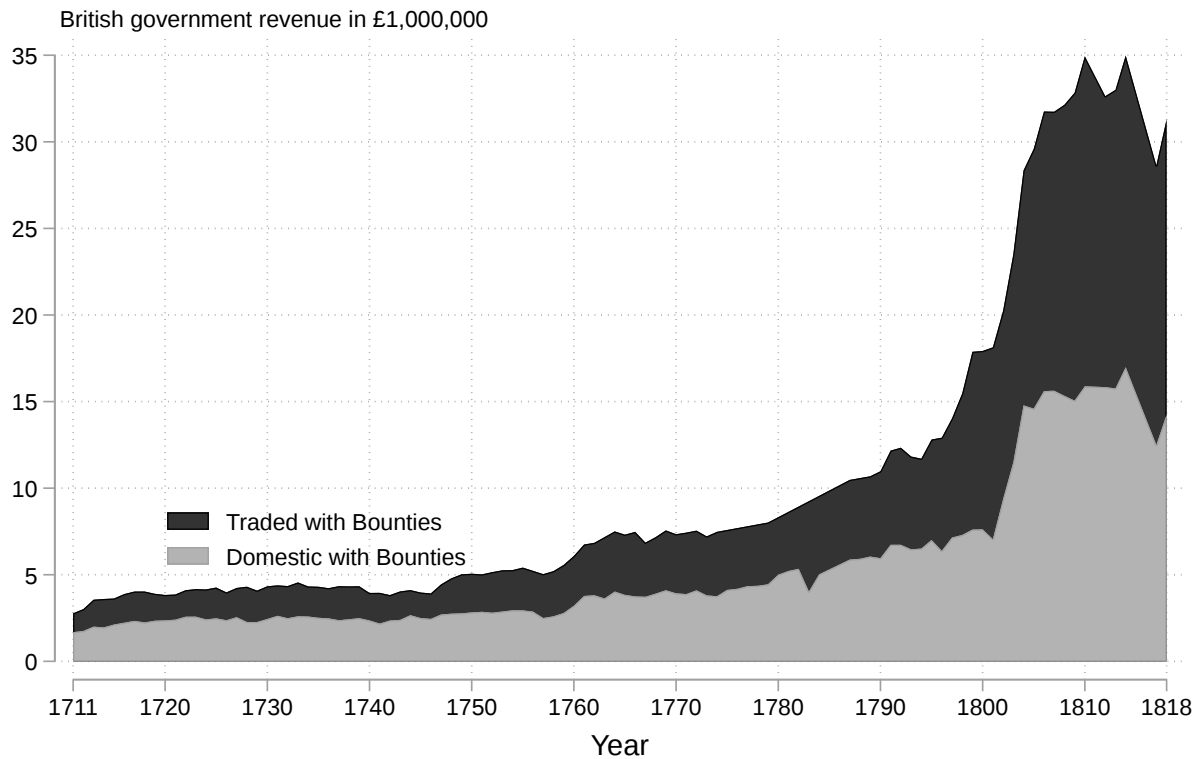
Note: This figure reproduces a sample of the archival records organized under CUST 145/12. These records report excise revenues by government act. See section 4 for a more detailed discussion.

Figure A.4: Comparison of Aggregate Revenues with Mitchell (1988), with Bounties



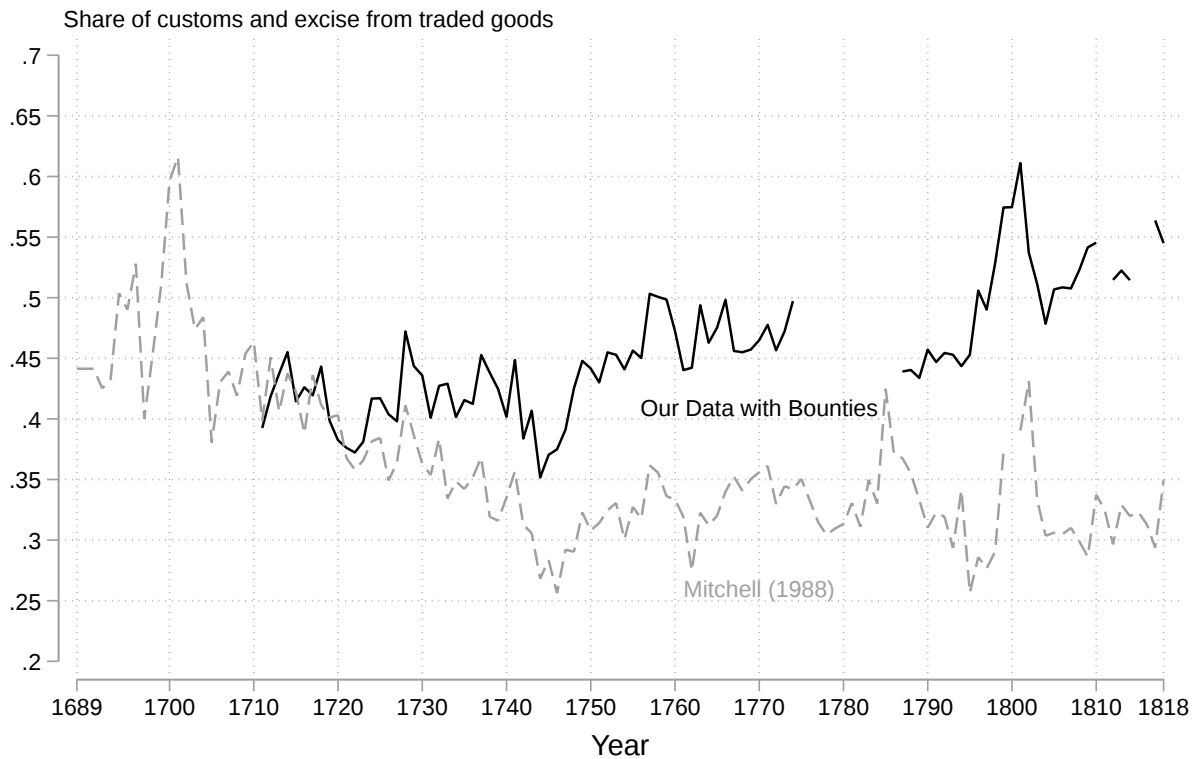
Note: This figure compares the aggregate patterns of excise and customs revenues of the British government (in £1,000,000) as calculated by the authors with those reported in Mitchell (1988). Panel A reports the excise revenues for 1689-1823, and Panel B reports the customs revenues for 1689-1818. The black, solid line plots revenues as paid into the Exchequer plus revenues spent on bounties and other national objectives. This figure reproduces the plots of Figure 1, but with Exchequer plus bounty revenues instead of solely Exchequer revenues. Gaps in the lines indicate years with missing data. We assume zero excise revenues spent on bounties before 1761. See section 4 for a description of the data and methodology.

Figure A.5: Revenues from Traded Goods and Domestic Goods, with Bounties



Note: This figure decomposes the excise and customs revenue of the British government (in £1,000,000). The black area plots the levels of revenues from traded goods, and the grey area plots the revenues from domestic goods. These revenues are the sum of Exchequer revenues and revenues raised to pay for bounties and other national objectives, as calculated by the authors. This figure reproduces the plots of Figure 2, Panel B, but with Exchequer plus bounty revenues instead of solely Exchequer revenues. Years with missing data are linearly interpolated. We assume zero excise revenues spent on bounties before 1761. The figure starts in 1711, as we do not observe data on bounties before that year. See section 4 for a description of the data and methodology.

Figure A.6: Revenues from Traded Goods as Share of Excise and Customs, with Bounties



Note: This figure compares the share of British customs and excise revenue from traded goods as computed by the authors with the share as reported in Brewer (1989) and using the data in Mitchell (1988). The grey, dashed line plots the share following Brewer (1989) in treating customs revenue as coming from traded goods and excise as coming from domestic production. The black, solid line plots the share of revenue from traded goods following the authors' calculations and using disaggregated customs and excise data. Our Data with Bounties is the sum of Exchequer revenues and revenues spent on bounties and other national objectives. This figure reproduces the plots of Figure 3, but with Exchequer plus bounty revenues instead of solely Exchequer revenues. Gaps in the lines indicate years with missing data. We assume zero excise revenues spent on bounties before 1761. The black line starts in 1711, as we do not observe data on bounties before that year. See section 4 for a description of the data and methodology.