

# Political Representation in the Era of Britain's Expanding Overseas Trade

Adriane Fresh\*  
Duke University

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**Please note: The Presentation reflects significant changes that have not (yet) been incorporated into this version of the paper. A revised paper will be forthcoming.**

## Abstract

This paper considers the political consequences of the dramatic expansion of British overseas trade beginning in the late 16th century. Using an original individual-level dataset on the characteristics of Members of Parliament in England and Wales spanning two centuries (1550-1750), I systematically evaluate the extent to which the growth of the Atlantic economy shifted the economic and social characteristics of political representatives, and how parliamentary supremacy after 1688 conditioned those shifts. I find that while MPs involved in the growing commercial sector differentially entered Parliament in those constituencies most affected by expanding trade, there was no greater turnover in the social and family backgrounds of representatives. New sources of economic power found political representation, but economic growth deriving from trade was not associated with a broader opportunity structure of politics, more generally—even after the Glorious Revolution. These results accord with the notion that economic development, and globalization specifically, can reinforce oligarchic political organization.

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\*Assistant Professor of Political Science; [adriane.fresh@duke.edu](mailto:adriane.fresh@duke.edu). I owe thanks to Ran Abramitzky, David Bateman, Josh Clinton, Nick Eubank, Olle Folke, Steve Haber, Jonathan Rodden, Ken Scheve and participants of the Historical Political Economy Working Group, the Yale Political Economy Conference, the University of Pennsylvania Comparative Politics Workshop, and IPERG at the Universitat de Barcelona. This research was supported in part by a grant from the Europe Center at Stanford.

“The discovery of America, and that of passage to the East Indies by the Cape of Good Hope, are the two Greatest and most important events recorded in the history of mankind.”

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*The Wealth of Nations* (1776)  
ADAM SMITH

Large-scale market integration at the turn of the 21st century has motivated significant interest in whether and how international trade can shift representational preferences within electoral democracies, or even upset the political equilibrium in non-democratic regimes (Pearson, 1997; Eichengreen and Leblang, 2008; Milner and Kubota, 2005; Milner and Mukherjee, 2009; Hellwig, 2015; Autor et al., 2016). Much of this political economy work on economic globalization is confined to the 20th century on; yet, history has seen numerous waves of increasing and sustained global economic interactions (de Vries, 2010).<sup>1</sup> Some of the most dramatic—as the epigraph from Adam Smith describes—were the discovery and subsequent adoption of new overseas trade routes between Europe, Africa, Asia and the Americas in the 16th century. Increasingly, scholars have demonstrated that the consequences of this early globalization cannot be dismissed (Pomeranz, 2001; Acemoglu, Johnson and Robinson, 2005; Hoffman, 2015; de Zwart and van Zanden, 2018).

In this paper, I turn attention to the political consequences of this earlier period of globalization for Britain, one of the states that dominated emerging long-distance overseas trade. It’s well known that 17th century Britain experienced enormous political upheaval—from the English Civil War to a key step towards representative democracy with the Glorious Revolution (e.g. Moore (1966); North and Weingast (1989)). Scholars have argued that shifting economic interests deriving from a changing economy played a key role in structural political change (Rogowski, 1990; Pincus and Robinson, 2011). Indeed we know that mercantile interests help to explain allegiance in the Civil War (Jha, 2015), and state credibility after the Glorious Revolution (Stasavage, 2003).<sup>2</sup> But the systematic evidence needed to evaluate the political role of trade more generally—evidence of how the distribution of political power in Britain *evolved with* expanding trade—remains missing. In this paper, I address how political institutions incorporated new economic groups as the economy changed, and to the extent to which this represented greater elite circulation through power, and the decline of traditional social bases of political power.

In filling this gap in the literature, I utilize a theoretical framework that draws on standard models of economic gains and losses from trade (Stolper and Samuelson, 1941), resultant economic

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<sup>1</sup>A contrasting view from Williamson and O’Rourke (2002) defines globalization more narrowly and considers early periods a fundamentally different phenomenon. While the distinctions are different, because I consider globalization as the independent (rather than dependent) variable, I think it’s worthwhile to adopt the ‘soft’ view of globalization advanced by de Vries. Naturally, at the end of the paper I turn to the question of how the results from this early period of globalization might (and might not) generalize to other eras in which a ‘hard’ view of globalization might provide a better description.

<sup>2</sup>In the latter case with the important additional of cross-cutting cleavages allowing merchants a larger coalition than their mere parliamentary numbers allowed. Historical work like that of Brenner (2003), also provides an important picture of political, social and economic relationships during this period though on a smaller geographic (London) and temporal (prior to 1640) scale.

conflict dynamics (Rogowski, 1990; Hiscox, 2001), and theoretical and empirical insights into how economic resources are translated into the political realm, particularly in settings of limited institutionalization. If political power straightforwardly *reflects* the distribution of economic power within society, then changes in the economy that shift economic power between industries or factors of production should straightforwardly translate into the political realm. In turn, we should expect those who gain from trade to translate their economic resources into representation, while those who lose should circulate away from the political arena (Pirenne, 1914; Mosca, 1939; Pareto, 1961).

Yet, even within most fledgling political institutions, representative positions are valuable for rents and policy. We might expect that the distributional conflicts arising from the economic transformations wrought by trade would make this especially true. We therefore have little theoretical or empirical reason to expect that those in power will simply cede their positions to a new elite (Michels, 1911; Acemoglu and Robinson, 2006*a,b*, 2008).<sup>3</sup> In addition, political power affords incumbent elites unique powers to potentially block the rise of a challenging elite, or to shape the economy—e.g. through protectionist regulations—for their own benefit. In many settings, we see elites persist, even across deep structural changes that we might otherwise expect to upset their power (Martinez-Bravo, Mukherjee and Stegmann, 2016; Wasserman, 1993; Hagopian, 1996). In short, elite change in the context of economic change is not a given.

In the case of expanding trade in the Atlantic economy, this paper argues that Britain’s existing political elites were indeed those best positioned to capture the gains from trade for themselves, and to persist in power. Britain’s trade during this period was primarily import-driven, which favored those who could front the capital necessarily to buy, move, store, and re-export the newly available consumer goods (Fisher, 1976). The economic organization of trade, therefore, restricted the mobility of factors. There were high economic barriers to new entrants, strongly favoring existing mercantile and (even) landed elites. Economies of scale in many of these new trades further concentrated economic power as the Atlantic economy grew and developed (Gauci, 2001). Political representation followed the shifting distribution of sectoral growth in the economy, which in turn reflected the fact that the same social bases of power remained; they had just shifted into the growing sectors of the economy. Trade-related economic growth was hardly a broad political opening, but instead conferred “democratic” representation for the bourgeoisie alone (Moore, 1966).

I systematically evaluate this claim: that political power shifted to represent economic interests in the growing commercial economy, but did not more generally open political power to new social groups. To do so, I analyze two hundred years (1550-1750) of detailed representational history in Britain using newly collected data on the universe of MPs in the House of Commons. Using natural language processing on the narrative biographies, I code the individual economic interests of MPs, connect family dynasties, and measure MP relationships to traditional sources of social

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<sup>3</sup>There may be also be variation in the ability of different interests to organize collectively for political ends (Alt and Gilligan, 1994).

power. In doing so, I observe two centuries of who had political power, when they obtained it, and the constituencies that they represented.

Linking these to measures of growth of the Atlantic economy, I find that expanding trade did shift the representation of the commercial interest in Parliament. As trade expanded, MPs involved in commerce were more likely to be (sel)ected as representatives, and for those constituencies most involved in the expanding commerce. In addition, representation increased *not* for the old-guard merchant elite who had long been trading between Britain and the European continent, but rather amongst those individuals involved in the *new* overseas trades to Asia and the Americas.

Yet, although the economic composition of Parliament changed, economic change did not result in a broader opening of political power to new families or new social groups. Instead, I demonstrate that concentration of political power in family dynasties *increased* during the period, as did aristocratically connected MPs. In addition, there is little evidence that new MPs entered, or that concentrated familial power changed differentially where trade generated the greatest economic impact. Further, there is also no evidence that parliamentary supremacy systematically conditioned these effects of trade. Together, the results suggest a reinforcement of oligarchic political representation deriving fundamentally from the nature of the transforming economy.

In presenting this evidence of the evolution of elite characteristics long before, as well as *across* the Glorious Revolution—and how parliament’s changing powers were reflected in changing representation—this paper presents corroborative evidence that crucial shifts in the political equilibrium did in fact precede national institutional change (Pincus and Robinson, 2011; Jha, 2015), rather than deriving primarily therefrom (North and Weingast, 1989).<sup>4</sup> This paper suggests that the representation of commercial interests—rather than deep shifts in the *social* basis of parliamentary power (Moore, 1966)—were the crucial political change that occurred during this formative era.

This paper contributes broadly to the second-image reversed literature by directly linking the study of domestic political dynamics to the international economy (Gourevitch, 1978; Rogowski, 1990; Frieden, 1991; Frieden et al., 1996). Specifically, it tackles a period of important trade expansion understudied in this literature. Just as the international economy conditioned the political economy experience of industrialization, so too did Britain’s comparatively “late” entry into a trading world where the Dutch and Portuguese dominated east and Spain dominated west. A relatively weak Crown late to the division of new trading routes and possible colonies had to empower independent traders whose interests came to eventually conflict and ultimately undermine monarchical power.

Insofar as we look to economic change—particularly globalization-driven development in contemporary settings—to transform the representational equilibrium where political elites are highly concentrated, this paper’s findings suggest caution. Significant structural economic change is no

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<sup>4</sup>Writes Pincus and Robinson (2011), the most significant changes of the Glorious Revolution “emerged from in the context of a large change in the English political equilibrium, which [The Revolution] greatly helped to consolidate and reinforce.”

guarantee. Instead, oligarchic concentration in economic power structures can reinforce those of political power (Acemoglu, 2008; Stasavage, 2016). In the case of international trade, if there are high barriers to entry in emerging sectors—beyond sector-specific mobility constraints—they may strictly advantage those with existing power.

While the quantitative study of the *persistent* effects of historical trade on contemporary outcomes has grown in recent years (Jha, 2013; Gaikwad, 2014), studies that analyze the *evolution* of trade alongside politics are rare; even more so on the multi-century scale of this study. But it is these dynamics that give us necessary insights into how such persistence might function, and what might transform it (Banerjee and Duflo, 2014; Nunn, 2009, 2014). This paper is not a formal test of a mechanism of historical persistence—however, in documenting the detailed evolution of political power in the wake of expanding trade, the paper presents a first-order answer to whether and how structural economic change can translate into observable changes in a political-economic equilibrium.

## 1 The Nature of Britain’s c.16th Century Atlantic Economy

Questions of elite persistence and elite change in contexts of economic transformation fundamentally concern two processes at work within, each, (1) the economic and (2) the political realms. I consider the former here, and the latter in the next section. In the economic realm, these questions concern whether economic change shifts the distribution of economic and social power in society—that is, whether trade empowers a distinctly *new* group. Conditional on a given set of institutions—a question that I turn to later in the paper—these economic and social resources (i.e. *de facto* power) are those that matter for producing political power. Thus, the first-order imperative is an understanding of the nature of the British economy, and the extent to which expanding trade changed the distribution of power within it. Because this paper is interested not only in economic bases of power, but social bases as well, it’s essential to understand how different social groups were affected by trade as well.

### The Origins and Nature of 16th Century Trade

As a relatively small island nation, international trade was a part of Britain’s economy for centuries prior to the 1500s. Britain traded extensively with nearby ports on the European continent that linked to longer overland caravan routes reaching into Africa and Asia (Davis, 1973a).<sup>5</sup> In the late 1400s, technological improvements in navigation and shipbuilding established sea routes to

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<sup>5</sup>“In [1565 wool] cloth alone comprised 78% of the total value of all exports, and all types of wool [products] amounted to over 90%” (Stone, 1949, 37). Grain, minerals and metals, and light manufactures were the remaining (small) share of exports (Davis, 1962). Imports comprised: currants, wine, cotton, silk, and spices, among others (Davis, 1973a).

Asia and colonization of the Americas, shocking the existing European organization of trade.<sup>6</sup> Britain produced voyages of “discovery” from the 1550s, increased Baltic trade at the same time, established a robust seaborne trade with the Middle East (the “Levant”) from 1580, dominated trade to South Asia from 1600, and established colonies in North America and the Caribbean from the 1620s.

By and large, British trade from the mid-16th to the late 18th centuries was driven by domestic demand for foreign products—sugar, spices, cottons, silks (Fisher, 1976; Price, 1989; Brenner, 2003). “The new trades,” writes Brenner, “in the half century or so after 1550 *concentrated from the very start on imports*”.<sup>7</sup> Export-led trade materialized much later, towards the mid-18th century (Deane, 1965; Fisher, 1976).<sup>8</sup> The key element of this earlier import-led trade was not “the competitive efficiency of the manufacturer . . . [but instead] depended on the enterprise of the merchant who scoured the world in search of desirable commodities” (Fisher, 1976, 209). Export-led growth played a role in this earlier period, but this role was in terms of *re-exports* (entrepôt trade) of “exotic goods” to the European continent (Ramsay, 1957).<sup>9</sup> Along with the rise in prominence of the overseas merchant, the growth of the wholesale and retail infrastructure to move and sell goods was one of the major developments of the era.

Despite the established continental trade, at the birth of the Atlantic economy, Britain was still a largely agricultural economy—about two thirds of British labor was employed in agriculture, and agriculture accounted for about 40% of national output (Broadberry et al., 2015; Wallis, Colson and Chilosì, 2017).<sup>10</sup> The consequences of the Atlantic trade for the British economy were substantial. (For graphical evidence see Appendix F.) From the mid-16th century onwards, trade and transport grew an average of 1.3 percent per year until the end of the 17th century, acquiring a volume “unimaginable” in previous centuries (Broadberry et al., 2015, 167). It represented a 10th of total economic output by 1700. Over that time period manufacturing (early “proto-industrial”) output surged as well, growing seven times from its mid-15th century low to the eve of the Industrial Revolution. The share of agriculture in national output dropped to a quarter by 1700. Though some technological improvements and increasing specialization in agriculture ensured that its productivity increased as well (Broadberry et al., 2015).

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<sup>6</sup>See (de Zwart and van Zanden, 2018, 20) and Rapp (1975) for two discussions of what changed beyond technology. Acemoglu, Johnson and Robinson (2005) also emphasize the importance of geography interacting with constraints on executive power.

<sup>7</sup>Page 11, emphasis original. This is in addition to a mid 15th century depression in the low countries that created a crisis in cloth exports (Supple, 1959). But, as numerous scholars note, even if the impetus for trade was new markets, the trade that *actually* developed was import-driven. Fisher attributes the income necessary for this domestic consumption to a redistribution occurring away from smallholders and towards larger landowners in the 16th century, coupled with the end of numerous continental wars that had eaten domestic surplus. Rising rents and the beginnings of enclosure released rural labor to towns (Moore, 1966; Clay, 1984). Consumption of once rare luxury items penetrated beyond the elite as prices fell (Fisher, 1976). Appendix M documents falling prices (and lower price volatility) on some of these luxury goods.

<sup>8</sup>As Price (1989) notes, the pre 18th century and later patterns of trade growth “require different explanations” (269).

<sup>9</sup>This was the most valuable trade, albeit not the largest trade in tonnage (Davis, 1966).

<sup>10</sup>(Proto-)Industry—textiles, metals, and other light manufactures—accounted for a quarter of employment. Services, including trade and transport, were the rest.

One thing that was exceptionally clear about the growth and shifting composition of trade was that it resulted in a particular spatial distribution of changing economic activity that reflected the importance of the movement of imported goods. The localized effects of trade began to divide broadly on “urban” and rural lines. Urban centers were more heavily involved in activities like the storage and transportation of goods, light manufacturing, retail trades, and various professional services (Clay, 1984; Patten, 1978; Darby, 1961).<sup>11</sup> London, the unrivaled international port during this period, was unique in the extent of its domination by commerce and industry, and grew substantially (Brenner, 2003). Secondary outports—places like, Bristol, Southampton, and Exeter—were also crucially shaped by the Atlantic economy too.<sup>12</sup> The counties whose population grew the most from the 14th to the 17th century were those linked to key trading ports—Middlesex (London), Cheshire (chester), Lancashire (Liverpool), and Devon (Exeter). But even towns less directly connected to overseas trade grew too. By 1750, the end of this paper’s period of study, 21% of the population lived in towns of 5,000+ individuals (Wrightson, 2002).<sup>13</sup>

## The Gains and Losses from Trade

Britain’s comparative advantage was firmly in capital-intensive goods. As noted above, although expanding trade during the 16th and 17th centuries was driven primarily by import demand—favoring capital that moved, stored and sold goods—what Britain did export were primarily (relatively) capital-intensive manufactured goods (Davis, 1956; Gillispie, 1920).<sup>14</sup> Though the importance of land and labor varied somewhat in relation to Britain’s new trading partners—Asia and Africa, on the one hand, and the Americas on the other.<sup>15</sup> The labor poor American colonies induced migration from Britain, even after plantation colonies switched to slave labor. Despite the fact that scholars have labeled Britain’s landed elite as defensive in the face of expanding trade (Rogowski, 1990, 155-7), others have noted that rental rates spiked during the early 17th century, but otherwise remained steady throughout the period (Clark, 1996).<sup>16</sup>

Of course, factors alone don’t tell the whole story. Their relative mobility matters as well (Hiscox,

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<sup>11</sup>In terms of light manufactures: “shoe-makers, glovers tailors, bakers, butchers, carpenters, coopers, fishmongers, grocerys, tanners, surgeons, musicians” and more (Clay, 1984). In terms of retail—innns, taverns, “coffee houses, theatres, and less reputable places” (Patten, 1978). The growth of imports meant there was also simply more to sell in towns (Mendels, 1976).

<sup>12</sup>These activities included shipbuilding and associated industries (e.g. sail-making and cordage), one of the top four employers of wage labor in the country (Davis, 1962). And new industries also emerged like sugar refining (Zahedieh, 2002). International trade further required additional labor for victualing ships, manning the docks, and additional capital in the form of merchandise houses, last-mile transportation, and so forth.

<sup>13</sup>See Appendix I for trends in town/city populations from Bairoch, Batou and Chevre (1988).

<sup>14</sup>Textiles, shoes, guns, ammunition, soap, furniture, and other household durables. In the case of Asia, however, British manufacturers were never prized above specie (Chaudhuri, 1963).

<sup>15</sup>Rogowski (1990) is quick to label Britain during this period as a case of capital and labor abundance. While this was largely true relative to the Americas who were essentially land and not much else, many of the goods arriving from the eastward trades—e.g. cottons and silks—were labor-intensive goods.

<sup>16</sup>Daniel Defoe, writing in “A Plan of the English Commerce” in 1730 stated that “as the consumption of [imports] increases, the rents of land rise: So the gentlemen are the first to feel the benefit of trade” in (Gillispie, 1920, 155-6). Moore (1966) too echoes this.

2001). By and large, factor mobility during the 16th and 17th century was limited; perhaps not surprising given the early stage of development for capital markets, transportation, and communication. This would seem to suggest sector-specific gains (and losses) to trade, rather than gains to factors (here capital) *per se* (Ashton, 1976; Fisher, 1976). Yet, here too the evidence is not so clear-cut that it was only sectors directly involved in expanding trade that gained, as opposed to factors more generally. Rabb (1967) and Jha (2015), for instance, demonstrate how gentry and aristocratic capital found its way into overseas trade via the new instrument of the joint-stock company. And Rapp (1975) notes how production techniques acquired via eastward trades resulted in shifts in domestic production to substitute both substitute for imports, and capture export markets previously dominated by Southern European capital.

Where the historical scholarship agrees is that merchants—particularly those directly involved in the overseas trades—benefited substantially as trade transformed the British economy. Yet, even this generalization is subject to some refinement, as there was not a single monolithic merchant group involved in expanding trade. (Nor, as I describe later, was the relationship between these different merchant groups and political institutions of the age the same.) Instead, a continent European overseas trade stagnated as two trades looking east and west, respectively, grew.

Initial mid-16th century trade in wool cloth and was monopolized (courtesy of a royal charter) by the Company of Merchant Adventurers. This old-guard merchant elite operated out of London and a few satellite outposts. The expansion of trade into the Middle East and Asia, largely left this old guard behind, and dwarfed it in scale (Davis, 1973*b*). As British trade turned towards Africa and the American and Caribbean colonies, the organization of trade changed once again. The westward trades were risky and fundamentally different in nature than anything that had come before. Where the eastern trades largely established sea routes to products that had long travelled to Britain via other routes, the value of the colonial trades was not immediately obvious. Even after the viability of sugar, tobacco and other products had been established, the nature of these products required merchant involvement in *production*—settlement, estate management, production that needed constant capital infusions.

The economic and social organization of each of these trades was distinct as well. The Merchant Adventurers were a long-established (1407) London-based trading group, with affiliate bodies operating out of a few eastern ports. This established merchant elite kept to its familiar trade as the Middle Eastern and Asian trade routes opened up. Only a handful of members of the new companies came from the ranks of the Merchant Adventurers (Brenner, 1972).<sup>17</sup> Yet, they were hardly new men. “In social background and position” observes Brenner (1972), “they did not differ substantially from other leading City merchants” (368).<sup>18</sup>

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<sup>17</sup>According to Brenner, only 4 of 12 of the Turkey Company members (1581) and only 5 of 118 Levant Company charter members (1605) were also members of the Merchant Adventurers. Considering the approximately 200 members of the Merchant Adventurers operating between 1632 and 1640, only thirteen were also Levant company members.

<sup>18</sup>Of the twelve original members of the Turkey Company, for example, Brenner notes that three were Members of Parliament who were among the only 50 men in the top group of taxpayers in 1589, and two were incredibly



And this is because the barriers to entry in the eastern trades were so high (Clay, 1984; Zahedieh, 2002). By most accounts, direct participation in expanding trade required capital well “beyond that of ordinary craftsmen” (Smith, 1991). The eastern trading groups also enjoyed monopoly privileges for their specific geographic or commodity trades and were able to formally regulate who could apprentice and ultimately join their organization (Chaudhri, 1965; Brenner, 1972). The family connections and (or) material resources needed to apprentice in these organizations were beyond the means all but existing elite social groups.<sup>19</sup> The historical evidence decidedly favors interpreting the economic organization of this eastward overseas trade as favoring oligarchy.<sup>20</sup>

By contrast, the western American trades drew their ranks, not from the old guard merchants nor the eastern traders, but from a “middling sort” of smaller gentry, prosperous yeomen, and borough commercial families (Brenner, 1972). These were risky trades, requiring far more industrious and entrepreneurial outlook. And in order to enjoy any financial success, the early trading companies organized for westward ventures soon had to give far more independence to their traders (Craven, 1932). Nevertheless, in some westward trades—e.g. sugar—that initially drew a different sort into the economic elite, economies of scale eventually pushed towards concentration into “fewer and larger hands” (Price, 1989, 281).<sup>21</sup>

The ample historiographical evidence demonstrates a transformative role for the Atlantic economy in Britain, *generally*; growth in a variety of capital-intensive activities, the most significant of which was involvement in the movement of goods itself. New economic groups emerged oriented towards eastern Asian and Middle Eastern trade, and Western trade in the Caribbean and North America. But due to barriers to entry, what the evidence suggests is that these weren’t new social groups joining the economy.

## 2 Relating Trade to Changes in the Political Elite

Given the economic consequences of trade described above, I turn here to the question of elite persistence relative to turnover; the way in which new economic power is translated into political power.

Turnover in the political elite depends on more than whether there are new groups empowered by economic change. Where political power is valuable, and economic conflict between new and old economic elites is substantial, incumbent political elites have an incentive to defend their positions

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prominent Crown-City go-betweens.

<sup>19</sup>For example, in the 1600s, half of new Levant Company traders had a family member already in the company. The price of apprenticeship ranged from 200-300£, substantial for the period (Brenner, 1972).

<sup>20</sup>As Gauci (2001) writes: There were “signs of an increasingly oligarchic trend in the control of some trades by small groups of greater merchants, economic preconditions that would appear ripe for a similar stratifications of the structures of mercantile political life” (109).

<sup>21</sup>Zahedieh (2010) also makes this point about the long-run development of western colonial trades.

from new entrants (Acemoglu and Robinson, 2006*a*, 2008).<sup>22</sup> Even when there are limits to how political elites can shape economic change in defense of their positions of power, they may still be able to erect *political* barriers to a new economic elite.

Where conflict is substantial between elites, but institutions are of little value in that conflict, the need to defend or obtain political office is reduced. But of course conflict itself may bring the power of institutions themselves into contest. Even if existing institutional rules define the institution's powers narrowly, membership in that institution may be valuable as a means of expanding (or contracting) those powers. Relatedly, when institutions are valuable, but conflict is limited, we would expect the need to defend or obtain political office to be far more limited. In short, it is not self-evident that incumbents have an incentive to block new elites in every case.

I discuss each the value of institutions and the way in which they translated economic into political power, and the extent of social and economic conflict below.

## Political Institutions

The discovery of new overseas trading routes occurred during a period in which key features of the political equilibrium in Britain had been broadly stable for centuries. Britain's Parliament—comprised of the inherited title holders of the House of Lords, and the (s)elected members of the House of Commons—was the most powerful of its age amongst its continental peers, even before the Glorious Revolution.<sup>23</sup> Parliament granted some forms of “supply” (direct taxes) to the Crown, and also initiated legislation—both public acts of national concern, and private acts specific to individuals or localities. This legislative purview included realms with direct bearing on the international economy like regulation of domestic industry and overseas trade (SgROI, 2010).

Despite the relative power of Parliament—and the Commons within it—in the 16th and early 17th centuries, the Crown still reserved significant powers related to trade and the economy and was the dominant national institution. Crown approval was required for acts passed by Parliament. The Crown controlled some levers of taxation, notably customs revenues. And the Crown controlled *how* it spent parliamentary supply Cox (2011, 2015). In particular, royal investments in the navy and war-making decisions bore heavily on trade. The Crown controlled monopoly rights in trade—both in domestic and international domains (e.g. regulated and joint-stock companies) (Scott, 1910). And it administered justice related to trade through the Admiralty courts (Steckley, 1978).

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<sup>22</sup>We can think of the value of office as broadly twofold: policy and rents. As I note below, given the distributional consequences both of broad public policies (e.g. naval investments and war-making), and rents (e.g. monopoly grants) in trade-related economic conflict, there isn't major analytic gains from separating them out. I also consider below that institutions may be valuable for social reasons *other* than policy and rents, a key feature of early modern political representation, if under-appreciated by contemporary political scientists (Kishlansky, 1986).

<sup>23</sup>Acemoglu, Johnson and Robinson (2005), for example, emphasize these constraints in driving British trade relative to other European states with similar geographic endowments.

To obtain a seat in the House of Commons, candidates had to obtain a seat from one of approximately 250 constituencies. At the beginning of the period, (s)election for Parliament was process of acknowledging the social status of elites in a given constituency by bestowing upon them the honor of parliamentary service (Kishlansky, 1986). Those who were selected owed their seats to a small group of propertied voters like themselves—wealthy landed gentry and a handful of merchants (Plumb, 1969).<sup>24</sup> The homogeneity of representatives’ backgrounds, reflected in part in the limited number of families who held political power, “almost def[ined] description” (Neale, 1950, 312).

Prominent men (yes, it was only men) sought a parliamentary seat during this early period for a diversity of reasons—a seat was valuable as social confirmation, and for instrumental benefit (their own and, in some cases, their constituency’s) (Thrush, 2010a).<sup>25</sup> The modern notion of *representation* by an MP existed, but this was not the universal way in which MPs roles were considered (Hirst, 1975).<sup>26</sup>

During the 17th century, institutional changes shifted the balance of power between Parliament and the Crown, ultimately establishing parliament as the supreme governing body in Britain in 1688. From the perspective of the individual MP, these institutional changes increased the value of a parliamentary seat, shifting many powers of the Crown to the enhanced representative institution.<sup>27</sup> Yet, even before this, the value of Parliament was still substantial. The parliaments of the early 17th century were called under the Stuarts for contentious questions of taxation. The denial of supply to James I and Charles I were critical decisions for which the value of a parliamentary seat was essential.<sup>28</sup> And the importance of being seated in the Long Parliament of 1640 was clear after the parliament in the earlier part of the year was dissolved so that factions could rally their supporters to choose their representatives Keeler (1954). Parliament, therefore, was a valuable institution throughout the period, albeit in slightly different ways.

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<sup>24</sup>Only towards the end of the 17th century did party organizations develop in what was a candidate-centered electoral environment.

<sup>25</sup>“For some, the Commons was where they might help to shape the law and influence government policy, while to others it primarily represented a refuge from clambouring creditors or an opportunity to savour the delights of the capital” (Thrush, 2010a).

<sup>26</sup>While sometimes MPs were left to exercise initiative as they saw fit, at other times “they would be given detailed instructions and perhaps also ancillary paperwork to help them frame their arguments, draft any required legislation or provide evidence in case of inquiry” (Thrush, 2010b). The historiography notes occasional, but not universal, instances of accountability: “Many Members feared heavy criticism from their constituents if they failed to protect the latter’s interests.” (Thrush, 2010b).

<sup>27</sup>“For the first time in history, men were demanding something more from the State than merely law and order . . . The Law ceased to be the embodiment of custom and tradition and became an active working force to mould society” (Stone and Stone, 1984; Stone, 1972).

<sup>28</sup>To illustrate that, Charles I appointed a number of his opponents as county sheriffs in preparation for the 1626 parliament to preclude them from serving as MPs, two posts that they could not concurrently hold.

## The Dimensions of Conflict

As Stone (1972) describes the early part of the 17th century, there was no shortage of social, political and economic conflict. And as Pincus and Robinson (2011) describe the end, the aftermath of the Glorious Revolution hardly produced stability. Instead, this was the age of substantial conflict, and a seat in Parliament was valuable because of that conflict. The 17th century saw the growth of *issues* and *policy* in politics; some claim that MPs began to genuinely *represent* their constituency in a way that they hadn't previously (Hirst, 1975). The law, previously the embodiment of custom and tradition, was becoming a flexible and changeable force that different groups could harness for their benefit Stone (1972).

While the historical evidence from the previous section suggests that a capital-land conflict was not precisely what materialized from the gains and losses of trade in the early part of the period, it was the case that the financial pressures facing the Crown resulted in conflict over where taxes would fall. With the choice of direct taxes (which Parliament had to grant) unavailable to the Crown, customs duties which fell on the trading classes were substituted in its place (Smith, 1991). Although this was not protection *per se*, but revenue generation, the preferences of the new economic elite were nevertheless in contrast with the traditional landed classes. This conflict manifested as well in how and where wars were fought (albeit intersecting too with the significant religious conflicts of the age) (Stone, 1972). And the changing complexity of the economy also meant an increased demand from government for additional regulation and intervention (Stone and Stone, 1984; Stone, 1972).<sup>29</sup>

Yet, the merchant elite as a whole was hardly a homogenous body either, further complicating the notion of conflict. The monopoly privileges of the Crown became a source of distributional conflict *amongst* different merchant groups, as well as between those involved and excluded from trade altogether (Brenner, 1973).<sup>30</sup> Monopoly privileges mattered for the eastward trades. Brenner even notes that the near loss of the E.I.C.'s monopoly in the late 17th century threatened the entirety of the trade. However, the size of the trading opportunities in the Atlantic meant increasing conflict between those who sought protected status from the Crown and those who opposed it (Ashton, 1976; Clay, 1984). Most traders with the Americas advocated for freer trade Brenner (1972). There was limited overlap in the individuals involved in trades in different geographic spheres, reinforcing conflict (Brenner, 1973).<sup>31</sup>

As a consequence of the value of parliament and the conflict between merchants and other landed

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<sup>29</sup>Attempts to substitute for imports with domestic production through government regulation generally failed, and so "substitution" came in the form of empire. Fisher (1976) notes that this was far less because of a lack of political will to regulate and protect, and far more because many imports were sufficiently differentiated that they could not be domestically produced (e.g. honey as a domestic sweetener and sugar as the competing import).

<sup>30</sup>"Some of the most self-interested supporters of the Crown were the merchant oligarchies which controlled the political and economic life of the towns" and who had a vested interest in maintaining the economic privileges like monopoly rights granted by the Crown (Stone, 1972).

<sup>31</sup>As one example, only 5 of the 41 leading Merchant Adventurers of the early 1600s were among the 118 Levant company charter members of 1605.

elites (as well as *between* different merchant groups themselves), there was reason for new economic elites to seek parliamentary office. There was reason for them to look to translate their changing economic power into political power.

### 3 The Evolution of Parliamentary Elites

I begin by descriptively evaluating political representation in the long 17th century, using a new dataset on the economic, social and familial bases of power covering the universe of MPs who sat in the House of Commons from 1550-1750. I collect this data from a number of sources: biographies from The History of Parliament Project (2013) for the periods 1558-1639 and 1660-1751, inclusive, which I web-scraped and compiled; and Keeler (1954), Brunton and Pennington (1954), and Salmon (2015) (pre-publication data) for the 1640 Long Parliament, including recruiter-MPs.<sup>32</sup>

#### The Economic Bases of Power

I consider first the economic interests and activities of MPs to understand how representative power reflected the gains and losses from expanding overseas trade.<sup>33</sup> I use natural language processing on the biographical information from the HPP—specifically, an iterated modified dictionary classification to identify key words and phrases that indicate the economic activity that a given MP was engaged in, along with an extensive exclusion dictionary to identical key words that derive from phrases referencing something other than the MPs economic activity.<sup>34</sup> I am able to code MPs’ involvement in a number of categories of economic activity, but I focus primarily on whether they were involved in commerce or other capital-intensive activities.<sup>35</sup> I also code, specifically, whether MPs were members of the old guard Merchant Adventurers, involved in the eastward Middle East and Asian trade, or whether they were involved in the westward “New World” trades, including Africa. MPs who were not involved in commerce or other capital-intensive activities represented lawyers, courtiers, military officers, and the occasional yeoman.

I allow MPs to be interested in multiple economic activities, although on average I code MPs as engaged in just 1.6 activities. For the analysis I use an inclusive measure of commercial involvement—if they were *at all* engaged in a particular activity. Doing so captures the fact that

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<sup>32</sup>There are 10572 unique MPs as identified by first name, last name and birth year during the period I study. The HPP data includes richly detailed biographical data. Keeler’s biographies are more limited in scope. Other sources only provide name data. All sources link MPs to the geographic constituencies that they served for and the parliaments they were elected to. See Appendix B.

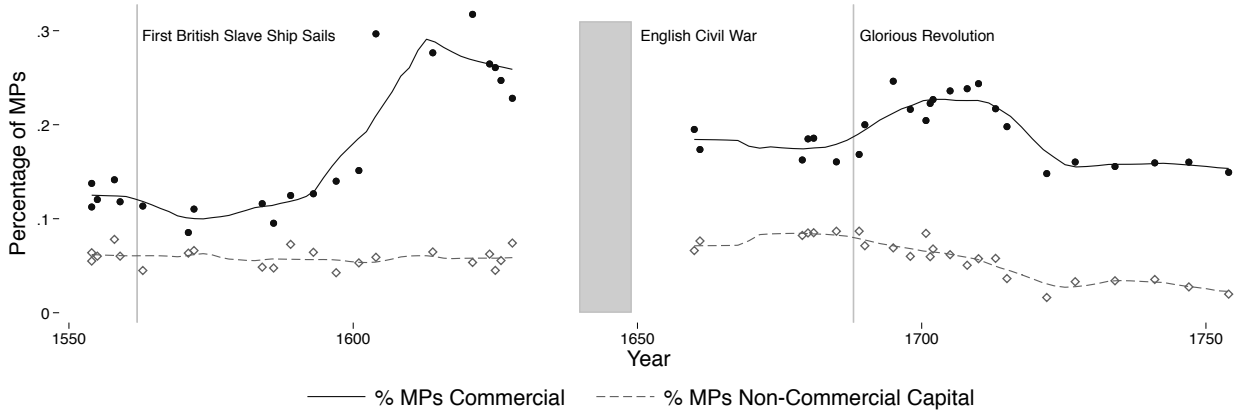
<sup>33</sup>Appendix C describes the coding procedure in more detail.

<sup>34</sup>With more than ten thousand individuals, it is too labor-intensive to code each biography. For example, “merchant” helpfully indicates that an MP was involved in commerce. However, the word “merchant” in the phrase “spoke to the merchant about...” does not and must be excluded.

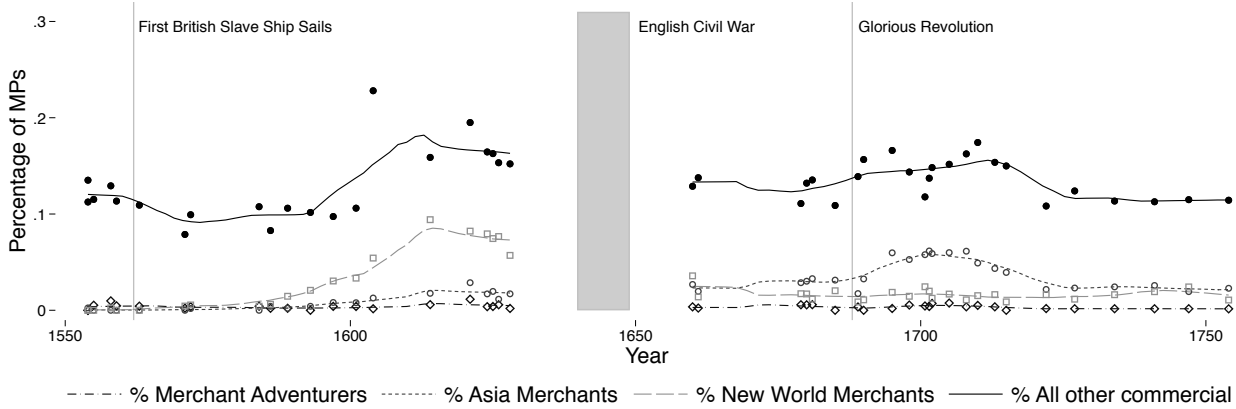
<sup>35</sup>Commerce includes both those MPs involved in overseas trade directly, as well as retailers and wholesalers. Non-commercial capital activities include manufacturing (including textiles), mining, and non-lawyer professions like doctors and architects. See Appendix J for information on all trends.

Figure 1: Trends in merchants and capitalists in Parliament, 1550-1750

(a) Commercial and capital MPs



(b) Overseas commercial MPs by geography of trade



*Sources:* Author’s calculations based on data from The History of Parliament Project (2013). See text for more details.  
*Notes:* The top plot presents trends in each commercial men in parliament and non-commercial capitalists (i.e. those involved in manufacturing, mining, textile production, banking and (non-legal) professions like doctors and architects). The commercial trend in plot (a) includes, *but is not limited to*, the three types of overseas traders presented in the bottom plot. The bottom plot breaks out the commercial trends specifically for those MPs with mercantile interests in each the Merchant Adventurers, Asia (eastward trades including the Middle East, South Asia, etc.), and the “New World” (Caribbean and North America and Africa). In both plots above, the English Civil War (1640-49) is shaded in gray, and a gray vertical line at 1688 indicates the Glorious Revolution settlement. See Appendix J for all trends.

the expansion of trade likely shifted people gradually towards commercial activities, but many may have still maintained a foothold in their previous economic activity. The biographies are not sufficiently detailed to identify the *primary* interest of the MP, nor their temporally *first* interest.

Figure 1 presents two centuries of trends in the representation of commerce in Parliament. Commercial men were represented in Parliament prior to the Atlantic economy, reflecting the importance of commerce and overseas trade in Britain even during the medieval period. Crucially, however, the percentage grew dramatically into the early 17th century. Jumping dramatically—from 15% to 30%—from the last of Elizabeth I’s parliaments (1601) to the first of James I’s (1604). The parliaments of the early 17th century Stuart kings generated significant interest

amongst commercial men. The Restoration saw a slight dip in representation, before the “Rage of Party” era following the Glorious Revolution once again led to a spike in representation. By contrast, non-commercial capitalists represented  $\sim 7\%$  of Parliament consistently throughout the period, despite the expansion of trade.

Examining only those merchants identified in trades directly linked to one of three areas—the European continent (specifically, Merchant Adventurers), Asia and the “New World”—their absolute proportion is small ( $<10\%$ ). Merchant Adventurers—the old-guard merchant elite—were directly represented by only a few MPs, even at the height of their economic power in the mid-16th century. New World merchants increased their representation in the early 17th century—a period when those trades were still new and uncertain. Their share declined and never recovered following the English Civil War. Those eastward trading merchants, by contrast, gained little in direct representation prior to the civil war, but did experience a slight boost to their proportion in the post-Glorious Revolution period.

While the involvement of MPs in particular economic activities offers an excellent way of capturing their economic interests, the growth of *investment* opportunities in the expanding Atlantic economy means that measuring direct involvement alone may undercount the true transformation of the political elite (Schonhardt-Bailey, 1991; Brenner, 2003; Jha, 2015). Therefore, I utilize data from Rabb (1967) that covers the period 1575-1630 on the overseas joint-stock share ownership of MPs.<sup>36</sup> This data covers thirty-five overseas joint-stock companies and MPs’ first recorded date of ownership, if they owned shares. I use the data to measure whether an MP was a shareowner in a given parliament (coding MPs as share owners in any parliament after the first recorded date of ownership).<sup>37</sup>

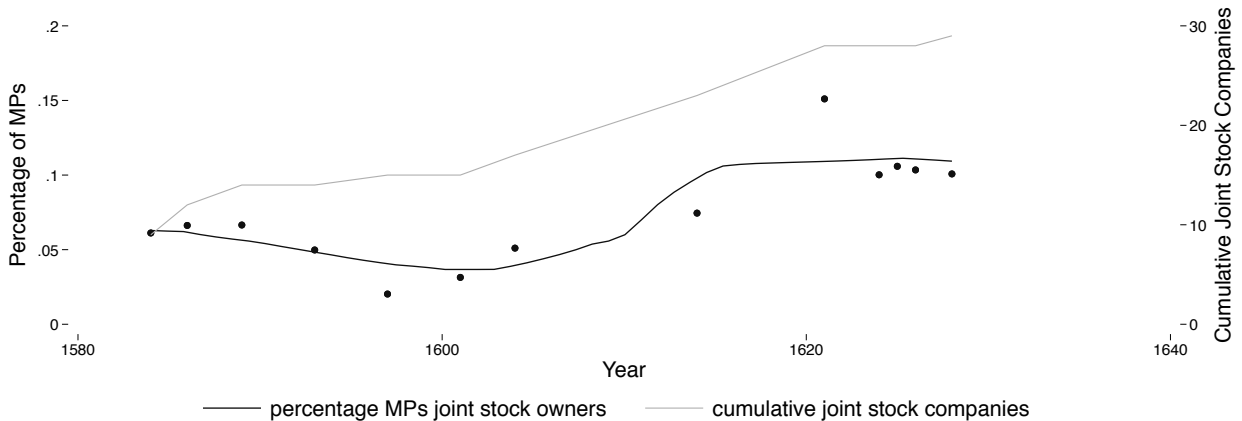
In Figure 2, I examine the growth of MP investments in overseas joint-stock companies, along with the cumulative trend in overseas joint stock companies that individuals could invest in. Although the investment data is only available pre-1630, the trend in investment follows that of commercial involvement measured in Figure 1, though total investors are never more than 15% of MPs at their peak. Amongst joint-stock owners, as measured by Rabb (1967), I find that 58.5% are also commercial men as measured above. Thus, the growth of non-commercial joint stock owners was a small increase to the total percentage of commercial MPs in the late 16th and early 17th centuries.

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<sup>36</sup>Conversations with the research team at the HPP indicated that share ownership (of any type) was not systematically researched and recorded in their biographies. However, the discussion of economic activities and involvement in the biographies may still occasionally capture investments.

<sup>37</sup>The data does not record share sales, only the date of first recorded ownership. However, the market for shares was not well developed and so the sale of shares was not commonplace (Walker, 1931; Rabb, 1967).

Figure 2: Trends in overseas joint stock ownership by MPs, 1550-1630



Sources: Authors calculations based on Rabb (1967).

Notes: MPs are coded as investors in an overseas joint-stock company if they are recorded as having owned shares in any one of the thirty-five companies (minus the Merchant Adventurers, since Rabb did not consistently code them) that Rabb records in his data in that parliament year, or any previous year. Given that shares were rarely transferred or sold during this period, Rabb only records when MPs purchased shares, not if or when they divested. See the text for more details on coding and measurement. The cumulative number of chartered overseas joint-stock companies counts the number of charters granted (but potentially inactive) from 1575 on.

## The Social Bases of Power

While the economic activity and investments of MPs tell us something about how the distribution of political power may have shifted from trade, those measures don't tell us whether trade shifted the social groups from which political elites were drawn. To measure these additional sources of social power, I measure the family (dynastic) connections amongst MPs (see e.g. (Dal Bó, Dal Bó and Snyder, 2009; Querubin, 2016)), connections between MPs and members of the hereditary aristocracy, and the background of MPs' family.

I code two MPs as members of a political dynasty if they share the same last name but have different first names (or if they share the same first name, if they have different birth years, or different numerical suffixes; e.g. John Richards *II*).<sup>38</sup> I further restrict last name connections to individuals who served for the same constituency, ensuring that I don't connect two Smiths from different parts of the country who are unlikely to be related. I validate the within-constituency last name matches using a random 1% sample of dynasties whose connections I check against historical sources. I find that above 90% of the dynasties that I code represent true family connections.<sup>39</sup> Although I analyze data from 1553 on, I use data back to 1529 to connect dynasties in an effort to observe dynastic status even in the earliest period of my data. I measure dynastic concentration

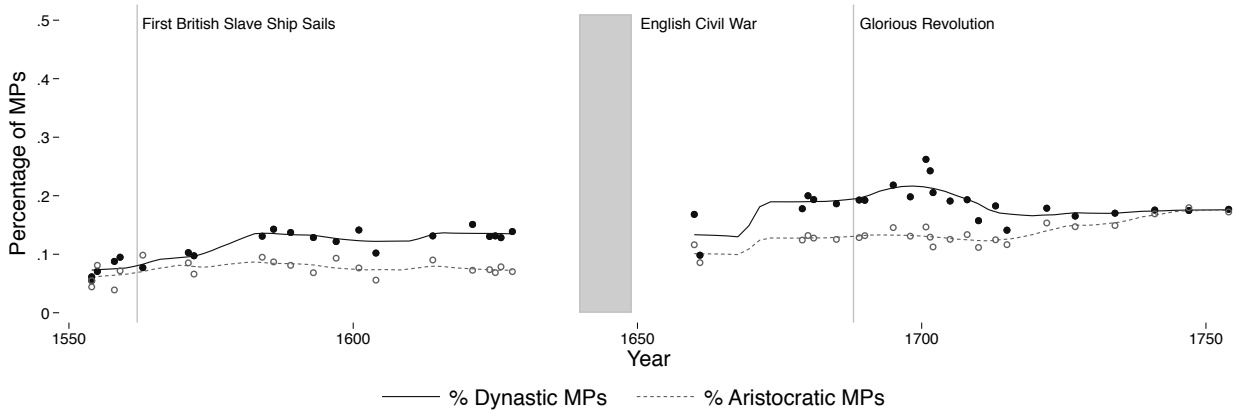
<sup>38</sup>I correct last names for minor spelling differences (e.g. Addams and Adams), and, when possible, I connect matrilineal dynasties through component parts of hyphenated last names. Thus, Cavendish and Cavendish-Bentinck are connected as part of the same dynasty.

<sup>39</sup>The validation of family matches are made only through close relatives—direct descendants (i.e. the grandfather-father-son line), uncles, first cousins, brothers, and marriage (in the case of multiple or hyphenated last names). While family information is available in the biographies that can be used to indicate whether an MP was related to a previously (or subsequently)-serving MP, it is unfortunately not easily coded for the full set of biographies.

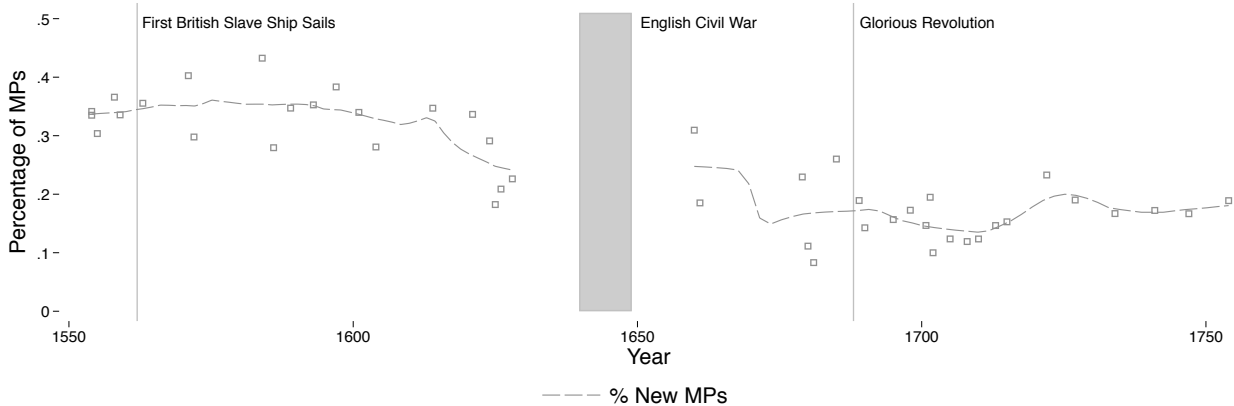


Figure 3: Trends in dynastic, aristocratic and new MPs in Parliament, 1550-1750

(a) Dynastic and aristocratically connected MPs



(b) MPs representing a new individual from a new family



Sources: Author's calculations based on data from The History of Parliament Project (2013). See text for more details.

Notes: The top plot presents trends in each dynastically connected MPs and aristocratically connected MPs. The bottom plot presents trends in the percentage of MPs who are serving for the first time (or whose family is serving for the first time) See Appendix J for all trends.

as, first, the percentage of MPs in a given parliament with this family-specific connection; and second, the percentage of MPs who are *new*—that is, who are serving for the first time, and whose families have *also* not previously served.<sup>40</sup>

While family connections were of high socio-political relevance during this period (Neale, 1950), family connections obtained particular importance in the context of the hereditary aristocracy. Those with hereditary titles—the peerage—had rights to sit in the House of Lords and comprised the traditional apex of the elite in Britain. They were in general the wealthiest, largest landowners, with the most social capital and largest spheres of influence. Peers in the Lords could not maintain a concurrent seat in the Commons, but their relatives could. Therefore, I code an MP as aristocratically connected if their biography mentions that either their father, or their father-in-law (if

<sup>40</sup>It's important to note that the former measure captures the *general* concentration of power within families, not *which* families, specifically.

married), held a hereditary title.<sup>41</sup>

Finally, I use the biographies to code the economic interest of the MPs family, usually his father. Even into the 19th century, so-called “new men,” those whose wealth did not originate from the idle overseeing of a landed estate, sought to acquire land and the social status that it entailed (Thompson, 1963). There thus existed a cycle between generations from economic activity focused on commerce to estate ownership and sometimes back again. To capture the extent of this second-generation rise to political power of commercial capital *families*, I code an MP as having a family involved in commercial activity if the family description section of the HPP biography, or the first sentence of the narrative text biography mention that the father (or family or wife’s family) was engaged in commerce.

Figure 3 presents the trends in dynasties, aristocracies and MPs whose themselves and their families have not previously served in a constituency over the long 17th century. Despite the dramatic change in the economy brought about by trade, I observe relatively little change in the social backgrounds of MPs, either in dynastic connections or aristocratic connections.<sup>42</sup> If anything, dynastic and aristocratic connections were *more* likely amongst MPs as the period progressed.

In terms of new MPs, 30-40% of MPs were themselves—or represented a family who was—serving a given constituency for the first time until the early 1600s. After the civil war, the proportion of new MPs stabilized around 20-20%. The era immediately following the Glorious Revolution was a period of particularly low volatility, likely reflecting the importance of party in organizing representation and therefore limiting turnover in individual representatives. In general, it was not the case that elite circulation increased throughout the period.

## 4 Estimating the Relationship Between Trade and Political Representation

The trends presented in the previous section given us some descriptive insight into how political representation was changing over the long 17th century. In this section, I turn to linking those relationships more directly to the economic changes brought about by trade. The ideal design would allow me to relate fine-grained local (constituency-specific) measures of (exogenous) trade involvement to the characteristics of political elites (sel)elected from those constituencies. Perhaps not surprisingly, studying economic change as early as the 1500s, and individual-level political dynam-

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<sup>41</sup>I exclude the baronetcies which were a hereditary (but non-peerage) title created in 1611 to raise revenue for the Stuarts. Appendix F notes that there was a growth during this period of new aristocratic titles in addition to the new category of the baronetcies.

<sup>42</sup>Though the absolute level of aristocratic connections presented in the plots is low, it accords with existing estimates in the literature (Thrush, 2010*a*). Thrush estimates those with aristocratic connections at about 10% in the pre-1640 period.

ics, presents a number of data challenges that render those ideal designs infeasible. In particular, systematic geographically-disaggregated data on the growth of trade is simply unavailable during the period of Atlantic expansion.<sup>43</sup>

## The Empirical Approach

The empirical strategy that I employ evaluates the way that an aggregate measure of British trade differentially (i.e. heterogeneously) affected the characteristics of political representatives by constituency-specific features. This approach fundamentally relies on the logic that the *likelihood* of observing changes in political representatives, and the *magnitude* of any changes, should be greater in constituencies that were *more* affected by the growth of Britain-wide trade.

I measure which constituencies were more (or less) likely to be involved in expanding trade with the following three (mutually exclusive) binary constituency indicators: whether a constituency was a county, a borough, or an (out)port. I further separate London from outports because of its singular position in national trade. As noted earlier in the paper, the growth and shifting composition of trade resulted in a particular spatial distribution of changing economic activity that reflected the importance of the movement of imported goods.

Counties were large constituencies that encompassed rural agricultural areas, along with a few scattered towns (that did not have their own representation), and were less likely to the largest effects of economic change. Boroughs, by contrast, were small “urban” town constituencies where trade-related economic activity was more likely to be concentrated. Of course, boroughs were not homogenous, and some were little more than the domain of a local magnate with little meaningful economic activity. These less dynamic boroughs are likely to attenuate the average effect of the relationship across all boroughs (essentially, an *intent to treat*).<sup>44</sup>

Finally, (out)port constituencies were those where economic trade should have exerted the largest

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<sup>43</sup>Systematic national trade statistics measuring imports and exports do not begin until after 1689, after the expansion in trade associated with the Atlantic economy was well underway (Mitchell and Deane, 1971). The port-specific records on which this national information was based—the “port books” are missing or destroyed for many crucial ports (including London) during much of the 17th century (Astrom, 1986; Jarvis, 1957). Other measures of trade—customs records at headports, entries and departures of ships, the tonnage of those ships, etc.—are highly circumscribed in the scope of their availability. See Jarvis (1957); Davis (1962, 1973*a*, 1956) for various discussions on port and trade data from the 16th and 17th centuries. Somewhat surprisingly, data from the earlier medieval period on wool and woollen cloth exports is more systematically available, yet stops around the beginning period of this papers’ study (Carus-Wilson and Coleman, 1963). Lambert and Baker (2019) have an excellent record of sailings from different medieval ports that also stops before this paper’s period of study. Though, as they carefully describe, their sailings are subject to significant missingness. Even increasingly common proxies for economic activity in historical periods—for instance, population and urbanization measures (Stasavage, 2014; Acemoglu, Johnson and Robinson, 2005)—are not sufficiently fine-grained in either geographic or temporal scope to match the richness of the political data that I collect.

<sup>44</sup>Attenuation biases towards the null hypothesis, though is not helpful in terms of properly estimating the true effect. Thus, I also separately estimate differential effects by the specific franchise requirements of boroughs. I use information on the type of constituency and the voting rule from (The History of Parliament Project, 2013). See Appendix B.

effect on economic power, and in turn (potentially) political power. As described earlier, ports—and not simply London, though the scale of the changes were largest there—attracted new labor and capital directly involved in the movement of goods, as well as secondary commerce and manufacturing. I measure ports as those borough constituencies with (1) close ocean access that (2) historical sources identify as active in transporting goods in the medieval (pre-1600) period.<sup>45</sup> As with the borough measurement, the measurement of ports may capture some medieval ports that were in decline and could not have been involved in the new Atlantic economy. Location, silting, and even non-geographic factors may have led some ports to move into the Atlantic trade, while others did not. As such, the port indicator is a somewhat blunt measure, yet again captures the idea of an *intent to treat*.<sup>46</sup>

I measure the aggregate growth of trade during the 16th and 17th centuries with a multi-part strategy. This is because even frequently-measured aggregate trade data are hard to find for this period. First, I use data from Eltis et al. (2016) to measure British-flagged ships engaged in the Atlantic slave trade.<sup>47</sup> One absolutely critical component of the emergent Atlantic economy was the movement of human slave cargo from Africa to the “New World”.<sup>48</sup> The slave trade in the 1700s, wrote the merchant James Houston, “is the hinge on which all the trade of this globe moves” (Rediker, 2007). Figure 4 documents the growth in the trade. This cross-Atlantic trade did not exist prior to the 16th century, and therefore explicitly captures the growth of *new* trade during the period.

British slave voyages were part of a so-called “Triangle Trade” in the Atlantic. Sugar products, tobacco, dyes and other (largely) raw materials traveled from the Americas to Britain. Light manufactures departed British ports for Africa to pay for the American-bound human cargo (Gillispie, 1920; Findlay, 1990). Importantly for this analysis, slave ships were Britain-based, starting their journey in ports like London, Bristol, and Liverpool (Inikori, 1992; Rawley and Behrendt, 2005). In addition, the trade in slaves moved in broad proportion to the movement of overall triangle trade goods into and out of Britain (Findlay, 1990).<sup>49</sup> The available data is also

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<sup>45</sup>I use 10km from the ocean to measure closeness, and the measurement is not sensitive to this choice. I use the pre-1600 period to avoid the endogeneity of localities later *becoming* ports as a function of politics. Although some ports did not have their own parliamentary representation and were instead represented by the larger county that they were in, this is rare. In addition, the size and economic complexity of counties makes the impact of a single port likely to be small. Thus, it’s hard to think of a county as a whole being differentially treated by expanding trade simply because one of its many towns was a minor port. See Appendix B for more details on the data and measurement choices.

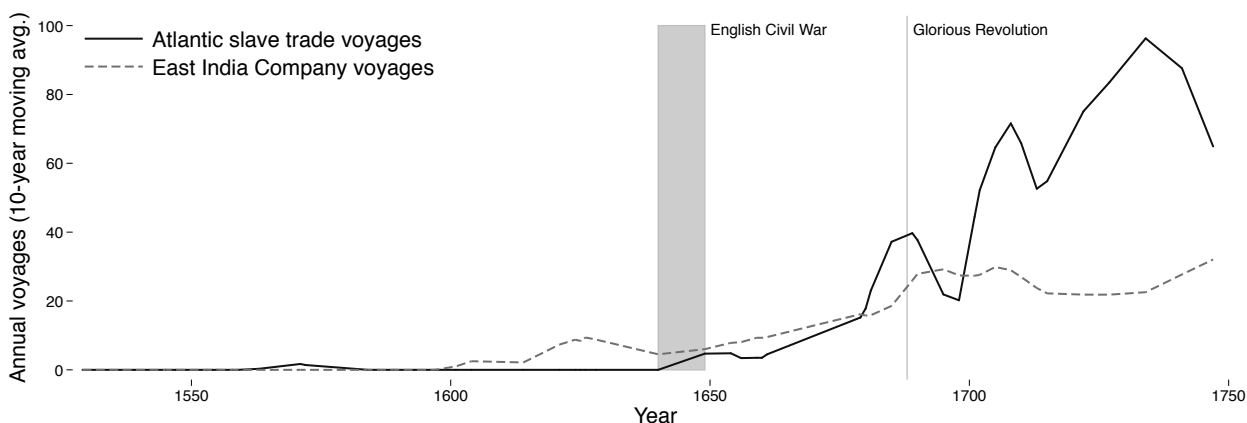
<sup>46</sup>While a “natural harbor” measure might accomplish something similar (Jha, 2008; Gerring et al., 2018; Haber, 2012), the dimpled nature of the British coast and the massive changes in silting that have changed harbor depths over the past half millennium render this strategy infeasible (Edwards and Hindle, 1991). See Appendix B for additional discussion.

<sup>47</sup>I measure the 10-year backward looking annual average of British-flagged Atlantic slave voyages. This smoothes year-on-year volatility, and better matches the annual voyage data to the non-annual parliament data.

<sup>48</sup>British slave ships supplied labor to the tobacco plantations in the early 1600s. Labor-intensive sugarcane production, brought to Barbados in 1630 and spreading rapidly from there, led to the enormous expansion in the slave trade in the late 17th century.

<sup>49</sup>The growth in this leg of the triangle trade mirrors the pattern other historians of the time have noted in terms

Figure 4: Trends in long distance trading voyages, 1550-1750



*Sources:* Slave voyages are calculated from Eltis et al. (2016); East India Company voyages are calculated from Sutton (1981).  
*Notes:* The above plot shows two trends in British overseas voyages: (1) average annual slave voyages by British flagged ships, and (2) average annual East India Company voyages. Both voyage series are calculated as 10-year backwards moving averages to smooth year-on-year volatility, and to better match the annual voyage data to the non-annual parliament data (i.e. parliament did not meet every year). For reference, the English Civil War (1640-49) is shaded in gray, and a gray vertical line at 1688 indicates the Glorious Revolution settlement.

temporally fine-grained, and thus able to match the rich dynamics of data on representation.

Despite these empirical advantages, using British-flagged slave voyages to measure the growth in British trade a number of drawbacks as well. The trade was subject to somewhat unique fluctuations in the American and Caribbean colonial markets, as well as naval conflicts that did not necessarily affect *all* British overseas trade during the period. While the moving average helps to smooth these fluctuations, the series in Figure 4 still shows some large fluctuations.<sup>50</sup> Slave voyages were deeply related to the overall Atlantic economy, but were still only one (albeit key) component of a complex growth in trade.

Therefore, in addition, I use the number of East India Company (E.I.C.) voyages (Figure 4) as an alternative measure of the expansion of trade (Sutton, 1981). Like the slave trade voyages, the E.I.C. voyages offer the benefit of capturing trade that was fundamentally *new* as the Atlantic economy expanded. Though, like slave voyages, they also have limits—reflecting only voyages for one company travelling to Asia, and thus only one part of the entire Atlantic economy.<sup>51</sup> Thus, as Figure 4 demonstrates, the trends generally moved in the same direction, reflective of the fact that overseas trade was growing in total. The earlier E.I.C. growth reflects that eastward trade grew first—but the growth in slave voyages indicates how the western colonial trade became significant.

In order to assess the heterogenous relationship between expanding trade and constituencies more likely to be affected by the changing economy, for constituency  $i$ <sup>52</sup> and parliament beginning in

of the growth of Atlantic trade more generally (Davis, 1973a). For reference, Appendix F documents other series capturing aggregate trends in trade.

<sup>50</sup>The Nine Years War and the War of Spanish Succession are responsible for the largest of the fluctuations.

<sup>51</sup>Tonnage moved in similar ways to voyages. See Appendix F for the detailed E.I.C. trend data.

<sup>52</sup>The specific geographic unit of analysis in the paper is a *synthetic* constituency unit. This ensures a balanced

year  $t$ <sup>53</sup>, I use OLS to estimate

$$y_{it} = \alpha_i + \gamma_t + \beta_1(\text{trade}_t \times \text{london}_i) + \beta_2(\text{trade}_t \times \text{port}_i) + \beta_3(\text{trade}_t \times \text{borough}_i) + \beta_z(\text{trade}_t \cdot \mathbf{X}_{zi}) + \epsilon_{it} \quad (1)$$

where  $y_{it}$  is one of the political outcomes of interest,  $\text{voyages}_t$  captures the aggregate trend in transatlantic slave voyages (or alternatively East India Co. voyages),  $\text{london}_i$  is an indicator equal to one for the City of London constituency,  $\text{ports}_i$  is an indicator equal to one for cities identified as important medieval ports, and  $\text{borough}_i$  is an indicator for whether a constituency was a borough. The residual category is a county constituency. The parameters of interest in equation 1 are  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ . Each represents the *differential* relationship between the aggregate growth in trade during the period by a given constituency feature.

To account for all other time non-varying heterogeneity unique to a constituency, I include constituency fixed effects ( $\alpha_i$ ). Thus, *any* (time invariant) reason that some constituencies might be more likely than others to experience changes in their representation will not bias the estimates. Given the use of these unit fixed effects, the base levels of each *london*, *port* and *borough* are not separately estimated; only their interactions. To account for time-specific shocks that are common to all constituencies (e.g. the length of time since the previous parliament, war, institutional change), I include parliament fixed effects ( $\gamma_t$ ). Finally,  $X_{zi}$  are a set of constituency-specific control variables interacted with the trade trend to account for the role that geographic and medieval infrastructure features might have played in placing constituencies on different political trends.<sup>54</sup> The idiosyncratic error term is represented by  $\epsilon_{it}$ . In the analysis, I cluster the standard errors at the constituency level to account for common political shocks as well as serial correlation by unit.

There are two main challenges to causal inference: (1) unobserved constituency-specific heterogeneity correlated with the constituency measures used here (ports, boroughs, etc.), and (2)

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panel when constituencies on occasion merge or split during the period I study. To construct these units, I identify and use the common maximal boundary of merged/split constituencies. As an example, consider constituency A in period 1 that splits into two constituencies B and C in period 2 (i.e. a new constituency was created in period 2). My dataset then contains two synthetic units corresponding to the boundaries of B and C. Those units would *each* be assigned the representation (MPs) of constituency A in period 1, and their unique (separate) representation in period 2. I cluster standard errors at the level of shared political history and conduct various analyses on constituencies with stable boundaries to ensure that this assignment of representation does not determine the results. Readers familiar with grid-cell analyses will note that this strategy is akin to using a grid-cell analysis where cells are maximal geographic units that ever have their own unique representation. See Appendix L.

<sup>53</sup>The temporal scope covers the 48.0 parliaments in the period 1553-1750, with the following exceptions. First, I do not include the three parliaments of the Protectorate—1654, 1659 and 1659—because of significantly different patterns of constituency representation, different selection processes and the far more limited availability of data. In the case of the 1640 Long Parliament, I separate the extremely long (technically two decades) parliament into two groups: MPs recruited in 1640 (or who replaced initial recruits up to 1648), and second, those who sat in the 1649 Rump or later. In the analyses, I use only pre-1649 MPs (when I have data for the Long Parliament at all). As the English Civil War developed, the nature of representation in the Long Parliament changed dramatically, making it difficult to properly compare those initially selected as compared to those selected later. Authors such as Brunton and Pennington (1954) and Keeler (1954) also distinguish between the early and later recruiter elections.

<sup>54</sup>The constituency features are: medieval road density, medieval navigable river density, soil quality, precipitation, slope, and ocean proximity. See Appendix B for full details on the coding of the controls.

endogeneity of the aggregate trend in trade to political changes in a particular constituency. To address (1), I attempt to account for observable confounders by measuring constituency features (indexed by  $z$ ) and interacting those features with the aggregate trend in slave voyages. The challenge, of course, is that all potential confounders are not necessarily observable.<sup>55</sup>

Regarding (2), the endogeneity of the aggregate trend in trade, we may be concerned that the aggregate trend reflects changing political dynamics in one constituency with dominant influence over trade. In such a case, the aggregate trend in trade cannot be considered exogenous to politics for some constituencies. If, for instance, greater representation of commercial men in one constituency drove the expansion of trade (as opposed to the reverse), and if that one constituency was the dominant contributor to the aggregate trend in trade, then that dominant constituency would bias our estimates. The most likely constituency to have this dominant influence is London; no other constituency came close to its role in overseas trade (Davis, 1962). Because the estimated differential effect for London is separated out ( $\beta_1$ ), some caution in (causally) interpreting that specific estimate might be in order.

## The Results

Table 1 presents the more formal results from estimating equation 1.<sup>56</sup> The results show that commercial men were more likely to obtain parliamentary seats in London, ports and boroughs (as compared to county constituencies) as the Atlantic economy grew. This growth was largest in London, and an order of magnitude smaller in the outports and boroughs. The magnitude of the effects indicate, for example, that an increase in 10 Atlantic slave voyages was, on average, associated with a  $\sim 7$  percentage point increase in the probability of a commercial man becoming a borough MP (about a  $1/4$  of a standard deviation in the outcome). Non-commercial capitalists showed no such growth as trade expanded—rather their representation generally declined in all of those constituencies most affected by trade. Thus, the transformation of the economy was hardly a political boon for capital, *generally*.

While the results for all MPs involved in any form commerce are telling, as noted previously, the commercial interest was not a homogenous group. Instead, there existed factions with divergent interests—an old-guard merchant elite (broadly represented by the Merchant Adventurers) and two distinct *new* commercial elites. As the Atlantic economy shifted economic activity away from European wool trades that had dominated the 16th century, Table 1 shows that the Merchant

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<sup>55</sup>It bears repeating that the inferential threat of remaining unobserved constituency features not captured by these covariates is not simply *level differences* in political outcomes between constituencies of different types. Those level differences are accounted for in the constituency fixed effects. Instead, the threat is that a constituency feature correlated with a constituency being a port, for instance, is the true driver of different political trends as trade expands.

<sup>56</sup>Appendix I presents estimates using East India Company voyages as an alternative measure of the expansion in trade during this period.

Table 1: Relationship between slave trade voyages and the economic interests of MPs

	% Commercial (All)	% Non-Comm. Capitalist	% Merchant Adventurers	% Asia Merchants	% New World Merchants
	(1)	(2)	(3)	(4)	(5)
London $\times$ Slave Voyages	0.0038*** (0.00046)	-0.0011*** (0.00023)	-0.0039*** (0.00013)	0.0028*** (0.00031)	0.0018*** (0.00024)
Port $\times$ Slave Voyages	0.00094** (0.00044)	-0.00034 (0.00022)	-0.000098 (0.00011)	0.0012*** (0.00028)	0.00034 (0.00021)
Borough $\times$ Slave Voyages	0.00072*** (0.00027)	-0.00043*** (0.00013)	0.000020 (0.000024)	0.00041** (0.00017)	0.00025** (0.00012)
Constituency FE	✓	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓	✓
Controls $\times$ Voyages	✓	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206	21206
Mean of DV	0.16	0.050	0.0048	0.047	0.044
Avg. within- <i>i</i> SD of DV	0.26	0.15	0.044	0.15	0.15
P-Value Joint Test	0	0	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. The unit of analysis is the (synthetic) constituency-parliament start-year. The dependent variable % Commercial (All) measures all MPs involved in commerce of one form or another, including (but not limited to) Merchant Adventurers, Asia traders, and New World traders. Non-commercial capitalists are those involved in industrial and professional activities not already included in commerce. The residual constituency-type category against which all coefficients are compared to is a county constituency (i.e. a rural constituency). London, ports and boroughs are measured mutually exclusively from one another. All ports constituencies were borough types. The controls interacted with the trend in slave voyages are: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that all coefficients presented are equal to zero.

Adventurers experienced large declines in their old stronghold constituency; London. In their place rose representatives of merchants involved in the expanding Atlantic economy.

The results in Appendix I show that using E.I.C. voyages to measure trade produces the same substantive findings—an overall growth in the representation of the merchant interest (strongest in London, then outports, then boroughs), a decline in Merchant Adventurers, and a growth in Asian and New World Traders (again strongest in London, then outports, then boroughs).<sup>57</sup>

In Table 2, I present estimates of how the ownership of shares in overseas companies by MPs differed by constituency type as Atlantic trade expanded. I use East India company voyages to measure the aggregate trend in trade since it offers meaningful variation in the restricted time period. Consistent with the findings for commercial men, generally, the findings indicate that as trade grew, MPs invested in joint stock companies were more likely to obtain political power in London, ports and boroughs, relative to rural county constituencies. An increase in 10 EIC voyages is associated with a 5 percentage point increase in borough stock owners, 15 percentage points in ports, and 50 percentage points in London.

<sup>57</sup>In terms of magnitude, an increase in 10 E.I.C. voyages is associated with a 20 percentage point increase in commercial MPs in boroughs relative to counties; about one standard deviation.



Table 2: Differential relationship between trade and MPs invested in overseas joint stock companies

	% Joint Stock Owners
	(1)
London $\times$ EIC Voyages	0.052*** (0.0034)
Port $\times$ EIC Voyages	0.015*** (0.0040)
Borough $\times$ EIC Voyages	0.0047** (0.0019)
Constituency FE	✓
Parliament FE	✓
Controls $\times$ Voyages	✓
Obsv. (Constit.-Parl.)	10534
Mean of DV	0.041
Avg. within- <i>i</i> SD of DV	0.14
P-Value Joint Test	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. The unit of analysis is the (synthetic) constituency-parliament start-year. The dependent variable is the percentage of MPs recorded as owning shares in overseas joint-stock companies either in that parliament, or any previous parliament. The residual constituency-type category is a county constituency (i.e. a rural constituency). London, ports and boroughs are measured mutually exclusively from one another. All ports constituencies were borough types. The controls interacted with the trend in slave voyages are: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that all three presented coefficients are equal to zero.

Thus far, the results indicate that expanding trade resulted in the representation of those interests most likely to benefit from expanding trade in precisely those constituencies where the economy was changing. Despite the fact that MPs did not *de facto* need to reside (own property) in the constituencies that they served, there is a strong link between local economic change and representation. In fact, commercial men were no more likely to be “carpetbaggers” (serve for constituencies where they did not own property) than non-commercial MPs (15.7% as compared to 14.8%). Table 3 presents an alternative way of examining the link between geographic and economic interest representation as trade expanded.

The previous results suggest that political power opened to new *economic* groups in those places where trade exerted the strongest economic effects. But it is not necessarily the case that these MPs represented new groups in society in such a way that reflected a broader opening of political power. Therefore, I also consider how the social and family backgrounds of MPs changed in response to expanding trade. In Table 4 I evaluate the differential relationship between expanding trade and the social and family backgrounds of MPs. I find little evidence that expanding trade

Table 3: Differential relationship between trade and MPs without property in the county

	% w/o Property in the County
	(1)
London $\times$ Slave Voyages	0.0055*** (0.00074)
Port $\times$ Slave Voyages	0.0015*** (0.00049)
Borough $\times$ Slave Voyages	0.00060* (0.00032)
Constituency FE	✓
Parliament FE	✓
Controls $\times$ Voyages	✓
Obsv. (Constit.-Parl.)	22134
Mean of DV	1.01
Avg. within- $i$ SD of DV	0.44
P-Value Joint Test	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. The unit of analysis is the (synthetic) constituency-parliament start-year. The dependent variable is the percentage of MPs that are not described as having a residence in the county in which the constituency is located. The residual constituency-type category is a county constituency (i.e. a rural constituency). London, ports and boroughs are measured mutually exclusively from one another. All ports constituencies were borough types. The controls interacted with the trend in slave voyages are: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that all three presented coefficients are equal to zero.

resulted in increased dynastic turnover of MPs. Relative to county constituencies, all constituencies affected by trade were more likely to be represented by dynastic MPs. Thus the familial concentration in power was no different amongst the new economic elite relative to the old.

In terms of aristocratic connections, these increased outside of London as trade expanded (relative to rural county constituencies). However, London did experience a decline in MPs with such connections, suggesting that London may have had a different experience with trade, perhaps by virtue of being the dominant constituency. Similarly, columns (3) and (4) of Table 4 show that new MPs and MPs with a merchant background were more likely to find a seat in Parliament in London, but not in any of the other constituencies affected by trade. Together these results suggest very particular dynamics for London as compared to the rest of Britain, which perhaps reflects the outsize role of trade in that particular constituency, and they way that its politics may have (endogenously) driven the overall trend for Britain.

Overall, the results suggest that trade very much drove new economic elites into political power in those constituencies most affected by the commercial economy. But trade was not a wider

Table 4: Differential relationship between slave trade voyages and social backgrounds

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages ( $\beta_1$ )	0.0019*** (0.00026)	-0.0017*** (0.00057)	0.0012*** (0.00037)	0.0074*** (0.00079)
Port $\times$ Slave Voyages ( $\beta_2$ )	0.00071*** (0.00023)	0.00075 (0.00049)	0.000059 (0.00033)	0.00044 (0.00052)
Borough $\times$ Slave Voyages ( $\beta_3$ )	0.00079*** (0.00014)	0.00084** (0.00038)	0.0000045 (0.00020)	0.00034 (0.00034)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls $\times$ Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21253	21245	21245	21245
Mean of DV	0.14	0.28	0.55	0.28
Avg. within- $i$ SD of DV	0.23	0.32	0.37	0.58
P-Value Joint Test	0	0	0.0060	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. The unit of analysis is the (synthetic) constituency-parliament start-year. The measure of ports excludes London, and the measure of boroughs excludes London and ports. Model 5 includes the following controls each interacted with the trend in slave voyages: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that all three presented coefficients are equal to zero.

opening to new social bases of power, nor a more general circulation of elites through power. Instead, similar forms of representational organization—i.e. the family—continued to dominate even as the economy changed.

## 5 The Glorious Revolution, Trade and Political Representation

As noted before, 17th century in Britain was one of political upheaval as well as economic change. Arguably the most important of these political changes was the 1688 Glorious Revolution—the so-called “birth of representative democracy” (North and Weingast, 1989). The revolution constrained the powers of the monarch vis-a-vis Parliament, giving parliamentary representatives greater control over state spending, as well as borrowing and the repayment of debt (Cox, 2012; Stasavage, 2003). While Parliament was valuable to new economic elites representing those benefiting from expanding trade even before the Glorious Revolution, one of the narratives of the period is that this institutional change was one that advantaged the trading classes and cemented their dominance at the expense of the traditional landed elite (Moore, 1966).

In this section, I evaluate whether this shift in the value of a parliamentary seat conditioned the relationship between the growth of trade and the characteristics of political representatives. The

Table 5: Differential relationship between slave trade voyages and economic interests by institutional arrangement

	% Commercial (All)	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages	0.012*** (0.00060)	-0.010*** (0.00017)	0.015*** (0.00086)	0.0043*** (0.00077)
London $\times$ Slave Voyages $\times$ Post-1688	-0.0043*** (0.00060)	0.0065*** (0.00024)	-0.012*** (0.00092)	-0.0025*** (0.00070)
Port $\times$ Slave Voyages	-0.00047 (0.00056)	0.00019 (0.00025)	0.00071 (0.00082)	0.0019** (0.00081)
Port $\times$ Slave Voyages $\times$ Post-1688	0.0015** (0.00061)	-0.00028 (0.00030)	0.00047 (0.00087)	-0.0015* (0.00079)
Borough $\times$ Slave Voyages	-0.00060** (0.00027)	0.000043 (0.000068)	0.0016*** (0.00046)	0.00068* (0.00037)
Borough $\times$ Slave Voyages $\times$ Post-1688	0.0011*** (0.00026)	-0.000024 (0.000069)	-0.0012*** (0.00045)	-0.00043 (0.00034)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls $\times$ Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206
Mean of DV	0.027	0.0048	0.047	0.044
Avg. within- <i>i</i> SD of DV	0.11	0.044	0.15	0.15
P-Value Joint Test	0	0	0	0.0010

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1 with the addition of an interaction with an indicator for post-1688 (after the Glorious Revolution settlement). The unit of analysis is the (synthetic) constituency-parliament start-year. The dependent variable % Commercial (All) measures all MPs involved in commerce of one form or another, including Merchant Adventurers, Asia traders, and New World traders (as well as other commercial categories). The residual constituency-type category against which all coefficients are compared to is a county constituency (i.e. a rural constituency). London, ports and boroughs are measured mutually exclusively from one another. All ports constituencies were borough types. The controls interacted with the trend in slave voyages are: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that three coefficients interacted with *post-1688* are equal to zero.

introduction of an additional interaction with an indicator for post-1688, assesses the extent to which the new control of political representatives over expenditure differentially accelerated the entry or decline of economic and or social groups.

Table 5 presents the results assessing this institutional heterogeneity in terms of the relationship between expanding trade and commercial representation. The patterns for commercial MPs overall (model 1), suggest that it was *after* institutional change that MPs were able to obtain more representation in boroughs. Before that, boroughs were not selecting commercial men in relation to expanding trade. This is suggestive that there may have indeed been something about the constraints placed on the executive in 1688 that made the value of parliamentary seats increase for commerce more generally.

Finally, Table 6 analyzes whether the relationship between trade and constituency characteristics

Table 6: Differential relationship between slave trade voyages and social backgrounds by institutional arrangement

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London × Slave Voyages	0.0016* (0.00086)	-0.0023 (0.0017)	0.0011 (0.0016)	0.0024* (0.0014)
London × Slave Voyages × Post-1688	0.00032 (0.00083)	0.00062 (0.0017)	-0.000096 (0.0015)	0.00026 (0.0014)
Port × Slave Voyages	0.0015* (0.00083)	0.0012 (0.0019)	-0.0026** (0.0011)	0.0000075 (0.0011)
Port × Slave Voyages × Post-1688	-0.00068 (0.00079)	0.00030 (0.0017)	0.0027** (0.0011)	0.00026 (0.00099)
Borough × Slave Voyages	0.00056 (0.00066)	0.0011 (0.0012)	-0.0039*** (0.00093)	0.00073 (0.00076)
Borough × Slave Voyages × Post-1688	0.00019 (0.00065)	-0.00031 (0.0013)	0.0037*** (0.00089)	-0.00036 (0.00074)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls x Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	22134	22134	22134	22134
Mean of DV	0.14	0.28	0.55	0.096
Avg. within- <i>i</i> SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0.64	0.96	0	0.92

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. The unit of analysis is the (synthetic) constituency-parliament start-year. The measure of ports excludes London, and the measure of boroughs excludes London and ports. Model 5 includes the following controls each interacted with the trend in slave voyages: pre-16th century road density, pre-16th century navigable river density, linear proximity to the ocean, average annual precipitation, soil quality, and the average slope. The P-value is for the test of joint significance under the null hypothesis that the three post-1688 coefficients are equal to zero.

was different before and after the Glorious Revolution settlement. The revolution is sometimes thought of as the birth of truly representative government in Britain, though it was not accompanied by any changes in the franchise or procedures for representative selection. There is little evidence from the Table that the social backgrounds of MPs followed distinct patterns before to after this institutional transformation. The one exception is in the case of new MPs. Model 3 indicates that new MPs were less likely in ports and boroughs as trade grew in the period before 1688, but *more* likely in the period afterwards. This suggests that trade may have interacted with institutions to produce more first time MPs, but this was not accompanied by meaningful differences in dynastic nor aristocratic concentration. In short, the evidence that institutional change resulted in large-scale transformation of the social background of representation is only limited.

## 6 Conclusion

“It may be said that [Britain] underwent a transformation from absolute monarchy and the aristocratic institution of feudalism... into a constitutional monarchy and a semblance at least of democracy through two causes: the weakening of the power of the king and landed aristocracy, and the rise to wealth and power of the great middle class” (Gillispie, 1920, 337-8). In this paper, I’ve documented how this new economic elite rose to political power. Using new data on the universe of MPs who sat in parliament for two hundred years spanning the long 17th century, I find that new sources of economic power found their way into political power, even under distinct institutional arrangements. Political power was open to new economic elites, particularly where trade was transforming the local economies the most.

And yet, this economic transformation of parliament was accompanied by no broader opening of political power to new social groups, nor a transformation in how family dynasties nor aristocracies organized themselves in Parliament. Despite the dramatic ways in which the economy reorganized itself to new overseas commerce, there were limits to how such change “modernized” politics during this era. In many ways, then, the transformation of the political class in Britain was one of incorporation into existing modes rather than radical rupture. Insofar as new groups failed to find their needs met with existing political arrangements, they sought institutional solutions—a Civil War over Crown overreach, a Glorious Revolution to credibly signal parliamentary supremacy, and an era of party polarization to rival the contemporary political scene.

Of course, while there are important dynamics that can be explored when considering the long-historical scale of this paper, there are many questions that remain open and are newly opened by the analysis. The most important, in my estimation, is the behavior of elites within the institution, and the way in which that behavior might reinforce or potentially undermine the embodied representation of their particular interests. Economic change and institutional transformation can be reflected, not only, in the ways observable indicators or different *de facto* power are translated into the political realm, but also how those elites behave within the institution.

In addition, the first-order question of whether and how much economic change results in the entry of political elites leads to the second-order question of why existing elites are willing to incorporate these new economic groups into the political realm when their interests are divergent and political power is valuable. There’s no shortage of possible explanations, but the unified theory that gives us clear predictions about when institutions are open to new groups is still missing.

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# Online Appendix to “Political Representation in the Era of Britain’s Expanding Overseas Trade”

Appendix is for online publication only.

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## A Example MP Biography (History of Parliament Project)

ALDERSEY, William (by 1513-77), of Chester, Cheshire.<sup>1</sup>

Constituency	Dates
Chester	1547
Chester	Apr. 1554
Chester	1555

### Family and Education

b. by 1513, 1st s. of Philip Aldersey of Chester. m. Margaret, da. of John Barnes of Crawshaw, Lancs., 3s. 4da.

### Offices Held

Sheriff, Chester 1536-7, alderman by 1555, auditor in 1560-1, 1568, 1575, mayor 1560-1; commr. fee-farm 1550, relief 1550; master of the merchant adventurers 30 May 1554.

### Biography

The Aldersey family, in its various branches, was a leading one at and near Chester. William Aldersey, son of a younger brother in the line established at Middle Aldersey, some seven miles south-east of Chester, was a merchant who traded in a variety of products: in 1534 and 1540 he is found importing general goods, in 1542-3 iron, and afterwards wine. As one of the two sheriffs of the city in 1536-7 he was involved in a dispute over the city's recordership. In 1536 Ellen Wrine, mother of Ralph Wrine, to whom the office had been granted in the previous year, complained to Cromwell of her husband's maltreatment by the mayor and sheriffs, who were seeking to deprive her son of the recordership, which he owed to Cromwell; in her view they were doing so because her husband had informed Cromwell about William Aldersey the sheriff, who had robbed a ship at sea the year before, but what the truth of the matter was, and how it ended, does not appear. Three years later Aldersey and other Chester men were pardoned for having exported leather without paying the customs duties imposed in 1536; their plea of ignorance of the Act concerned (27 Hen. VIII, c.14) may have implied a protest at the non-representation of the city. In 1546 the Privy Council was ordered to pay £30 to William Aldersey, who was in turn to pay William Goodman, alderman of Chester, for the money he had had to lay out in expenses for the bishop of Caithness. In 1553 Aldersey appears as a tenant of the former Carmelite friary in Chester.

Aldersey and his fellow-Member in the Parliament of 1547, Richard Sneyd, are the first two representatives of Chester whose names have been preserved. Following its enfranchisement in 1543 the city had doubtless returned Members to the Parliament of 1545—or even perhaps to the third session (1544) of the previous one—and from the outset it probably adopted the practice, which was

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<sup>1</sup><http://www.historyofparliamentonline.org/volume/1509-1558/member/aldersey-william-1513-77>

to become de rigueur, of electing its recorder and a leading citizen. Thus each time he was returned Aldersey had the recorder as his senior colleague: in 1547 and April 1554 it was Sneyd, in 1555 William Gerard II. The Parliament of 1547 must have taught him that a seat in the Commons was no sinecure: its first three sessions saw five bills introduced relating to Chester, and although their mainly legal character suggests that the brunt of the work fell on the recorder, he must have looked to Aldersey for support when, for instance, it was ‘the great bill of Chester for divers liberties’ which was at stake.

The veil which shrouds Aldersey’s part in this activity is momentarily lifted when it comes to his remuneration. Whether the city had previously considered the matter of payment is not known but Aldersey proceeded to raise it. As he explained in the petition which he afterwards put into Chancery, having served throughout the ‘several and sundry sessions’ of the Parliament—there were four—until its dissolution he sued out his writ de expensis and presented it to the sheriffs. Although these officials replied by levying ‘a great huge mon[ey]’ with the aid of fiscal methods used in the city ‘long afore the conquest ... by William duke of Normandy’, they then kept it for ‘themselves for their own proper use’ and ignored Aldersey’s repeated demands for payment. When he failed to get satisfaction in the mayor’s court, the mayor being ‘uncle in law’ to one of the sheriffs, Aldersey took his grievance to Chancery. The fact that he addressed his bill to Thomas Goodrich, bishop of Ely, shows that he did so before August 1553, but with what result is unknown. The tone of the petition notwithstanding, the suit may have been a collusive one to secure a ruling on what was for Chester a novel demand: unfortunately there appears to be no evidence as to whether Aldersey himself, or any other Member for the city, was paid.

It was during Aldersey’s Membership of Mary’s second Parliament that he procured the grant of a charter incorporating the merchant adventurers of Chester. This followed the presentation of a memorial by Aldersey, Richard Poole and Robert Massey complaining of the numbers of artificers and manual workers in the city who engaged in foreign trade, often in secret and without payment of customs. The charter of May 1554 therefore made a seven-year apprenticeship obligatory on all who intended to trade as overseas merchants; Aldersey’s leadership of the campaign was acknowledged by his being named the company’s first master. Similar movements were taking place at the time in London and other ports, and the Chester company encountered the same kind of opposition as did its counterparts from those whom they excluded. Its claim to promote the yield of customs must have rung hollow when in October 1554 Aldersey and other members were fined £100 for having paid no customs on consignments of leather, calfskins and wheat, and within a month its critics were writing to the city’s Members in the Parliament then in session about the pernicious consequences of the charter. Whatever their damage to his reputation, these developments did not prevent Aldersey’s election to the next Parliament: of his part in it there is only the negative evidence that he was not among the Members who followed the lead of Sir Anthony Kingston in opposing one of the government’s bills, an attitude which may accord with his later view of the Anglican settlement.

At the accession of Elizabeth, Aldersey purchased a general pardon, being described on it as a merchant, alderman and ironmonger. He was mayor during 1560-1, when one of his achievements was, apparently, his compilation of a complete list of former mayors of the city. His mayoralty also made him a justice of the peace there for life, and it was in this capacity that he was reported upon in 1564 by the archbishop of York, who adjudged him not favourable to the established religion. On 28 Jan. 1568 the new mayor, Richard Dutton, whose precursor and forbear Fulk Dutton had been one of Aldersey’s opponents over the merchant adventurers company, disfranchised Aldersey, depriving him of his rank as alderman and his position as a justice: one of the city’s serjeants-at-mace was even sent



to close his shop. Because he had no legal remedy within the city Aldersey decided to appeal to the Earl of Leicester as its chamberlain: whether this move secured his speedy readmission is unknown, but he was eventually reinstated. Five years later, when Richard Dutton was mayor again, Aldersey suffered a second disfranchisement, with William Glasier, vice-chamberlain of the Chester exchequer; the mayor and his confederates took the view, which Glasier and Aldersey opposed, that the city was exempt from the exchequer court. This time the Privy Council intervened, ordering the restoration to office of both men.

No will or inquisition appears to survive, but Fuller says that Aldersey died on 12 Oct. 1577 and was buried in the chancel of St. Oswald's church, Chester. If this is correct he cannot have been the William Aldersey, linen draper of Chester, who was a recusant, as were his wife Margaret and daughter Jane, and who was still alive in 1588; but a reference in a list of recusants of 1577 to a man of the same name and trade who 'lieth [a]bed rotten, as it is said' could be to the dying alderman.

## B Data Sources, Measurement and Summary Statistics

This Appendix describes in more detail the data sources used in the paper, along with measurement strategies, and finally, summary statistics.

### MP Characteristics

First, Table B1 describes the sources of the data on MPs. Some sources contain only information on the names of MPs. This information can be used to connect political dynasties only. Other sources contain biographical information on MPs in varying degrees of detail. The History of Parliament Project biographies are by far the most detailed. While other biographies, such as those from Keeler, are less detailed. All the sources contain information on the constituencies that MPs served for, thus allowing MPs to be connected to particular geographies.

Table B1: Data Sources for Members of Parliament

Period	Name	Bio	Source
1558-1639	✓	✓	The History of Parliament Project (2013)
1640 Short Parliament	✓		Salmon (2015)
1640 Long Parliament	✓	✓	Salmon (2015), Keeler (1954), Brunton and Pennington (1954)
1654-58 Protectorate	✓		Salmon (2015)
1660-1752	✓	✓	The History of Parliament Project (2013)

In order to code political dynasties, name data is the only requirement. To measure economic interests and social backgrounds, the biographical data is needed. I choose not to use the Keeler biographical information to measure economic interests because the information contained in them is significantly less rich than the other sources. Cross-validation between the sources suggested that the Keeler biographies were more circumscribed in their sources, and less comprehensive in the types of interests included.

### Control Variables

Table B2 indicates the measurement and data sources for the time non-varying control variables (interacted with relevant time trends) used in the analysis. All variables cover both England (E) and Wales (W).

Figure B1 presents medieval transportation networks that existed prior to the period that this paper studies. These transportation networks include navigable rivers and major roads.

Table B2: Data sources and measurement for time non-varying political and geographic variables

Variable	Measurement	Source	Coverage
Road Density	Average density of major roads that were navigable in the medieval period (prior to the study period), calculation in ArcMap using Line Density tool, and Zonal Statistics as Table	Geo-referenced map (Cantor, 1982)	EW
River Density	Average density of rivers that were navigable in the medieval period (prior to the study period), calculation in ArcMap using Line Density tool, and Zonal Statistics as Table	Geo-referenced map (Edwards, 1987)	EW
Soil Yield	Average annual yield for rain-fed wheat, kg	Raster map “Agro-climactically attainable yield index for low-input level rain-fed wheat for baseline period 1961-1990” (Food and Agricultural Organization, 2014), <a href="http://gaez.fao.org/Main.html">http://gaez.fao.org/Main.html</a>	EW
Precipitation	Average annual precipitation, mm, calculation in ArcMap using Zonal Statistics as Table tool	Raster map “Annual precipitation (for baseline period 1961-1990)” (Food and Agricultural Organization, 2014), <a href="http://gaez.fao.org/Main.html">http://gaez.fao.org/Main.html</a>	EW
Ocean	Proximity measured as $\ln(\frac{1}{distance+1} * 5000)$ , km, where <i>distance</i> in the denominator is measured from the closest constituency border	—	EW
Slope	Average gradient, mm	Raster map “SRTM_NE_250m.tif” (Jarvis et al., 2008) <a href="http://www.cgiar-csi.org/data/srtm-90m-digital-elevation-database-v4-1">http://www.cgiar-csi.org/data/srtm-90m-digital-elevation-database-v4-1</a>	EW

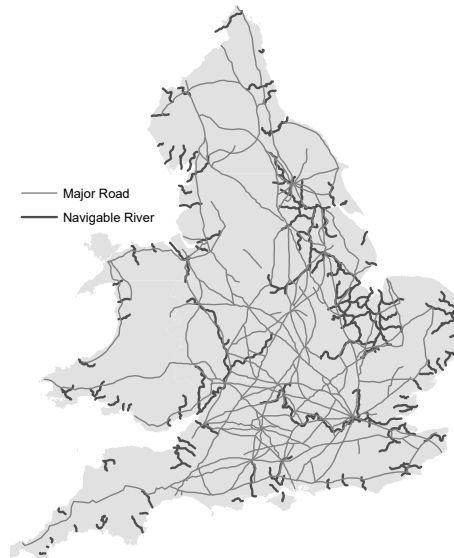
*Notes:* The above table presents variable, measurement and source information for the time non-varying geographic and political features. The unit of analysis for measurement is the (synthetic) constituency unit.

## Boroughs and Ports

The source for political and economic characteristics of constituencies come from a number of different sources. Constituencies are coded as boroughs based on the descriptions in The History of Parliament Project (2013). Constituencies that are not boroughs are counties. The exception are the university constituencies (Oxford and Cambridge) that are included as boroughs (based on a conceptual distinction between “urban” boroughs and “rural” counties). Cinque ports were all also boroughs in the sense of being “urban.” However, since my coding ultimately distinguishes between boroughs that are ports and boroughs that are not ports, classifying cinque ports first as boroughs isn’t really necessary since they are ultimately classified as ports.

In the paper’s analysis, boroughs that were also ports are coded distinctly since they were more likely to have direct involvement in expanding trade. (London is also considered separately from the “outports.”) This suggests that they might have experienced different political trends. Con-

Figure B1: Location of transportation networks in late medieval Britain



*Sources:* See Appendix B for more information on the data source.

*Notes:* The map presents medieval transportation networks in Britain: rivers that were navigable in the medieval period, and the medieval road network.

ceptually, I consider ports to be “an urban center with a haven or harbour, located on the coast, or a river with close coast access, whose economic activities depend to a significant degree on its direct waterborne access to the sea” Sacks and Lynch (2000). I focus on boroughs that met this definition of a port in the pre-1600 period. I focus on the pre-1600 period because this helps to limit (though not fully alleviate) endogeneity—the concern that something not captured by fixed effects or other control variables might affect political change and, in turn, the constituency *becoming* a port. The choice of 1600 reflects the fact that the Atlantic economy had not yet taken off by that date (though the first slave ship had sailed), but allows me to include 16th century ports from the sources.

To code (out)ports, I begin with the Lambert and Baker (2019) database and keep any of their listed ports within 10km of the ocean that had at least 50 voyages recorded (Table B3). The Lambert and Baker (2019) database documents English and Welsh (and Channel Island) merchant ships and their voyages, between 1400 and 1580. The source of the voyages come from: customs accounts, naval payrolls and ship surveys. The database is not comprehensive, in part due access and survivorship of records. For this reason, I use the modest threshold of 50+ voyages to avoid discounting ports that were more significant than the surviving records on voyages indicates. The data is sufficiently noisy, that I do not trust using it to measure the intensity of medieval trade, only the extensive margin of significant trade or not. I also supplement with other historiographical sources that use alternative evidence and measures to determine important ports.

The 10km distance threshold that I use ensures that I don’t code inland towns on navigable rivers that could participate in river trade but *not* overseas trade (which required bigger ships and deeper harbor depths). The Lambert data includes many riverine ports. The coding is not sensitive to

this distance measure as almost any town with 50+ voyages was either well inland or very clearly on the ocean.

To supplement Lambert and Baker (2019), I also rely on Sacks and Lynch (2000). I use in-text mentions (as well as mentions in Tables) of important medieval ports from the pre-1600 period. These include the list of Tudor “headports” which contained the customs house from which taxation of that and other “member” ports was conducted. If Sacks mentions the port as important (or if it was a headport), I include it in the list of ports, regardless of the voyages recorded by Lambert. I also use a geocoded maps from Edwards (1987) and from Daniell (2008).<sup>2</sup> If both of those sources indicate the importance of a port, I include it regardless of the voyages recorded by Lambert. There are only a few such supplements, suggesting that in terms of the rather blunt notion of *significant medieval ports*, the Lambert voyage database does well.

Crucially, I keep only those ports from these sources that were contained within borough constituencies. As noted in the main text of the paper, the economic impact of one or two major ports in a county was likely to be limited. This measurement strategy is aided by the fact that nearly all of the major ports were boroughs.

Many studies of ports try to allay endogeneity concerns by using so-called “natural harbors” to measure places with the geographic prerequisites for (Haber, 2012; Jha, 2008; Gaikwad, 2014; Gerring et al., 2018). This strategy uses purely geographic features—e.g. sea depth, coastline shape—to infer where harbors could have existed, independent of man-made features that might confound inferences on the effect of those harbors. The challenge in using this strategy in the case of Britain, twofold. First, the British coastline is extremely well-endowed for harbors, particularly in terms of its shape. The consequence is that nearly everything on the coastline is coded as a harbor with any of the existing algorithms or hand-coding strategies that exist.

In addition, accurate depth measures, which would indicate the suitability of a harbor for the large draw ships necessary for long-distance trade are difficult to find for the 16th and 17th centuries. The silting of rivers over the time frame further renders the task difficult since a harbor that was suitable in the early 16th century, may have silted by the end of the century.<sup>3</sup> Silting is also a problem for a measure of ports rather than harbors. But it is at least possible to measure ports. In the context that Jha (2008) studies which is also historical and which also contends with silting, he is able to use inland lakes to understand where harbors had been (prior to geographic changes). The geography of Britain did not provide any comparable *purely geographic* indicators of where harbors may have previously been.

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<sup>2</sup>The Edwards and Daniell sources differ often in which ports they include. It’s hard to know the reason for this. But the time period considered and sources employed are different between the sources.

<sup>3</sup>As an example, Norwich was an important center of Anglian industry. And while it was a port in the 15th century, by 1550, the river Yare had become impassible. As a consequence, ocean-going trade moved to Yarmouth. York was another example of a commercial center that had river access, but depended on another town—Hull—for

Table B3: List of (Out)Ports and Their Sources

Port Name	Constituency Name	Sources			
		L	E	D	S&L
Aldeburgh	Aldeburgh	✓			
Anglesey	Beaumaris	✓	✓	✓	
Barnstaple	Barnstaple	✓			✓
Beaumaris	Beaumaris	✓	✓	✓	
Berwick-Upon-Tweed	Berwick-Upon-Tweed	✓	✓		✓
Boston	Boston	✓	✓	✓	✓
Bridgwater	Bridgwater	✓		✓	✓
Bristol	Bristol	✓		✓	✓
Cardiff	Cardiff Boroughs	✓	✓		✓
Carlisle	Carlisle				✓
Charmouth	Lyme Regis	✓	✓		
Chester	Chester	✓		✓	✓
Chichester	Chichester	✓	✓	✓	✓
Colchester	Colchester	✓	✓		
Dartmouth	Dartmouth	✓	✓	✓	
Dover	Dover	✓	✓	✓	
Dunwich	Dunwich	✓	✓		
Exeter	Exeter	✓	✓	✓	
Falmouth	Penryn and Falmouth	✓	✓	✓	
Fowey	Fowey	✓	✓	✓	
Gloucester	Gloucester	✓			✓
Grimsby	Great Grimsby	✓	✓	✓	
Great Yarmouth	Great Yarmouth	✓			✓
Harwich	Harwich	✓	✓	✓	
Hastings	Hastings	✓	✓		
Hull	Kingston-Upon-Hull	✓		✓	✓
Hythe	Hythe	✓	✓	✓	
Ipswich	Ipswich	✓	✓	✓	✓
Kings Lynn	Kings Lynn	✓		✓	✓
Kingswear	Dartmouth	✓	✓	✓	
Lincoln	Lincoln	✓		✓	
Liverpool	Liverpool	✓	✓	✓	
Lyme Regis	Lyme Regis	✓	✓		
Maidstone	Maidstone	✓		✓	
Maldon	Maldon	✓	✓		
Minehead	Minehead	✓	✓		
Milford Haven	Pembroke Boroughs	✓		✓	✓
Newcastle	Newcastle-Upon-Tyne	✓		✓	✓
Newhaven	Seaford	✓	✓	✓	✓
Newport IOW	Newport IOW	✓			
Plymouth	Plymouth	✓	✓	✓	✓
Polruan	Fowey	✓			
Poole	Poole	✓	✓		✓
Portsmouth	Portsmouth	✓	✓		
Rochester	Rochester	✓		✓	
Romney	New Romney	✓	✓	✓	
Rye	Rye	✓	✓	✓	
Saltash	Saltash	✓			
Sandwich	Sandwich	✓	✓	✓	✓
Scarborough	Scarborough	✓	✓	✓	

Notes: See the notes for Table B4.

Table B4: List of (Out)Ports and Their Sources (Continued)

Port Name(s)	Constituency Name	Sources			
		L	E	D	S&L
Shoreham-by-the-Sea	New Shoreham	✓	✓		
Southampton	Southampton	✓	✓	✓	✓
St. Ives	St. Ives				
Stonehouse	Plymouth	✓	✓	✓	
Tenby	Pembroke Boroughs	✓		✓	
Topsham	Exeter	✓	✓	✓	
Truro	Truro		✓		
West Looe	West Looe	✓	✓		
Weymouth	Weymouth & Melcombe Regis	✓	✓	✓	
Melcombe Regis	Weymouth & Melcombe Regis	✓	✓	✓	
Winchelsea	Winchelsea	✓	✓	✓	
Wivenhoe	Colchester	✓	✓		
York	City of York	✓		✓	

*Notes:* The above are the list of medieval (pre-1600) outports considered in the paper's empirical analysis. London is obviously a port, but is considered separately in all analysis. The sources are: L (Lambert), E (Edwards), D (Daniell), S&L (Sacks and Lynch). See the text for more information. Papers with a checkmark for Lambert are those with 50+ voyages recorded in the authors' database over their entire period of study. Those with checkmarks for Edwards and Daniell are those ports geocoded from those sources' maps. Those from Sacks and Lynch are pre-1600 customs headports, or those listed as major or significant medieval ports in their text. Multiple ports may be contained within a given constituency (e.g. the constituency of Fowey).

## Summary Statistics

Table B5 provides summary statistics for the main variables considered in the paper.

Table B5: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	Obsv.
% Commercial MPs	0.148	0.269	0.000	1.000	22182
% Dynastic MPs	0.306	0.280	0.000	1.000	22182
% Aristocratic MPs	0.281	0.342	0.000	1.000	22182
% New (First time) MPs	0.380	0.366	0.000	1.000	22182
Road density	0.096	0.107	0.000	0.601	22182
River density	0.048	0.063	0.000	0.305	22182
Ocean proximity	0.817	4.498	-3.170	8.517	22182
Soil quality	2139.186	257.410	1162.053	2486.000	22182
Slope average	2.241	1.540	0.148	8.936	22182

*Notes:* The above table presents summary statistics for the constituency data presented in the paper. All variables are measured for 1553-1750 parliaments excluding the Commonwealth and Protectorate parliaments. The unit of analysis for all is the (synthetic) constituency unit. See Table B2 for information on measurement.

## C Coding the Economic Interests of MPs

One of the contributions of this paper is a new dataset that traces the economic interests of Members of Parliament from across the period of study. This dataset is derived from narrative text biographies originally published in printed volumes published by the The History of Parliament Project (HPP). The specific volumes include *The House of Commons 1509-1558*, *The House of Commons 1558-1603*, *The House of Commons 1604-1629*, *The House of Commons 1660-1690*, *The House of Commons 1690-1715*, and *The House of Commons, 1715-1754*. I accessed these biographies from their online publications, web-scraped them, and compiled them into a new dataset The History of Parliament Project (2013). An example biography is provided in Appendix ??.

The primary component of an individual MP's online biography is a narrative text describing characteristics of the MP, characteristics of his family, his social and political relationships, and various activities that he engaged in during his life, primarily political, but in other areas as well.<sup>4</sup> These texts frequently describe the economic activities in which the MP was engaged. The length and detail of the biographies varies significantly, and not all biographies mention MPs' economic activities.<sup>5</sup> The biographies sometimes mention investments; however, conversations with scholars at the HPP indicated that investments were not a systematic focus of biographers.

In order to code the economic activities of MPs based on these biographies, I developed a natural language processing (NLP) routine. I use this generalized routine because it was not feasible with the time and resources available to read and code all of the biographies by hand. I chose this particular type of routine (an iterated dictionary classification) rather than a more complex machine learning algorithm because of a sparse-matrix problem.<sup>6</sup>

The seven steps of this routine are outlined briefly below, and then described subsequently in more detail.

The routine

1. Identifies key terms (primarily individual words, but also some  $n$ -grams) by hand-coding economic interests from a sub-sample (training sample) of biographies;
2. Identifies exclusionary terms ( $n$ -grams) from the same training sample of biographies;
3. Restricts the sample of biographical content to the first paragraph of multi-paragraph biographies;
4. Counts non-excluded key terms by interest category (there is a one-to-one mapping between

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<sup>4</sup>There were no female MPs during the period of study.

<sup>5</sup>Of further note, the biographies were written in stages, and published in printed volumes beginning in the 1970s (later compiled in digital format and posted online). In the regression specifications, parliament start-year fixed effects also address concerns that common year shocks, namely biography publication dates and what they imply about historical resources available to the biographers, are not driving the results.

<sup>6</sup>In short, biographies typically contain only one or two words that indicate an MP's interest. As a percentage of all words in the biography, this is negligible. The consequence is that complex algorithms lack sufficient data to use to classify.



- key term and interest category) in the remaining (non-training) sample of biographies;
5. Assign MPs to an interest category designed to capture whether MPs were *at all* involved in a given economic activity;
  6. Validates the above machine coding by hand coding and checking the agreement on a new sub-sample (validation sample) of biographies;
  7. Iterates steps 1-6 multiple times on newly drawn sub-samples of biographies to improve the key term and exclusionary term dictionary and improve the agreement between the machine coding and hand coding.

Finally, I supplement this automated routine by using any available information from the Appendices of the History of Parliament Project biographies to assign MPs to economic interests when the Appendices contain this information. Some volumes will list the names of MPs involved in particular interests or activities. I now describe each of these above steps in more detail.

### **Step 1: Key term dictionary**

The population of biographies includes 11200 biographies spanning the 1553-1750 period.<sup>7</sup> There are more biographies than individual MPs who served because MPs who served across more than one separate period that the HPP researched typically received separate biographies.

I constructed a randomly drawn first training sample of 225 biographies. This training sample represents 2% of the biographies. I read the biographies in the training sample, hand-coded the economic interest(s) of the MP (i.e. my subjective interpretation of their interests), and identified key terms (words and  $n$ -grams; that is, words and strings of words) that I considered indicative of that economic activity. I compiled these key terms into a dictionary that relates key terms to interest categories in a one-to-one mapping (i.e. each key term is associated with only one interest category).<sup>8</sup>

The economic interest categories that I use are the following:

#### **Interest categories**

1. Commercial
  - (a) Local
  - (b) Merchant Adventurers
  - (c) Asia and Middle East (Levant)
  - (d) New World (Americas and Caribbean, incl. slave traders)
  - (e) Bankers and financiers
  - (f) All other (misc.)
2. Industrial

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<sup>7</sup>Coverage of MPs is not universal for the 1509-1552 period.

<sup>8</sup>Some interest categories were further broken down into finer grained interest categories. For instance, commercial MPs could also be coded as New World merchants, Asia merchants, and so forth.

- (a) Textiles
  - (b) Mining
  - (c) All other (misc.)
3. Military
  4. Professional
  5. Lawyer
  6. Civil Service and Courtiers
  7. Farmer

Notably, I do *not* code MPs as landed. The prevalence of land ownership was so pronounced during this period that most MPs were not described explicitly in their biographies as landowners. Using other sources, I ascertained that many MPs whose biographies made no explicit mention of land ownership were in fact land owners. Example terms and the interest categories that they correspond to are presented in Table B6.

Broadly speaking, the commercial interest captures individuals involved in local and international commerce—both local shopkeepers and tradesmen, as well as those who owned ships or engaged in long-distance or overseas trade. The industrial interest attempts to capture individuals involved in production—textile manufacturing, metallurgy, glassmaking.

The military interest captures those individuals whose primary career activities involved service in the armed forces. The professional category includes individuals who practiced another skilled profession, primarily in the medical fields, though a small handful of architects, writers, and historians were also present. Many MPs had some involvement with the legal institutions of the day (Grey’s Inn, Middle Temple, etc.), many others spent their entire careers studying and practicing law. The lawyer category captures both types of individuals. The civil service category captures those individuals who primarily spent their careers in (national) government that was not representative service. The government during this period was quite small, thus, many MPs in this category served the royal family in some capacity as courtiers. Finally, a very few farmers and yeoman who rose to become MPs are captured in the farmer category.

Table B6: Interest categories and example dictionary key term correspondence

Commercial	Industrial	Military	Professional	Lawyer
merchant, privateer, shipping, grocer, brewer, financier	glassworks, draper, furnace, tin, mill, wool	naval, army, major_general, regiment, officer, captain	poet, pathologist, architect, doctor	middle_temple, grays_inn, barrister, lawyer, solicitor, the_bar

*Notes:* Capitalization, plural, gerunds, and other grammatical variations are included for each key term used in the analysis. Only one variant is presented above. For example, the key term *mill* in the category *industrial* includes variations such as *mills*, *Mill*, and *Mills*. I exclude farmer from the table for the sake of space and since there are so few individuals coded in this category.

A one-to-one mapping between key terms and interests means that for some terms there is some ambiguity about which interest the term better maps onto. For instance, “merciers” were traders

in textiles, but the term was also sometimes used to refer to those who manufactured textiles. By and large the difficult codes are between industry and commerce. Thus in an appendix I also present results that include textiles and mining interests. For other interests, it was not so challenging to map the key terms to the interest.

## **Step 2: Exclusionary term dictionary**

There are many terms (mostly  $n$ -grams and longer phrases) that are irrelevant to an MP's economic activity but which would be captured by the key term dictionary were it not for the creation of an exclusion dictionary. As an example, a mention of the East India Company could refer to an MP who was a trader or stock owner in the company. But it could also refer to a non-involved MP's position on a bill related to the company, or the activities of a friend or fellow MP who was involved in the company, and so on. While interesting, such references do not indicate the economic activity of the MP.

The exclusion dictionary captures phrases that include dictionary key terms, but which do not indicate an MP's economic activity. I remove these phrases from consideration when coding the MP's activity.

## **Step 3: Restriction of biography text**

The narrative text biographies of the HPP vary in length, but tend to follow similar organizational patterns that aid in locating the parts of the text most likely to refer to the MP's economic interest. For example, many biographies contain short references to the economic activities of MPs' family members, particularly their father. Fathers and sons often engaged in highly correlated activities, but this was not exclusively the case. The economic activities of relatives are most likely to be mentioned in the first sentence of an MP's biography. Therefore, I exclude the first sentence of the biography if it references the MP's family.<sup>9</sup>

I also restrict the interest coding to the first paragraph of multi-paragraph biographies. Economic interest information is rarely conveyed in later paragraphs. These later paragraphs instead usually document votes, legislative speeches, or other activity in Parliament where key terms are more likely to occur in contexts that should be in the exclusion dictionary.

## **Step 4: Word counts**

I count the non-excluded dictionary key terms for each interest category in each biography. Note that although there is a one-to-one mapping between key terms and interest categories, I count

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<sup>9</sup>I only retain the first sentence if it refers to the MP's family if there is also reference to "inheritance," as this often indicates that the MP carried on in similar activity to the relative.

key terms for MPs for all interest categories. Thus, MPs, by the word count, can be part of multiple interest categories. I allow at most five instances of a given key term in the sample of the biography that remains after step 3.<sup>10</sup> On average there are 11200.00 key terms identified for a given biography.<sup>11</sup> Therefore, on average, MPs are only coded as having one interest.

### **Step 5: Assign MPs to primary interest category**

I assign MPs to an economic interest category if one or more key words indicate their involvement. MPs can be involved in multiple activities.<sup>12</sup>

### **Step 6: Validate the coding**

I validate the coding by randomly drawing a validation sample from the the non-training sample, hand-coding the interests, and then noting the number of discrepancies between my hand-coding of the interest and the coding of the NLP routine. The source of errors in the validation was usually exclusionary terms that were not present in the training data rather than key terms that I had not previously included in the key term dictionary.

### **.1 Step 7: Iterate the process**

In implementing this routine, I noticed low accuracy in the first validation round. This was largely a function of exclusionary terms that were not picked up in the first hand-coding of key terms and exclusionary terms. To account for this, I iterated the routine multiple times by drawing new samples of training biographies to code (although fewer than the initial sample each time), adding to the key term and exclusionary term dictionaries, re-coding the interests, and re-validating on a new random sample.

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<sup>10</sup>There are never more than five instances of a given key term after the exclusion dictionary has been applied.

<sup>11</sup>The standard deviation is perpe, the minimum is and the maximum is.

<sup>12</sup>I do not use the frequency of word counts to infer the primary interest an MP was involved in for a number of reasons. First, I consider the word count frequency to be a very noisy signal of the primary activity of the MP. In email conversations with HPP editors, I learned about how biographies were written and what information was included and excluded. There was no indication made in these conversations that biographers were instructed to make clear which of multiple economic interests an MP was involved in. The economic interest information was not in fact a priority for biographers at all. (Activity in parliament was the primary goal.) Therefore, whether one activity was written about more than another may simply reflect the idiosyncratic interests of the biographer. Moreover, the word counts for different activities may reflect the availability of information about particular activities which may be more or less likely to survive for reasons unrelated to how involved the MP was in the activity. It's also not clear how to think about the primary activity of the MP. Is it time spent in the activity? Resources derived? The biographies are not sufficiently detailed to give clues here. Finally, as noted previously, I consider the concept of greatest substantive interest to be whether an MP was at all involved in a particular expanding activity.

## Using additional information for coding MPs

In addition to the NLP routine, I use an alternative source of information from the History of Parliament Project to hard code the interests of a select set of MPs. The HPP volumes contain what they refer to as a “survey” that provides some limited descriptive statistics about the information contained in that volume’s biographies.<sup>13</sup> For some years this information describes the counts of MPs engaged in banking, commerce, and industry and sometimes explicitly mentions the names of MPs engaged in each activity. I use this survey information to directly assign MPs to a given economic interest regardless of the word counts under the assumption that the survey information is more accurate than the NLP routine.

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<sup>13</sup>The contents of these surveys varies substantially from volume to volume.

## D Results by Borough Type

This appendix presents results where the borough coding is disaggregated into boroughs with more open as opposed to more closed franchise requirements.

Table D1: Differential relationship between slave trade voyages and economic interests accounting for types of borough franchise

	% Commercial (All)	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages	0.0038*** (0.00046)	-0.0039*** (0.00013)	0.0028*** (0.00031)	0.0018*** (0.00024)
Port $\times$ Slave Voyages	0.00094** (0.00044)	-0.000098 (0.00011)	0.0012*** (0.00028)	0.00034 (0.00021)
Burgage borough $\times$ Slave Voyages	0.00074** (0.00036)	0.0000021 (0.000024)	0.00034 (0.00027)	0.00039** (0.00019)
Non-burgage borough $\times$ Slave Voyages	0.00071** (0.00029)	0.000024 (0.000028)	0.00042** (0.00019)	0.00022* (0.00013)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls $\times$ Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206
Mean of DV	0.16	0.0048	0.047	0.044
Avg. within- <i>i</i> SD of DV	0.26	0.044	0.15	0.15
P-Value Joint Test	0	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

Table D2: Differential relationship between slave trade voyages and social backgrounds accounting for types of borough franchise

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages	0.0019*** (0.00026)	-0.0014** (0.00058)	0.0015*** (0.00036)	0.0024*** (0.00034)
Port $\times$ Slave Voyages	0.00087*** (0.00019)	0.0017*** (0.00055)	0.00024 (0.00030)	0.00018 (0.00034)
Burgage borough $\times$ Slave Voyages	0.00077*** (0.00017)	0.00090* (0.00054)	-0.00055* (0.00029)	0.00018 (0.00041)
Non-burgage borough $\times$ Slave Voyages	0.00074*** (0.00016)	0.00091** (0.00045)	0.000013 (0.00023)	0.00037* (0.00020)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls $\times$ Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206
Mean of DV	0.14	0.29	0.54	0.10
Avg. within- <i>i</i> SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

Table D3: Differential relationship between trade and MPs invested in overseas joint stock companies accounting for types of borough franchise

	% Joint Stock Owners
	(1)
London $\times$ EIC Voyages	0.052*** (0.0034)
Port $\times$ EIC Voyages	0.015*** (0.0040)
Burgage borough $\times$ EIC Voyages	0.0055*** (0.0021)
Non-burgage borough $\times$ EIC Voyages	0.0043** (0.0021)
Constituency FE	✓
Parliament FE	✓
Controls $\times$ Voyages	✓
Obsv. (Constit.-Parl.)	10534
Mean of DV	0.041
Avg. within- <i>i</i> SD of DV	0.14
P-Value Joint Test	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

## E Paper Results with Control Variable Coefficients

In this Appendix, I present the results from the main paper with the addition of the control variable coefficients. I exclude those coefficients from the paper for the sake of space.

Table E1: Relationship between slave trade voyages and economic interests of MPs with control variable coefficients

	% Commercial (All)	% Non-Comm. Capitalist	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)	(5)
London $\times$ Slave Voyages	0.0038*** (0.00046)	-0.0011*** (0.00023)	-0.0039*** (0.00013)	0.0028*** (0.00031)	0.0018*** (0.00024)
Port $\times$ Slave Voyages	0.00094** (0.00044)	-0.00034 (0.00022)	-0.000098 (0.00011)	0.0012*** (0.00028)	0.00034 (0.00021)
Borough $\times$ Slave Voyages	0.00072*** (0.00027)	-0.00043*** (0.00013)	0.000020 (0.000024)	0.00041** (0.00017)	0.00025** (0.00012)
Slope $\times$ Slave Voyages	0.000089 (0.000089)	0.0000065 (0.000043)	0.0000076 (0.000018)	-0.0000094 (0.000067)	0.00016*** (0.000049)
Road Density $\times$ Slave Voyages	-0.0036*** (0.0012)	-0.00016 (0.00048)	-0.00030 (0.00039)	-0.00097 (0.00069)	-0.00077 (0.00063)
River Density $\times$ Slave Voyages	-0.0032 (0.0021)	-0.00021 (0.00097)	-0.00036 (0.00027)	-0.00040 (0.0015)	-0.00098 (0.0010)
Ocean Proximity $\times$ Slave Voyages	-0.000026 (0.000030)	-0.000028** (0.000014)	0.0000027 (0.000033)	-0.000033 (0.000020)	0.000016 (0.000014)
Precipitation $\times$ Slave Voyages	-0.0000013* (0.00000068)	-0.00000085 (0.00000053)	0.000000033 (0.00000014)	-0.000000025 (0.00000049)	-0.0000015*** (0.00000041)
Soil Quality $\times$ Slave Voyages	-0.00000011 (0.00000055)	-0.00000064 (0.00000042)	0.000000025 (0.00000013)	0.00000026 (0.00000041)	-0.00000022 (0.00000027)
Constituency FE	✓	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206	21206
Mean of DV	0.16	0.050	0.0048	0.047	0.044
Avg. within- <i>i</i> SD of DV	0.26	0.15	0.044	0.15	0.15
P-Value Joint Test	0	0	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.



Table E2: Differential relationship between slave trade voyages and social backgrounds with control variable coefficients

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages	0.0019*** (0.00025)	-0.0017*** (0.00057)	0.0010*** (0.00036)	0.0027*** (0.00034)
Port $\times$ Slave Voyages	0.00086*** (0.00019)	0.0015*** (0.00054)	0.00016 (0.00029)	0.00027 (0.00034)
Borough $\times$ Slave Voyages	0.00075*** (0.00015)	0.00074* (0.00038)	-0.00015 (0.00020)	0.00036* (0.00019)
Slope $\times$ Slave Voyages	0.000023 (0.000060)	-0.00049*** (0.00013)	0.000022 (0.000079)	0.000083 (0.000072)
Road Density $\times$ Slave Voyages	-0.00032 (0.00064)	0.0018 (0.0015)	-0.0000021 (0.00091)	-0.0012 (0.00086)
River Density $\times$ Slave Voyages	0.00092 (0.0011)	-0.0046 (0.0032)	0.0053*** (0.0014)	0.0013 (0.0015)
Ocean Proximity $\times$ Slave Voyages	-0.000016 (0.000017)	-0.000021 (0.000054)	0.0000044 (0.000024)	-0.000013 (0.000022)
Precipitation $\times$ Slave Voyages	-0.0000021*** (0.00000052)	0.0000050*** (0.0000014)	-0.00000069 (0.00000066)	-0.00000080 (0.00000079)
Soil Quality $\times$ Slave Voyages	-0.00000057 (0.00000035)	0.0000011 (0.0000012)	0.0000011** (0.00000054)	-0.00000033 (0.00000069)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	22134	22134	22134	22134
Mean of DV	0.14	0.28	0.55	0.096
Avg. within- $i$ SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0	0	0.0060	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

Table E3: Differential relationship between trade and MPs invested in overseas joint stock companies with control variable coefficients

	% Joint Stock Owners
	(1)
London $\times$ EIC Voyages	0.052*** (0.0034)
Port $\times$ EIC Voyages	0.015*** (0.0040)
Borough $\times$ EIC Voyages	0.0047** (0.0019)
Slope $\times$ EIC Voyages	0.00099 (0.00070)
Road Density $\times$ EIC Voyages	-0.016* (0.0084)
River Density $\times$ EIC Voyages	0.025* (0.014)
Ocean Proximity $\times$ EIC Voyages	-0.00027 (0.00022)
Precipitation $\times$ EIC Voyages	-0.0000075 (0.0000059)
Soil Quality $\times$ EIC Voyages	-0.0000014 (0.0000048)
Constituency FE	✓
Parliament FE	✓
Obsv. (Constit.-Parl.)	10534
Mean of DV	0.041
Avg. within- <i>i</i> SD of DV	0.14
P-Value Joint Test	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. See the text for more details.

Table E4: Differential relationship between trade and MPs without property in the county with control variable coefficients

	% w/o Property in the County
	(1)
London $\times$ Slave Voyages	0.0055*** (0.00074)
Port $\times$ Slave Voyages	0.0015*** (0.00049)
Borough $\times$ Slave Voyages	0.00060* (0.00032)
Slope $\times$ Slave Voyages	0.00028** (0.00012)
Road Density $\times$ Slave Voyages	0.0042** (0.0020)
River Density $\times$ Slave Voyages	0.0033 (0.0028)
Ocean Proximity $\times$ Slave Voyages	0.0000017 (0.000038)
Precipitation $\times$ Slave Voyages	-0.00000016 (0.00000094)
Soil Quality $\times$ Slave Voyages	0.0000032*** (0.00000087)
Constituency FE	✓
Parliament FE	✓
Obsv. (Constit.-Parl.)	22134
Mean of DV	1.01
Avg. within- $i$ SD of DV	0.44
P-Value Joint Test	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

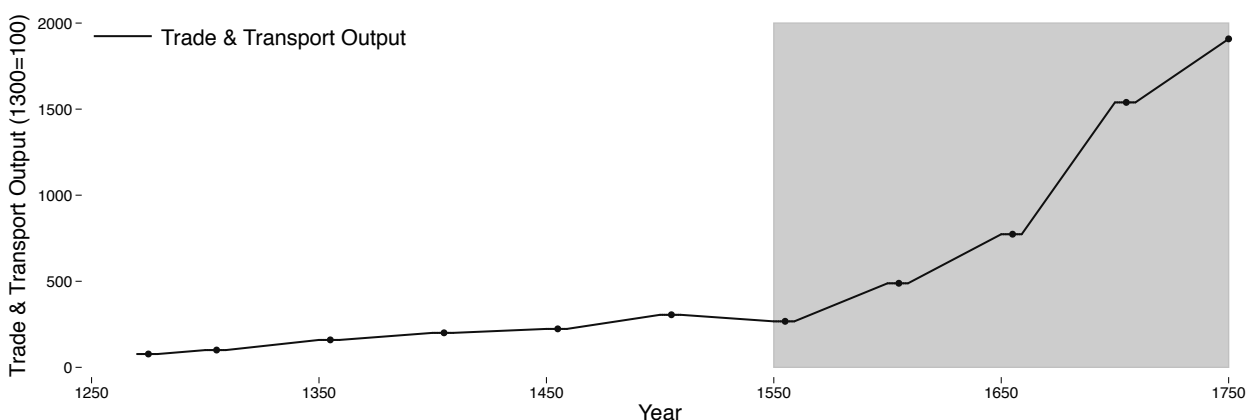
Notes: The above table presents the results from estimating equation 1. See the text for more details.

## F Additional Figures for Trends in Commercial Activity

This appendix presents additional figures that document trends in commercial activity during the 16th, 17th and early 18th centuries.

Figures F1 and F2 present two alternative ways of visualizing the growth in trade during the 16th and 17th century in Britain. The period of study of this paper is shaded in gray for both. Figure F1 presents the trend in the combined contribution of trade and transport to national output in Britain (with the year 1300 normalized to 100). From 1550 onwards, there was substantial growth in the extent to which trade and transportation mattered for national production in Britain. This coincides with the growth of trade to the Americas and to Africa and Asia.

Figure F1: Trends in economic output deriving from trade and transport, 1270-1750



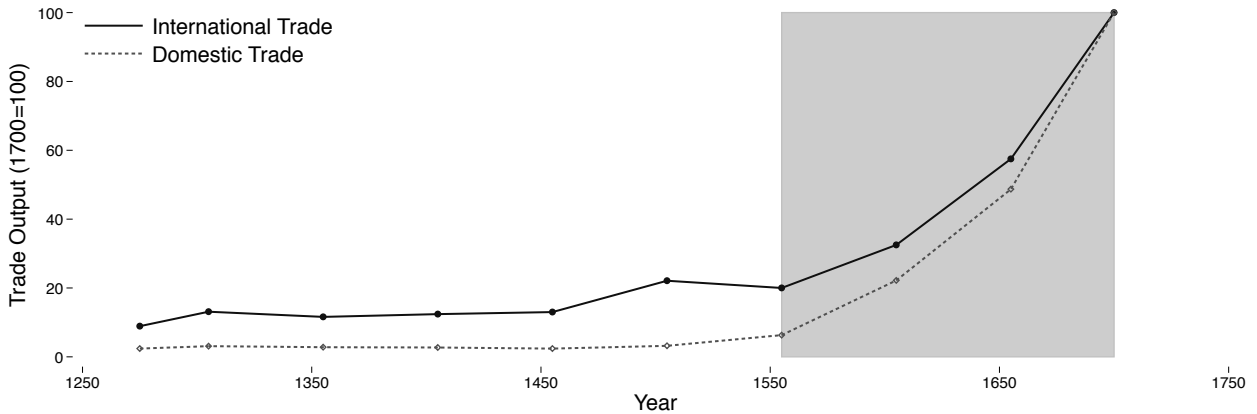
Sources: Broadberry et al. (2015), pg. 181.

Notes: The above plot shows trends in the combined contribution of the trade and transport sectors to national output in Britain. The data is given as averages for specific decades (indicated by the scatter) by Broadberry et al. (2015). The gray shaded period corresponds to the period studied in this paper. Output figures are given relative to the base year 1300 (1300=100).

Figure F2 breaks out the growth into the components of each international and domestic trade. What the series indicate is that both international trade and domestic trade increased. So, as goods increasingly moved between Britain and other nations, so too was there an attendant increase in goods moving within Britain. This reflects the domestic economic effects of expanding trade—the movement of imports through the country, and the movement of exports from centers of production to ports to the global marketplace.

Figure L1 presents the tonnage of English-owned merchant ships from 1550 to 1750 from one source. These estimates include series broken out by ports from after the Glorious Revolution. While Figure F5 presents the trends in the number of East India Company voyages (and tonnage

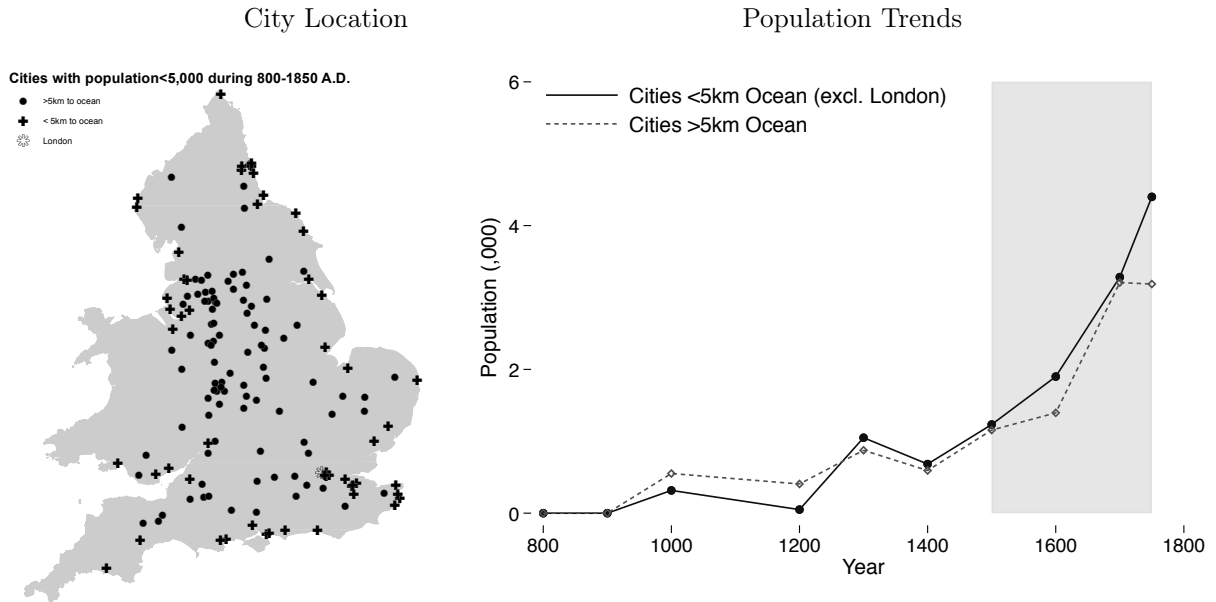
Figure F2: Trends in economic output deriving domestic and international trade, 1270-1700



Sources: Broadberry et al. (2015), pg. 170.

Notes: The above plot shows trends in the contribution of each domestic and international trade to output. The data is given as averages for specific decades (indicated by the scatter) by the source. The gray shaded period corresponds to the period studied in this paper. Output figures are given relative to the base year 1700 (1700=100).

Figure F3: Location and population trends of cities that achieved 5,000 people during 850-1850



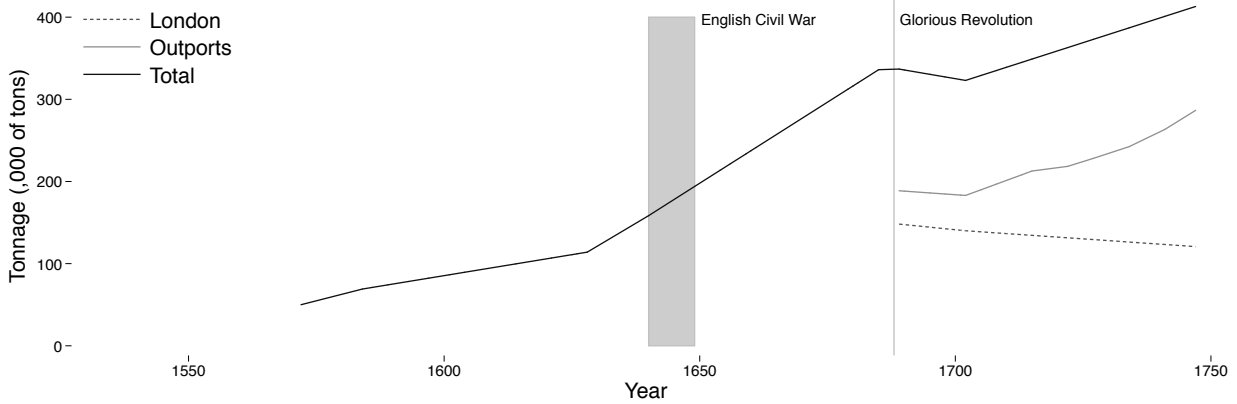
Sources: Cities data is from Bairoch, Batou and Chevre (1988).

Notes: The map above left indicates the location of cities in Britain that obtained a population of at least 5,000 people at some point prior to 1850. The crosses indicate the subset of those cities within 5km of the ocean, while the remainder are represented by points. The plot above right shows trends in average population for those same cities, excluding London, which was so populous that it dwarfs all other cities. The gray shaded period indicates the (approximate) period of study for this paper.

of those voyages) sailing annually from 1600-1750.

Figure F6 presents trends in the total creation of hereditary peerage titles—earls, dukes, mar-

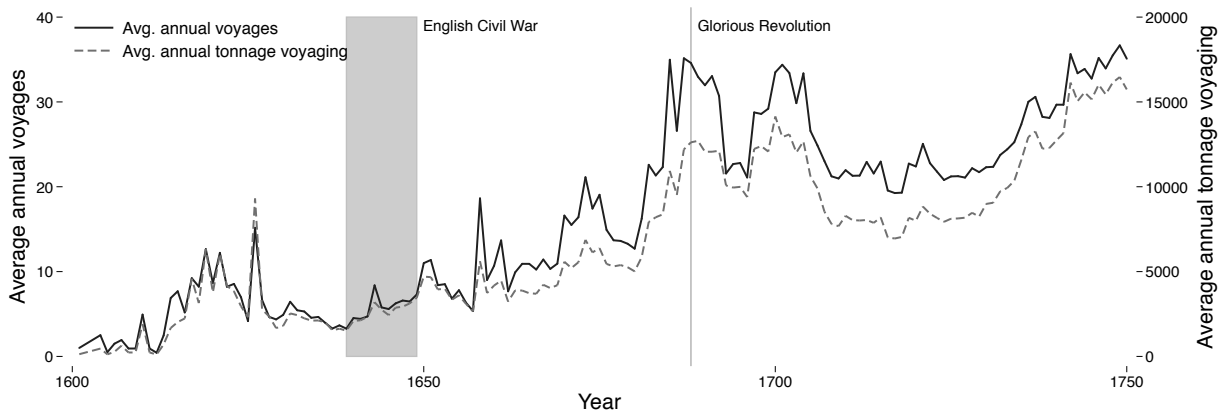
Figure F4: Trends in total tonnage of English-owned shipping, 1550-1750



Sources: Davis (1962), pg. 27.

Notes: This figure presents trends in the carrying capacity in tonnage of the English-owned shipping industry between 1550 and 1750.

Figure F5: Trends in East India Company Voyages and Tonnage

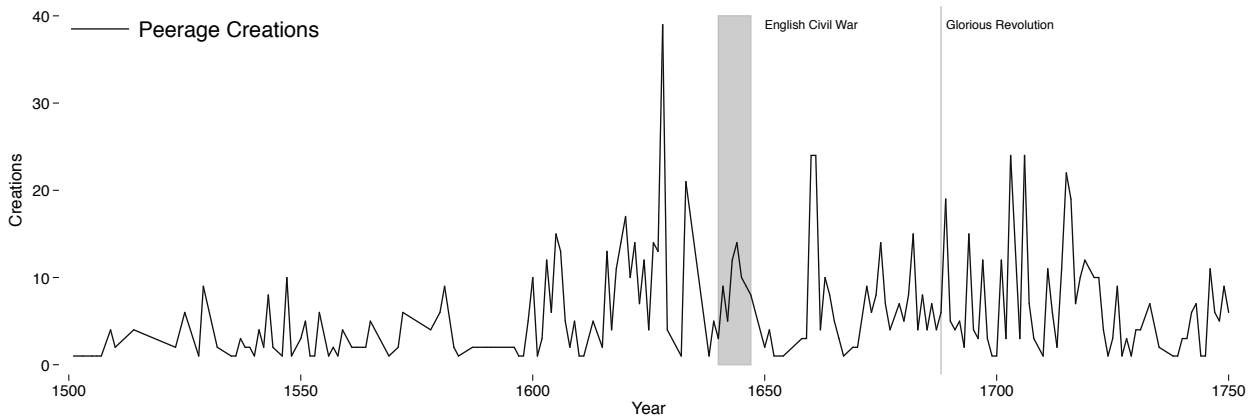


Sources: Sutton (1981), pg. 162.

Notes: This figure presents trends in average annual voyages as well as the average annual tonnage voyaging of the British East India Company from 1600 to 1750. Sutton lists the years that ships were in service, the number of voyages taken during that period, and the estimated tonnage of the ship. Sutton does not list the dates of individual voyages. I construct annual measures by averaging the number of voyages (and the total tonnage voyaging) over the years of service. The lifetime of a ship was not long, which means that in most cases these averages are done over only a few years. In the longest cases, they are averaged over a few decades (but this is rare). The first recorded ships in the Sutton data are from 1600.

quesses and barons. The figure indicates that the early 1600s did indeed see a growth in title creations consistent with an argument—like that made in Stone (1972)—that the Stuart monarchs used title creations to co-opt elites and increase their revenues, and that the growth of aristocratic titles diluted the social value of the titles.

Figure F6: Creations of Hereditary Peerage Titles, 1550-1750



Sources: Wikipedia.

Notes: The above table presents the number of annual new hereditary title creations (earls, dukes, marquesses, and barons) from 1550 to 1750. Baronets, which were non hereditary titles are not included.

## G Additional Results on a Subsample of Constituencies

Because the Tudors—particularly, Queen Elizabeth I—created many new constituencies (i.e. new borough constituencies, in particular), the number of constituencies is not constant throughout the period that I study.<sup>14</sup> This appendix presents results from the main model of the paper, but reducing the sample only to those constituencies that existed prior to 1554. This leaves out any constituencies that may have been newly formed in the post-1554 period. The reduced sample is 279 constituencies.

Table G1: Relationship between slave trade voyages and economic interests of MPs restricted to the sample of constituencies enfranchised in 1554

	% Commercial (All)	% Non-Comm. Capitalist	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)	(5)
London × Slave Voyages	0.0038*** (0.00056)	-0.00082*** (0.00026)	-0.0038*** (0.00017)	0.0028*** (0.00040)	0.0020*** (0.00028)
Port × Slave Voyages	0.00044 (0.00060)	0.000024 (0.00024)	-0.000095 (0.00018)	0.0011*** (0.00039)	0.00032 (0.00032)
Borough × Slave Voyages	0.00076* (0.00045)	-0.00073*** (0.00018)	0.00013* (0.000074)	0.00061* (0.00034)	0.00060*** (0.00019)
Constituency FE	✓	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓	✓
Controls x Voyages	✓	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	12793	12793	12793	12793	12793
Mean of DV	0.16	0.049	0.0060	0.047	0.046
Avg. within- <i>i</i> SD of DV	0.25	0.15	0.048	0.15	0.15
P-Value Joint Test	0	0	0	0	0

Standard errors robust to 279 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

If the representational behavior of those newly enfranchised places were significantly different than existing constituencies, or if there is a mechanical relationship that results from the number of representatives changing, then these results address that issue.<sup>15</sup>

<sup>14</sup>Leaving aside the shift in constituency enfranchisement in the Protectorate Parliaments, which I leave out of the analysis because of how different they were.

<sup>15</sup>More likely the mechanical effect would cut against the results found in the paper with respect to dynasties at least, since new constituencies must start new dynasties.



Table G2: Differential relationship between slave trade voyages and social backgrounds restricted to the sample of constituencies enfranchised in 1554

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London $\times$ Slave Voyages	0.0020*** (0.00032)	-0.0014** (0.00060)	0.00078* (0.00044)	0.0028*** (0.00036)
Port $\times$ Slave Voyages	0.00099*** (0.00022)	0.0013** (0.00057)	0.000046 (0.00034)	0.00027 (0.00040)
Borough $\times$ Slave Voyages	0.00097*** (0.00022)	0.0010** (0.00053)	-0.00061** (0.00026)	0.00058* (0.00033)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Controls x Voyages	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	13351	13351	13351	13351
Mean of DV	0.14	0.29	0.53	0.099
Avg. within- <i>i</i> SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0	0	0.0020	0

Standard errors robust to 279 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

Table G3: Differential relationship between trade and MPs invested in overseas joint stock companies restricted to the sample of constituencies enfranchised in 1554

	% Joint Stock Owners
	(1)
London $\times$ EIC Voyages	0.050*** (0.0044)
Port $\times$ EIC Voyages	0.020*** (0.0055)
Borough $\times$ EIC Voyages	0.0041 (0.0027)
Constituency FE	✓
Parliament FE	✓
Controls x Voyages	✓
Obsv. (Constit.-Parl.)	6376
Mean of DV	0.047
Avg. within- <i>i</i> SD of DV	0.15
P-Value Joint Test	0

Standard errors robust to 279 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1. See the text for more details.

Table G4: Differential relationship between trade and MPs without property in the county restricted to the sample of constituencies enfranchised in 1554

	% w/o Property in the County
	(1)
London $\times$ Slave Voyages	0.0061*** (0.00090)
Port $\times$ Slave Voyages	0.0012** (0.00057)
Borough $\times$ Slave Voyages	0.0014** (0.00057)
Constituency FE	
	✓
Parliament FE	
	✓
Controls x Voyages	
	✓
Obsv. (Constit.-Parl.)	13351
Mean of DV	1.02
Avg. within- <i>i</i> SD of DV	0.43
P-Value Joint Test	0

Standard errors robust to 279 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

*Notes:* The above table presents the results from estimating equation 1. See the text for more details.

## H Results for Mining, Industry and Textiles

[MORE HERE.]

## I Results Using Alternative Measures of Trade

In this Appendix, I present the main estimations from the paper using an alternative measure of expanding trade—namely, the trend in average annual East India Company voyages. These voyages again approximate the overall growth of the Atlantic economy, though focus on one particular aspect, that of ocean-trade around the Cape of Good Hope to South Asia.

Table II: Differential relationship between East India Company voyages and economic interests with control variable coefficients

(5)	% Commercial (All)	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)
London $\times$ EIC Voyages 0.013***  (0.00058)	0.0090***  (0.0012)	-0.0022***  (0.00067)	-0.0098***  (0.00036)	0.016***  (0.00080)
Port $\times$ EIC Voyages 0.0014**  (0.00053)	0.0039***  (0.0012)	-0.0011  (0.00072)	-0.00020  (0.00031)	0.0045***  (0.00087)
Borough $\times$ EIC Voyages 0.00086***  (0.00028)	0.0021***  (0.00068)	-0.0016***  (0.00037)	0.000051  (0.000080)	0.0011**  (0.00049)
Slope $\times$ EIC Voyages 0.00034***  (0.00012)	0.00048*  (0.00026)	0.000021  (0.00012)	0.000034  (0.000060)	0.00016  (0.00022)
Road Density $\times$ EIC Voyages 0.00040  (0.0014)	-0.0094***  (0.0031)	-0.00077  (0.0013)	-0.0012  (0.0012)	-0.0044**  (0.0020)
River Density $\times$ EIC Voyages -0.0018  (0.0025)	-0.0026  (0.0056)	-0.0023  (0.0028)	-0.00037  (0.00074)	-0.000060  (0.0040)
Ocean Proximity $\times$ EIC Voyages 0.000058*  (0.000031)	-0.000056  (0.000080)	-0.00011***  (0.000040)	0.0000084  (0.000081)	-0.00012*  (0.000064)
Precipitation $\times$ EIC Voyages -0.0000020*  (0.0000011)	-0.0000050***  (0.0000019)	-0.0000035**  (0.0000015)	-0.00000060  (0.0000037)	-0.0000015  (0.0000015)
Soil Quality $\times$ EIC Voyages -0.00000020  (0.00000069)	-0.000000098  (0.0000016)	-0.0000026**  (0.0000012)	-0.00000054  (0.0000034)	0.00000036  (0.0000013)
Constituency FE ✓	✓	✓	✓	✓
Parliament FE ✓	✓	✓	✓	✓
Obsv. (Constit.-Parl.) 21206	21206	21206	21206	21206
Mean of DV 0.044	0.16	0.050	0.0048	0.047
Avg. within- <i>i</i> SD of DV 0.15	0.26	0.15	0.044	0.15
P-Value Joint Test 0	0	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1 using trade measured by East India Company voyages. See the main paper for more details on the estimation.

Table I2: Differential relationship between between East India Company voyages and economic interests with control variable coefficients by institutional arrangement

	% Commercial (All)	% Merchant Adventurers	% Asia Traders	% New World Traders
	(1)	(2)	(3)	(4)
London × EIC Voyages	0.011*** (0.00100)	-0.0069*** (0.00038)	0.043*** (0.0012)	0.028*** (0.0013)
London × EIC Voyages × Post-1688	0.0013 (0.00098)	-0.0029*** (0.00038)	-0.027*** (0.0013)	-0.016*** (0.0014)
Port × EIC Voyages	0.0018* (0.00094)	0.00046 (0.00053)	0.0023** (0.0011)	0.0035*** (0.0012)
Port × EIC Voyages × Post-1688	0.00099 (0.0011)	-0.00066 (0.00056)	0.0021* (0.0012)	-0.0022 (0.0013)
Borough × EIC Voyages	-0.00044 (0.00045)	0.000058 (0.00010)	0.0017** (0.00073)	0.00044 (0.00067)
Borough × EIC Voyages × Post-1688	0.0013*** (0.00045)	-0.0000079 (0.00013)	-0.00065 (0.00074)	0.00042 (0.00065)
Slope × EIC Voyages	-0.000050 (0.00013)	0.000022 (0.000065)	0.00068** (0.00027)	0.000047 (0.00021)
Road Density × EIC Voyages	0.0019 (0.0022)	-0.0021** (0.00100)	-0.00053 (0.0035)	0.0098*** (0.0029)
River Density × EIC Voyages	0.0028 (0.0038)	0.0014 (0.0012)	0.013** (0.0049)	0.0026 (0.0049)
Ocean Proximity × EIC Voyages	-0.00012*** (0.000043)	-0.0000033 (0.000024)	0.000031 (0.000073)	0.000029 (0.000076)
Precipitation × EIC Voyages	0.00000045 (0.0000011)	-0.00000050 (0.00000072)	-0.0000021 (0.0000017)	0.0000055** (0.0000024)
Soil Quality × EIC Voyages	0.00000078 (0.00000085)	0.00000016 (0.00000065)	-0.00000015 (0.0000017)	0.0000018 (0.0000018)
Slope × EIC Voyages × Post-1688	0.000057 (0.00016)	0.000012 (0.000089)	-0.00052* (0.00030)	0.00029 (0.00021)
Road Density × EIC Voyages × Post-1688	-0.0037 (0.0023)	0.00094 (0.00097)	-0.0039 (0.0034)	-0.0093*** (0.0031)
River Density × EIC Voyages × Post-1688	-0.0036 (0.0040)	-0.0018 (0.0014)	-0.013** (0.0051)	-0.0044 (0.0052)
Ocean Proximity × EIC Voyages × Post-1688	0.00010** (0.000045)	0.000012 (0.000024)	-0.00015* (0.000081)	0.000028 (0.000081)
Precipitation × EIC Voyages × Post-1688	0.00000087 (0.0000013)	-0.000000099 (0.00000079)	0.00000062 (0.0000017)	-0.0000075*** (0.0000026)
Soil Quality × EIC Voyages × Post-1688	0.0000016* (0.00000087)	-0.00000069 (0.00000069)	0.00000051 (0.0000015)	-0.0000020 (0.0000018)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	21206	21206	21206	21206
Mean of DV	0.027	0.0048	0.047	0.044
Avg. within- <i>i</i> SD of DV	0.11	0.044	0.15	0.15
P-Value Joint Test	0.0080	0	0	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1 using trade measured by East India Company voyages. See the main paper for more details on the estimation.

Table I3: Differential relationship between East India Company voyages and social backgrounds with control variable coefficients

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London $\times$ EIC Voyages	0.0055*** (0.00063)	-0.0036** (0.0016)	0.0020* (0.0011)	0.0068*** (0.0011)
Port $\times$ EIC Voyages	0.0023*** (0.00051)	0.0032** (0.0014)	-0.00054 (0.00088)	0.0018* (0.00100)
Borough $\times$ EIC Voyages	0.0019*** (0.00038)	0.0019** (0.00093)	-0.0016** (0.00063)	0.0011* (0.00061)
Slope $\times$ EIC Voyages	0.000019 (0.00016)	-0.0010*** (0.00036)	0.00015 (0.00023)	0.00023 (0.00026)
Road Density $\times$ EIC Voyages	-0.0017 (0.0016)	0.0041 (0.0038)	0.0022 (0.0028)	-0.0026 (0.0027)
River Density $\times$ EIC Voyages	0.00023 (0.0029)	-0.014* (0.0077)	0.012*** (0.0044)	0.0061 (0.0047)
Ocean Proximity $\times$ EIC Voyages	-0.000079 (0.000050)	-0.000059 (0.00012)	0.0000090 (0.000079)	-0.0000081 (0.000072)
Precipitation $\times$ EIC Voyages	-0.0000054*** (0.0000013)	0.0000100** (0.0000046)	-0.0000040** (0.0000019)	0.00000027 (0.0000021)
Soil Quality $\times$ EIC Voyages	-0.0000017* (0.0000010)	0.0000030 (0.0000038)	0.0000028* (0.0000017)	0.0000013 (0.0000017)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Obsv. (Constit.-Parl.)	22134	22134	22134	22134
Mean of DV	0.14	0.28	0.55	0.096
Avg. within- $i$ SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0	0	0.0020	0

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1 using trade measured by East India Company voyages. See the main paper for more details on the estimation.

Table I4: Differential relationship between East India Company voyages and social backgrounds with control variable coefficients by institutional arrangement

	% Dynastic	% Aristocratic	% New	% Merchant Family
	(1)	(2)	(3)	(4)
London × EIC Voyages	0.0059*** (0.0013)	-0.00092 (0.0031)	0.0059** (0.0028)	0.014*** (0.0026)
London × EIC Voyages × Post-1688	-0.00036 (0.0011)	-0.0027 (0.0027)	-0.0038* (0.0022)	-0.0071*** (0.0025)
Port × EIC Voyages	0.0011 (0.0011)	0.0034 (0.0029)	-0.0065*** (0.0019)	0.0058*** (0.0020)
Port × EIC Voyages × Post-1688	0.0012 (0.00082)	-0.00026 (0.0023)	0.0059*** (0.0016)	-0.0039** (0.0018)
Borough × EIC Voyages	-0.00021 (0.00079)	0.0024 (0.0029)	-0.0080*** (0.0014)	0.0024* (0.0013)
Borough × EIC Voyages × Post-1688	0.0021*** (0.00066)	-0.00049 (0.0026)	0.0064*** (0.0011)	-0.0014 (0.0011)
Slope × EIC Voyages × Post-1688	0.00023 (0.00026)	-0.00054 (0.00054)	-0.00036 (0.00038)	0.00022 (0.00030)
Road Density × EIC Voyages × Post-1688	0.0053** (0.0025)	-0.0038 (0.0079)	-0.015*** (0.0052)	-0.0095 (0.0062)
River Density × EIC Voyages × Post-1688	0.0092* (0.0048)	-0.0012 (0.013)	0.011 (0.0090)	-0.018* (0.0098)
Ocean Proximity × EIC Voyages × Post-1688	0.000064 (0.000079)	-0.00028 (0.00031)	-0.00010 (0.00012)	-0.000023 (0.00012)
Precipitation × EIC Voyages × Post-1688	-0.0000027 (0.0000024)	-0.0000038 (0.0000064)	-0.0000038 (0.0000039)	-0.0000021 (0.0000038)
Soil Quality × EIC Voyages × Post-1688	-0.0000014 (0.0000017)	-0.0000012 (0.0000054)	-0.0000099*** (0.0000033)	-0.0000072** (0.0000031)
Slope × EIC Voyages	-0.00021 (0.00033)	-0.00045 (0.00075)	0.00051 (0.00046)	0.0000079 (0.00040)
Road Density × EIC Voyages	-0.0070** (0.0030)	0.0079 (0.0074)	0.018*** (0.0068)	0.0070 (0.0066)
River Density × EIC Voyages	-0.0091 (0.0057)	-0.013 (0.014)	0.00087 (0.011)	0.024** (0.011)
Ocean Proximity × EIC Voyages	-0.00014 (0.00010)	0.00022 (0.00031)	0.00011 (0.00015)	0.000015 (0.00015)
Precipitation × EIC Voyages	-0.0000027 (0.0000026)	0.000014* (0.0000083)	-0.000000091 (0.0000039)	0.0000025 (0.0000040)
Soil Quality × EIC Voyages	-0.00000031 (0.0000021)	0.0000042 (0.0000067)	0.000013*** (0.0000034)	0.0000087** (0.0000034)
Constituency FE	✓	✓	✓	✓
Parliament FE	✓	✓	✓	✓
Obsv. (Const.-Parl.)	22134	22134	22134	22134
Mean of DV	0.14	0.28	0.55	0.096
Avg. within- <i>i</i> SD of DV	0.23	0.32	0.37	0.21
P-Value Joint Test	0.0030	0.79	0	0.020

Standard errors robust to 356 clusters at the geographic level of shared political history presented in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Notes: The above table presents the results from estimating equation 1 using trade measured by East India Company voyages. See the main paper for more details on the estimation.



## J Trend Plots for MP Economic Interests

Figures J1 and J2 present trends for each of the separate economic interest codings considered in the paper. Note that the y-axis scales on each individual trend plot are different. The scattered points are the raw data for the percentage of MPs in that parliament coded as involved in that activity. The trend lines are local polynomial fits to that raw data to ease visual interpretation.

Note that these represent the trends for *any* economic activity an MP may have been involved in. Thus, MPs involved in multiple interests may be counted in more than one plot. The landed interest is not represented as so many MPs were land owners that the History of Parliament Project was not universally likely to mention this activity/interest, unlike others. See Appendix C for more details on the coding of the economic interests.

Figure J1: Trends in the % of MPs involved in different economic activities

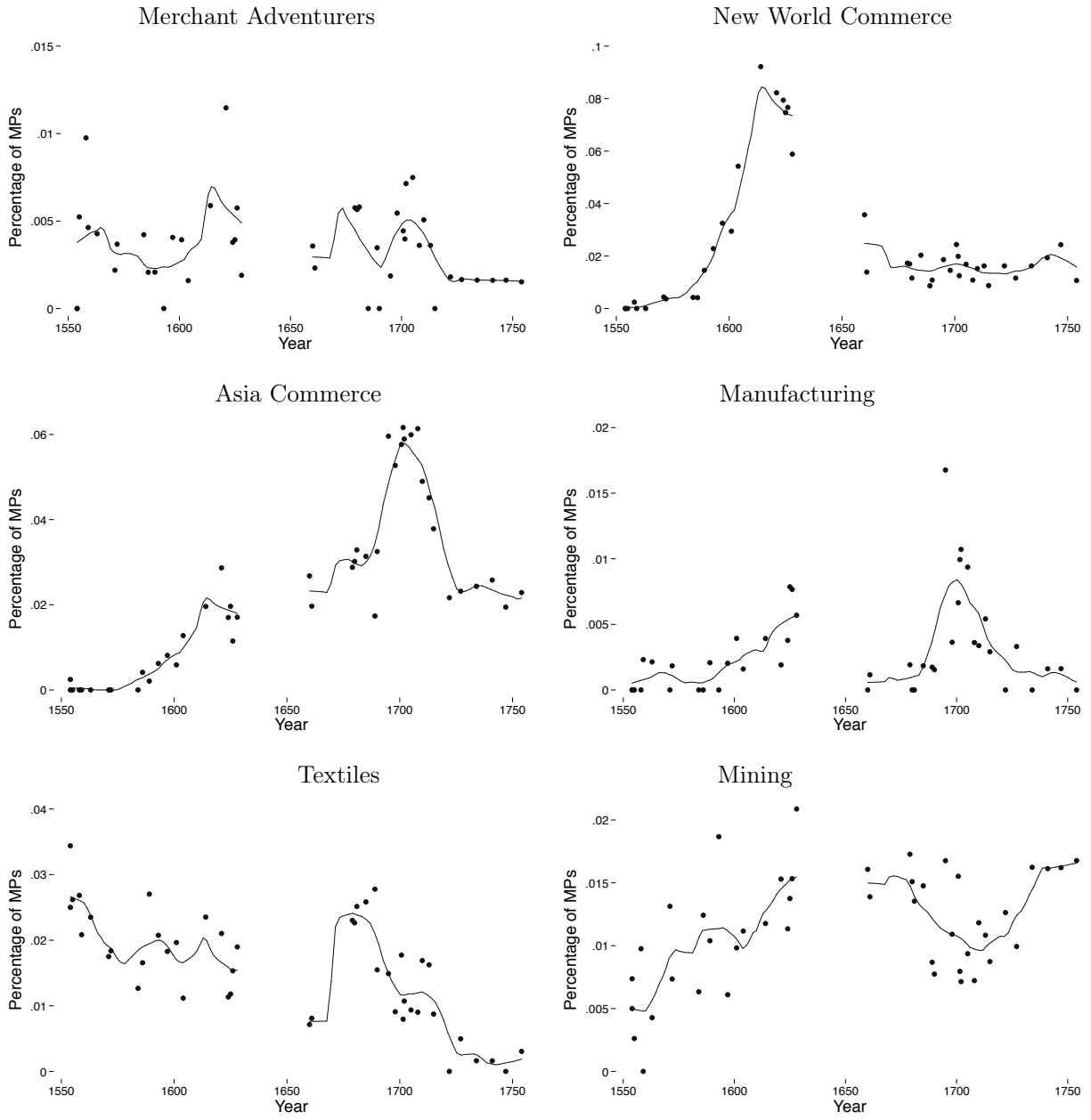
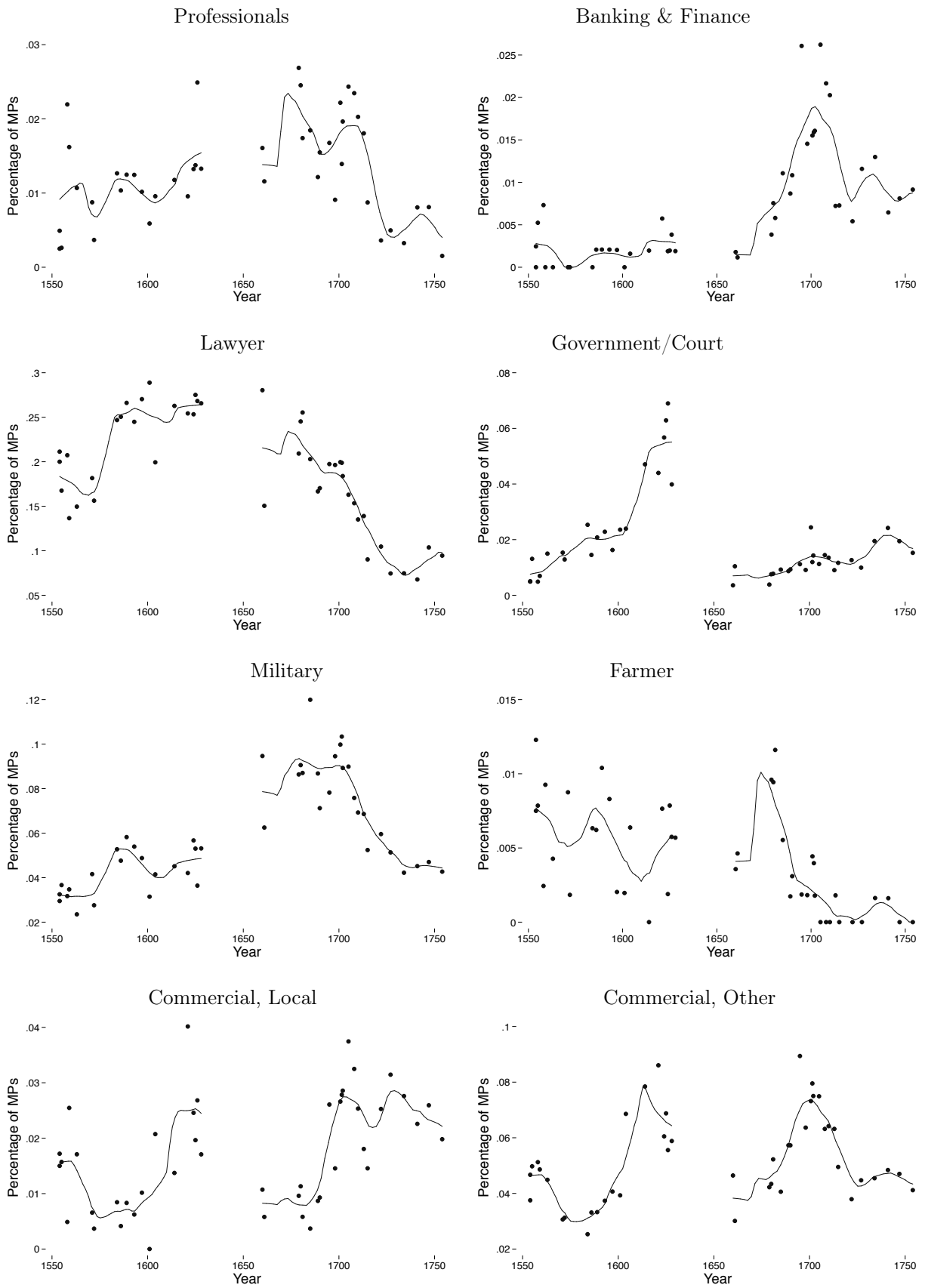


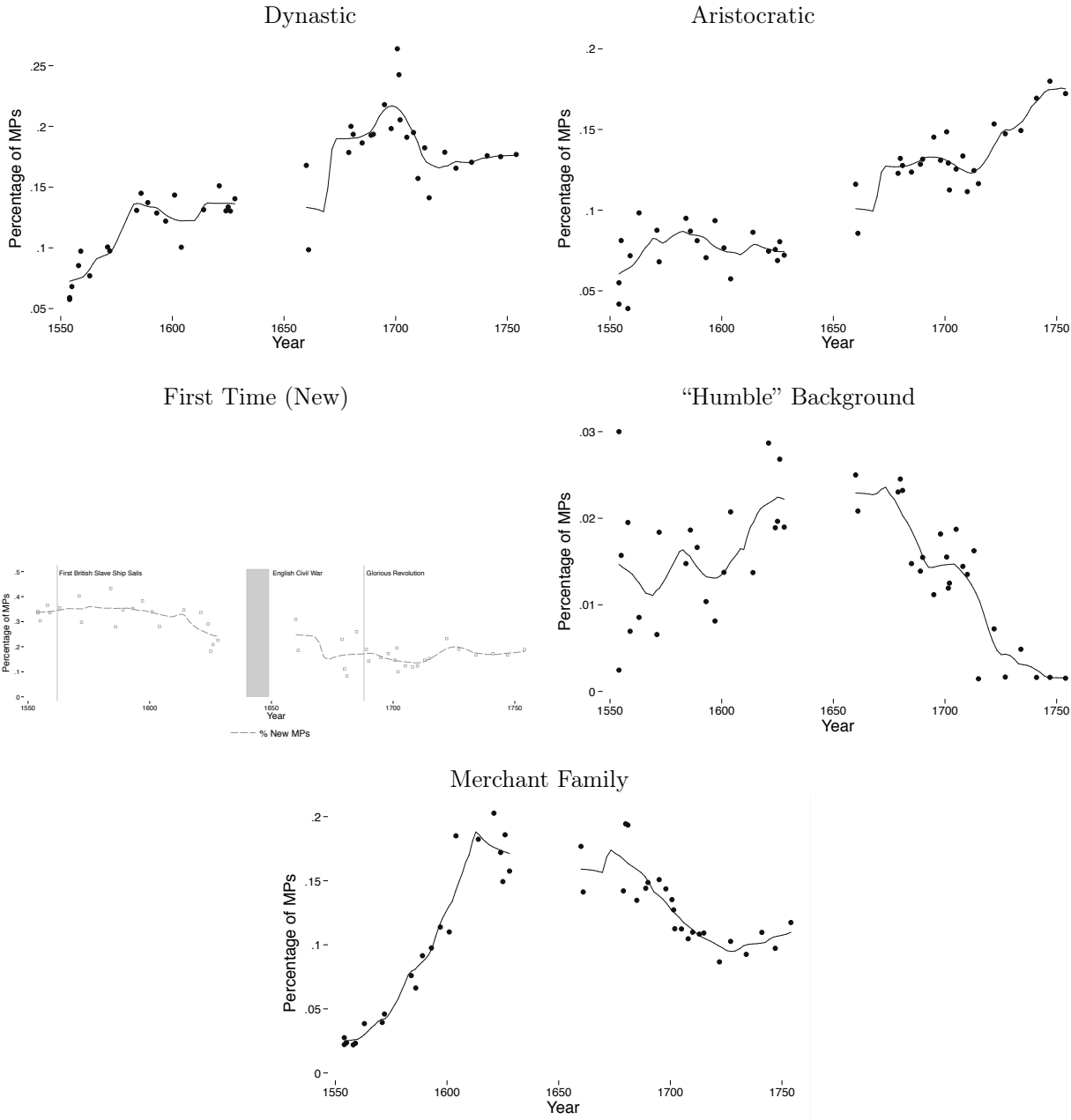
Figure J2: (Cont'd) Trends in the % of MPs involved in different economic activities



# K Trend Plots for MP Social Backgrounds

This appendix presents trends in social background characteristics of MPs. These include those presented in the main paper. See the main text of the paper for more details on the coding.

Figure K1: Trends in the social backgrounds of MPs



## L Geographic Unit of Analysis

Much of the empirical analysis of this paper relies on a geographic unit of analysis—the parliamentary (electoral) constituency. Because the empirical analysis also leverages temporal variation, the changing boundaries of parliamentary constituencies over the period of study—1708-1884—is problematic. This time period saw both the emergence of new constituencies, but also the disenfranchisement of old constituencies. In particular, the Great Reform Act of 1832 induced substantial change on the political geography of the British Isles by disenfranchising the venal “rotten boroughs,” enfranchising the fast-growing cities of the industrial north, and splitting many of the larger county constituencies into multiple units.

In order to perform inter-temporal analysis, I construct a new geographic unit of analysis that is stable over the period of study. I refer to this new unit as a *synthetic constituency unit*. Unless explicitly noted, all geographic analysis in the paper utilizes this unit. As an example of how this unit is constructed, consider constituency A in period 1 that splits into two constituencies B and C in period 2. My dataset contains two synthetic units corresponding to the boundaries of B and C. Those units would *each* be assigned the electoral information and representation (MPs) of constituency A in period 1, and their separate representation in period 2.

I describe in detail here the process of creating these units. I also note for the reader familiar with stable geographic units constructed using grids, that this method is analogous, but that the “grid” (the final set of synthetic units) is geographically maximal in history of political representation.<sup>16</sup>

### .1 Create shapefiles for each period during which constituency boundaries were stable

The first step in creating a stable geographic unit of analysis is creating a GIS shapefile (feature class) for each time period for which parliamentary constituency boundaries were stable. Shapefiles of parliamentary constituencies boundaries exist for selected post-1832 periods and are available from the UK Data Archive’s Edina Boundary Data Selector (University of Edinburgh, 2007). In order to create pre-1832 boundaries, I utilize 1832 boundaries for any constituency that existed both in 1832 and also prior, under the assumption that the boundaries did not change substantially in the pre-1832 period. For example, the county constituency of Nottinghamshire has existed in England since the 13th century, and I used the 1832 boundaries of Nottinghamshire for the entire pre-1832 period under the assumption that while there may have been small changes in its boundaries, the historical boundaries largely correspond to those codified explicitly in 1832.<sup>17</sup>

For those constituencies that existed prior to 1832 but not subsequently, I use a combination

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<sup>16</sup>i.e. There are no synthetic units with exactly the same histories of political representation.

<sup>17</sup>I have not encountered maps, digitized or otherwise, that comprehensively delineate pre-1832 boundaries. Even maps of boundaries of individual constituencies are rare, and usually appear imprecisely drawn rather than explicit and official.

of historical maps and a shapefile of 1851 parish boundaries (also available from the UK Data Archive’s Edina Boundary Data Selector) to construct their historical boundaries. Most, though not all, of the boundary changes that occurred pre-1832 involved the enfranchisement and disenfranchisement of borough constituencies (small “urban” units). These borough constituencies typically comprised one or two parishes. Parishes are the smallest administrative unit in the British Isles, covering on average just a few square miles. Using historical documentation of the parishes that were enfranchised in a particular borough, I select same-named parishes from the shapefile, aggregate them (the *merge* tool in ESRI’s ArcMap software), and add them (the *update* tool) to the other constituency boundaries in the relevant period. Again, using the 1851 parish boundaries may not capture historical changes in parish boundaries that occurred prior to 1851, however to the best of my knowledge no systematic alternative, nor many non-systematic sources, exist for these historical borough boundaries.

I construct separate shapefiles for seven periods. Each of these shapefiles corresponds to a time period during which constituency boundaries did not change. All boundaries cover England, Wales, and Scotland, but do not include Ireland though Ireland sent representatives to Parliament during this period.

Table L1: Parliamentary Constituencies by Period

	Period	Number of Constituencies	Nations		Period	Number of Constituencies	Nations
<b>1</b>	1708-1800	317	E, W, S	<b>5</b>	1861-1864	336	E, W, S
<b>2</b>	1801-1819	317	E, W, S	<b>6</b>	1865-1867	338	E, W, S
<b>3</b>	1820-1831	316	E, W, S	<b>7</b>	1868-1884	354	E, W, S
<b>4</b>	1832-1860	333	E, W, S				

*Notes:* Each row captures a period during which constituencies were stable (no new constituencies were enfranchised or disenfranchised). Constituencies reflect the number of geographic units, not the number of Parliamentary representatives. Ireland also sent representatives to Parliament post-1801 but is not included in the analysis presented of this paper.

## .2 Intersect all unique shapefiles

Next, I intersect all seven shapefiles together in ArcMap (*intersect* tool). Intersection successively stamps each unique set of boundaries on top of one another. Many boundaries will overlap perfectly from period to period, while others will only exist in one period. The shapefile resulting from this intersection includes all distinct boundaries from all periods. Some of these boundaries reflect new constituencies that were created or disenfranchised during the period. Other boundaries simply reflect movement in boundaries.<sup>18</sup>

<sup>18</sup>Some of these boundary movements may reflect measurement error between different shapefile maps rather than true shifts in constituency boundaries. Normally, a relatively large resolution choice in applying the intersect tool

Figure ?? shows in detail the constituency boundaries in the Northwest of England during two periods. The left-most figure shows the boundaries in and around the county of Lancashire from 1820-1831. For reference, Liverpool (which was enfranchised during the period) and Manchester (which was not) are shown on the map, along with the town of Ashton-in-Makerfield which was represented in the pre-1832 period by the constituency of Newton. The middle plot shows the same area with the boundaries that existed from 1832-1860. After the Great Reform Act of 1832, Manchester was enfranchised (along with Salford, bordering to its west). The right-most figure results from intersecting the two period plots. The figure contains constituency boundaries that existed in the post-1832 period but *not* the pre-1832 period (the constituency of Manchester), as well as those that existed in the pre-1832 period but *not* the post-1832 period (the constituency of Newton representing the town of Ashton-in-Makersfield). That is, it contains all boundaries.

### .3 Resultant political representation for a synthetic constituency unit

When all seven individual shapefiles are intersected, the resultant polygons represent the synthetic constituency units used in this paper's analysis. In the right-most figure of Figure ??, these resultant polygons are labeled A, B and C. Political representation is assigned to these units by the constituency that represented that particular geography in a given period. For instance, prior to 1832, the city of Manchester did not have its own representation in Parliament. Rather, that geographic area was part of the county of Lancashire and was thus represented, geographically speaking, by the MPs of Lancashire. Similarly, the town of Ashton-in-Makerfield had its own representation in the pre-1832 period. However, after the Great Reform Act it lost this representation and was instead represented by the MPs of Lancashire South. The large county constituency of Lancashire was split into Lancashire North and Lancashire South in 1832. Table ?? shows the political representation of these three units in the two parliaments before and the two parliaments after 1832.

The main source for these changes were the constituencies enfranchised by Elizabeth I in the late 16th century. These constituencies were mainly a response to royal financial difficulties and elite divisions and an attempt to co-opt powerful magnates who could control those constituencies (Gauci, 2001).

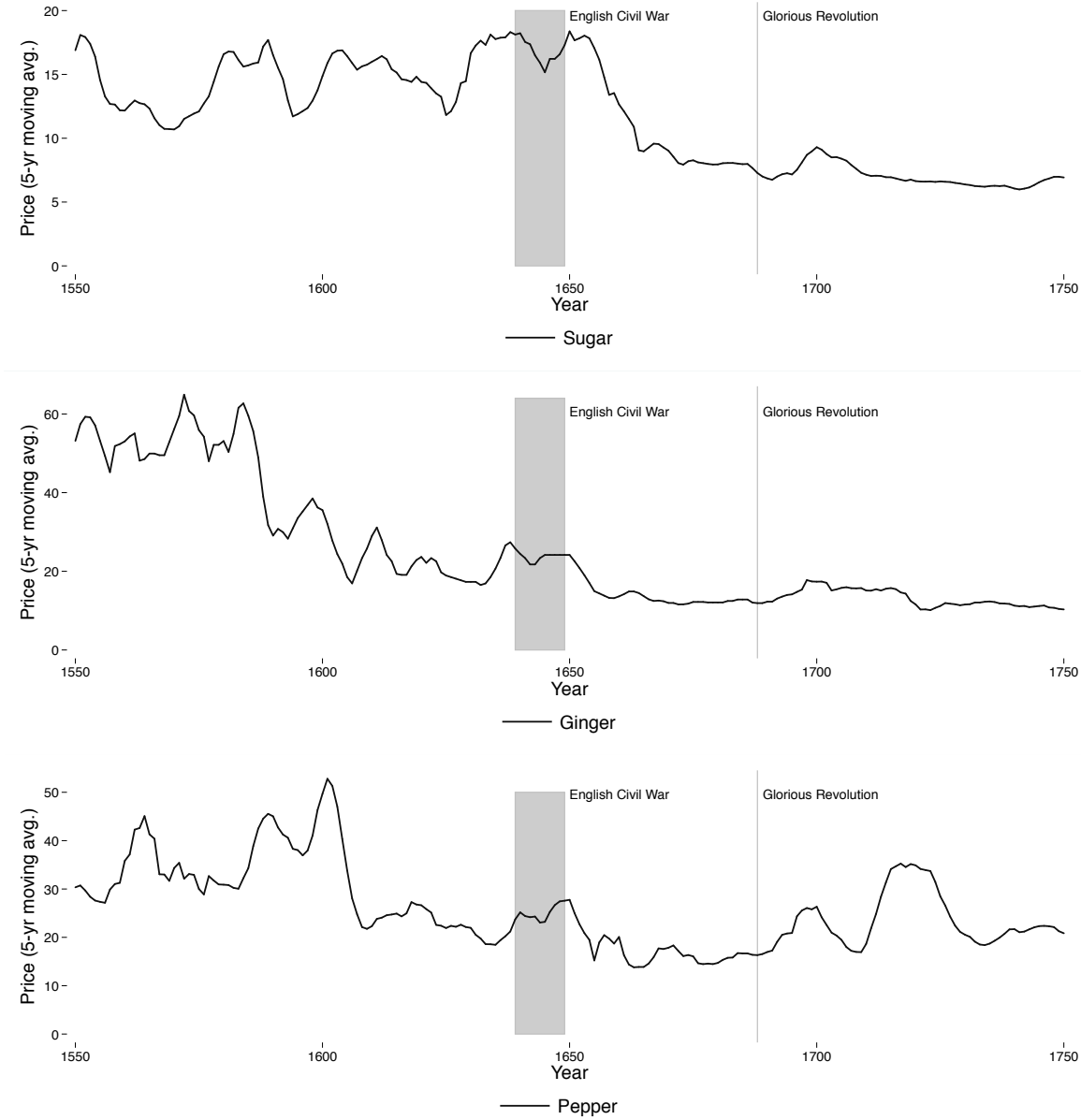
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would allow one to conclude that boundaries that move only a few kilometers were probably drawn differently in different GIS maps, but are not actually different. However, the fact that many borough constituencies are smaller than a few kilometers means that the resolution parameter has to be small enough to capture their existence. A resolution parameter that is too large removes small boroughs from the map entirely. Of course, given the clustering that is ultimately performed, this boundary measurement error (and the fact that it probably creates more synthetic constituency units than it needs to) is not inherently problematic. Furthermore, the measurement error introduced in measuring population (and other geographic features) is assumed to be random and bias any estimated effects to zero.

# M Trends in Commodity Prices

This appendix presents trends in commodity prices for sugar, giner and pepper during the 16th-18th centuries to illustrate how the growth of the Atlantic economy shifted prices. From the extensive list of Clark (2005)'s commodities I used two criterion for selection: first, that the series existed as early as 1550 or close to it (which significantly reduced the available series; e.g. tea, tobacco and silk were not available), and second, that the commodities were part of the Atlantic trade (thus excluding commodities like butter, eggs, and tallow, that were domestic-only goods).

Figure L1: Trends in Atlantic economy commodity prices, 1550-1750



Sources: Clark (2005).  
 Notes: This figure presents trends in select commodity prices for England over the period 1550-1750. The trends are 5-year backwards-looking moving averages presented in constant units of silver.