Taxation, Credit and Public Expenditure in Urban Germany, 1400-1800

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Abstract

How did urban revenues and expenditure evolve in pre-industrial Germany? Trends in public wealth are crucial to understanding economic growth, public goods provision and inequality. This paper presents first trends in urban revenues and expenditure from 1350 to 1800. It is based on a novel city-level dataset comprising 22 cities. City selection is shown to be representative of the urban Empire at large. The data reveal the following trends: German cities financed themselves mostly through taxation and to a lesser extent through credit. While income from wealth taxes declined until 1550, income from consumption taxes and credit made up the shortfall. Together, this likely led to an increase in inequality. From 1550, this trend reversed and wealth taxes provided for a large share of income during and after the Thirty Years' War (1618-1648). Prior to the war, cities spent most of their revenues on construction and debt servicing. Construction was focused on administrative buildings. After the war, military expenses and debt servicing dominated city expenditure.

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Introduction

Early modern public finance is at the heart of explanations of economic growth and state building (Dincecco 2009, North & Weingast 1898, Stasavage 2011). Access to cheap credit and sustained income from taxation are crucial factors in this development. The Netherlands and England are considered the most successful polities in this respect, as they were able to borrow cheaply due to parliamentary budget oversight and tax efficiently. However, these perspectives take centralization as a prerequisite for a successful system of public finance. This makes it difficult to assess public finance in decentralized polities. The Holy Roman Empire, for example, comprised more than 300 territories and autonomous cities. Prior research therefore focused mostly on the large territories of Prussia and Austria (Schremmer 2008). However, territorial public finance developed comparatively late in those states. In contrast, German towns had developed sophisticated systems of public finance long before the territorial states caught up (North 2012: 146). They were the pioneers and innovators of financial and administrative practices. Indeed, in some cases urban taxation systems provided concrete blueprints for territorial rulers.

Therefore, this paper approaches the public finance history of Germany by focusing on towns. While German towns had less political weight at imperial assemblies than Dutch towns, they were still important players on which the Emperor relied in his struggle with the princes. Moreover, towns were the center of capital markets and the home of imperial financiers such as the Fugger family who resided in Augsburg. Their role in financing both warfare – in particular the Thirty Years' War (1618-1648) – and public infrastructure has not yet been explored comprehensively. To fully understand the evolution of public finance in pre-industrial Germany, one therefore needs to investigate its towns. This is what this paper sets out to do.

Sources

The principal sources used for the creation of the dataset are city monographs which contain transcripts of city budgets. In total, I compiled data from more than 70 monographs and articles. From each source the following variables were calculated at an annual level: total income, total expenses, income from direct taxation, direct tax rate levied, income from indirect taxation, income from customs, income from credit, military expenses, imperial taxes and fees, public construction expenditure, public administration expenditure, school expenditure, interest payments.

Each city recorded their finances in their own currency of account. Where possible, I converted this currency of account into the equivalent amount of Rhenish guilders and into grams of gold. The Rhenish guilder was the most widely used gold currency in the Holy Roman Empire (Chilosi and Volckert 2011). Besides the original monographs, I used more than ten other sources to calculate conversion rates. To date, limited convertibility has been one of the main roadblocks for a comparative history.

Population numbers for each city were obtained either from the same source as the city budget data or, if these did not include population statistics, from Alfani et al. (2022), Bairoch et al. (1998), De Vries (1984) or the *Deutsche Städtebuch*.

Data

The dataset comprises 2,275 observations of annual revenue and expenditure data across 22 cities and 1,342 observations of annual wealth tax rates across 50 cities. These data were clustered in 10-year intervals. The dataset is an unbalanced panel because information could not be obtained for every decade for every city.

My sample is representative of the urban Holy Roman Empire in terms of population size, political institutions, religion and city status. To prove this, I constructed a 'reference universe' of towns by compiling information on these

characteristics from De Vries (1984), Bairoch et al. (1998), Wahl (2016) and the *Deutsche Städtebuch*. This 'reference universe' comprises 287 cities.

Location

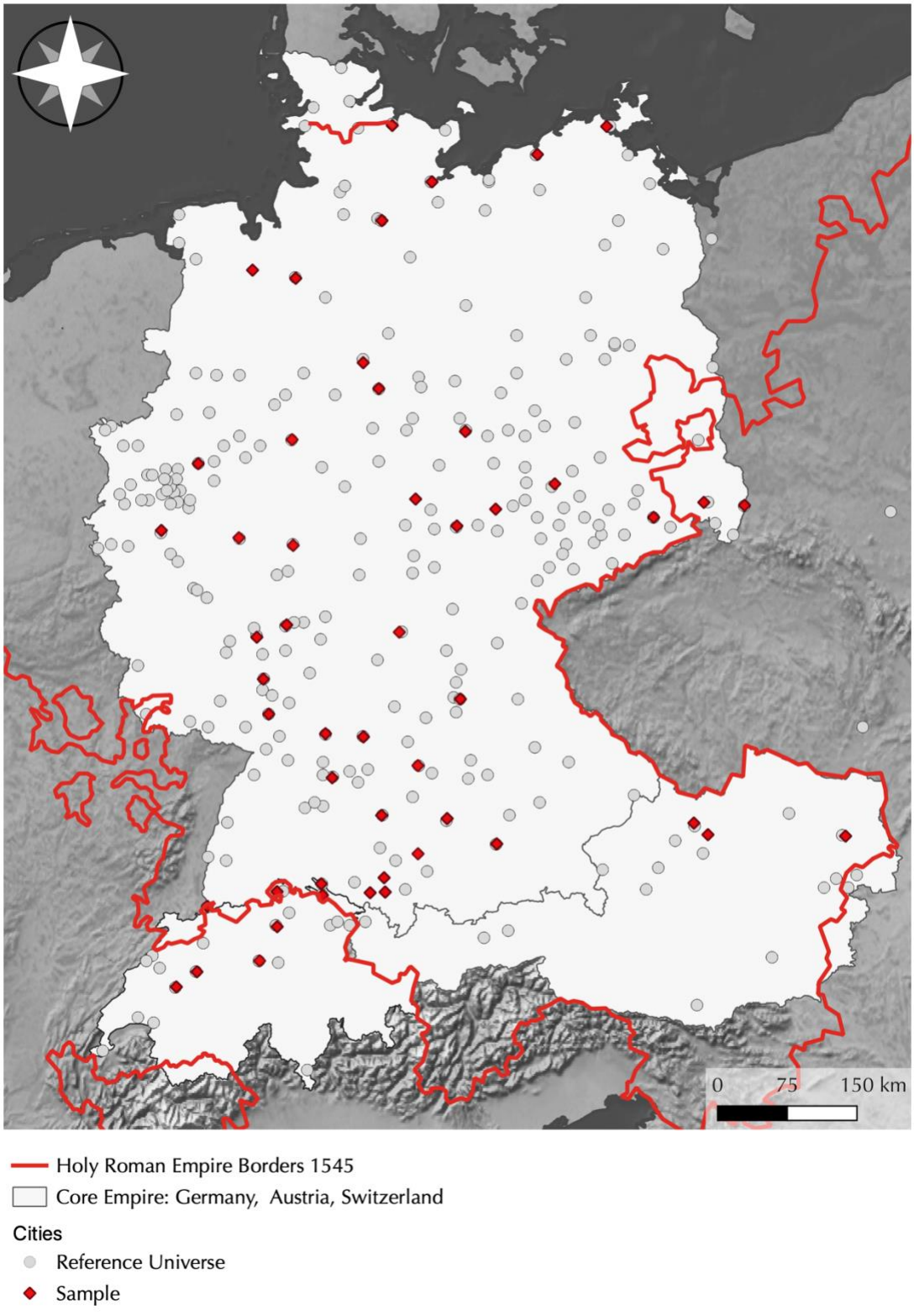
Map 1 shows all cities in the reference universe and the sample. There is no geographic clustering and the sample broadly represents the reference universe. It is notable that there are fewer cities in the North-East of the Empire. However, this simply reflects a well-established fact of German urban geography.

Population Size

Comparing average and median city size in each century in my sample to the reference universe, shows that the sample comprises slightly larger cities on average than the reference universe. However, the difference is negligible, and the sample reflects overall trends in population size well (see Table 2).

Century	Mean City Size		Median City Size	
	Sample	Reference Universe	Sample	Reference Universe
1300-1399	12,946 *0.0515*	7,779	10,204	5,000
1400-1499	9,536 *0.0842*	7,159	6,545	5,000
1500-1599	11,677 *0.1728*	8,551	6,310	5,000
1600-1699	13,013 *0.2744*	8,765	5,463	4,000
1700-1799	15,804 *0.6417*	11,875	5,220	6,000

Table 2: Mean and Median City Size in Sample and Reference Universe by Century. *P-values for the sample means reported below in italics.*



Map 1: Cities in Sample and Reference Universe.

Institutions & Religion

Overall, the sample and reference universe are comparable (see Table 3). There are only three differences that are notable: the sample comprises a higher share of imperial cities, a lower share of religiously-mixed cities and a higher share of cities with guild participation. However, the difference city status made for a city's fiscal administration should not be overstated, as many territorial cities enjoyed similar levels of autonomy as Imperial Cities.

Measure	Sample	%	Reference Universe	%
City Status				
Imperial City	22	55.1	40	13.9
Territorial City	27	44.9	247	86.0
Religion[2]				
Protestant	36	73.5	193	67.3
Catholic	11	22.5	42	14.6
Mixed	2	4.0	50	17.4
Participative Government[3]				
Elections	9	22.0	84	29.3
Institutionalized Burgher Representation	24	58.5	132	46.0
Guild Participation	25	61.0	105	36.6

Table 5: City Characteristics in Sample and Reference Universe.

Analysis

Revenue Expansion During the Long Sixteenth Century

The ability to raise public revenues consistently without defaulting or causing revolt is a marker of a successful polity. German cities proved to be able to do this throughout the early modern period. Their revenues remained stable at levels of around five grams of gold per capita[4] throughout the late thirteenth up to the mid-sixteenth century (see Figure 1). This is comparable in size to per capita revenues

[2] For two cities in the reference universe, data on religious affiliation was unavailable.
[3] Note that the numbers and percentages are not meant to be added up since towns can be classified to have none, one, two or all three of the characteristics listed here.
[4] All reported values are nominal.

in France and Britain in the seventeenth and eighteenth centuries (see Dincecco 2009: 62ff). While still trailing behind the most fiscally advanced polity of this era, the Netherlands, this level of per capita revenue shows the sophisticated nature of urban government in pre-industrial Germany.

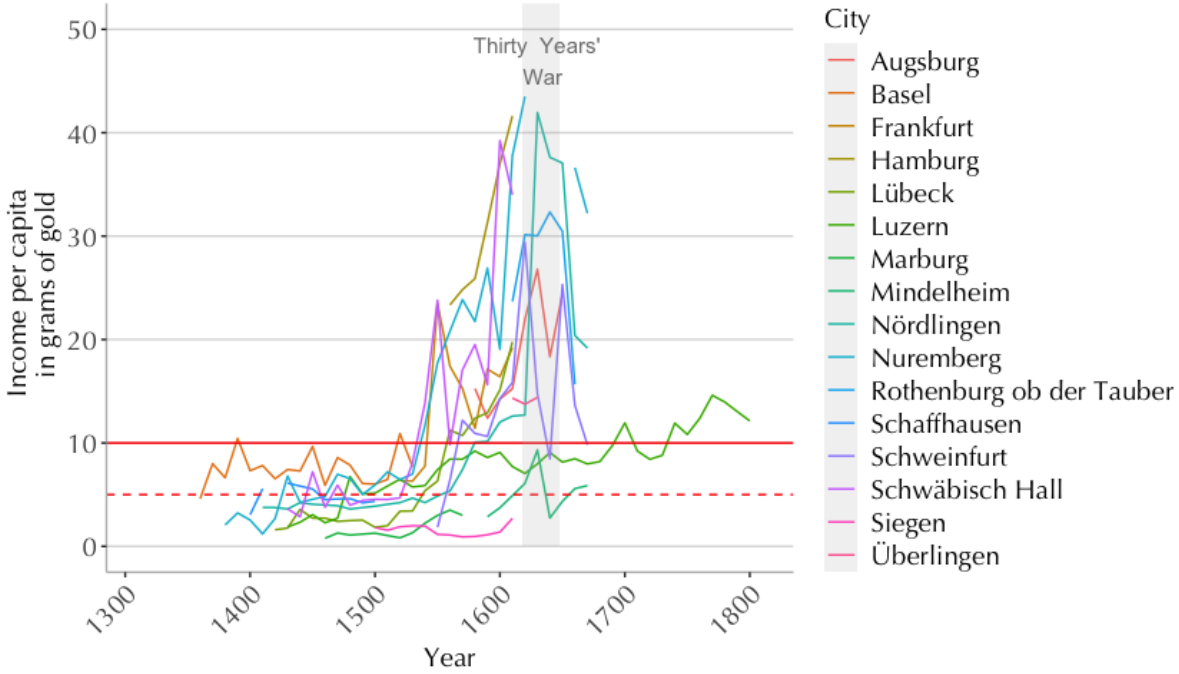


Figure 1: Per Capita Income in Grams of Gold, 1300-1800.[5]

From 1550 onwards, per capita revenues started rising considerably above five grams of gold. The rise accelerated at the turn of the century and throughout the Thirty Years' War (1618-1648) when per capita revenue reached heights of 20 to 40 grams of gold. This is comparable even with revenues in Holland in the eighteenth century (Dincecco 2009). However such a high level of per capita revenues could not be sustained after the war.

Cities: The First Tax-Based Economies

How did cities raise such large sums? There were three ways to raise money: taxation, credit and public entrepreneurship[6]. Taxation could be either direct, that is wealth taxes levied on property, or indirect, that is consumption taxes levied on

[5] For most cities, gold conversion rates could only be obtained until 1670. This is a work in progress.
[6] Cities also generated income from fees and fines, but these were often negligible sums.

goods. Credits were obtained by selling annuities to citizens and foreigners. Public entrepreneurship involved the management of mills, sawmills and kilns.

Cities generated most of their income from taxation. Both direct and indirect taxation made up between 25 and 50 percent of annual income in most years (see Figure 2). Credit only provided 12.5 percent of income on average[7] (see Figure 3). However, the dominant income source varied considerably over time. While income from direct wealth taxes made up almost half of cities' budgets in the early fifteenth century, this share declined to about one quarter throughout the century and even further to 14 percent around 1550. Afterwards, its share rose again and during the Thirty Years' War direct taxes were the dominant income source once again. In contrast, income from indirect taxation remained stable throughout almost the entire period and provided between one quarter and one third of all income. The shortfall in wealth tax income in the sixteenth century was only partially made up by indirect taxation but mostly by credit.

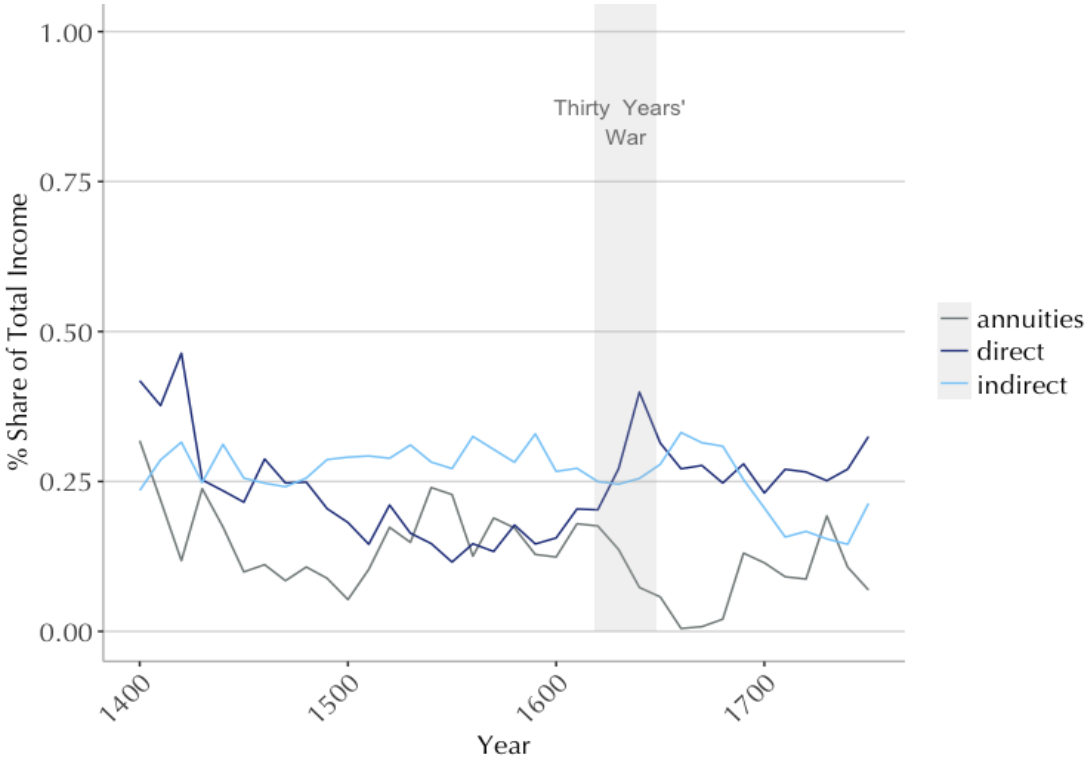


Figure 2: City Revenues by Source of Income, 1400-1800.

[7] This result may seem surprising given that previous scholarship has highlighted the high share of credit income (see Fuhrmann 2003). However, while there were years in which credit income made up almost half of all income (see Figure 3) this was often followed by years in which no or few annuities were issued.

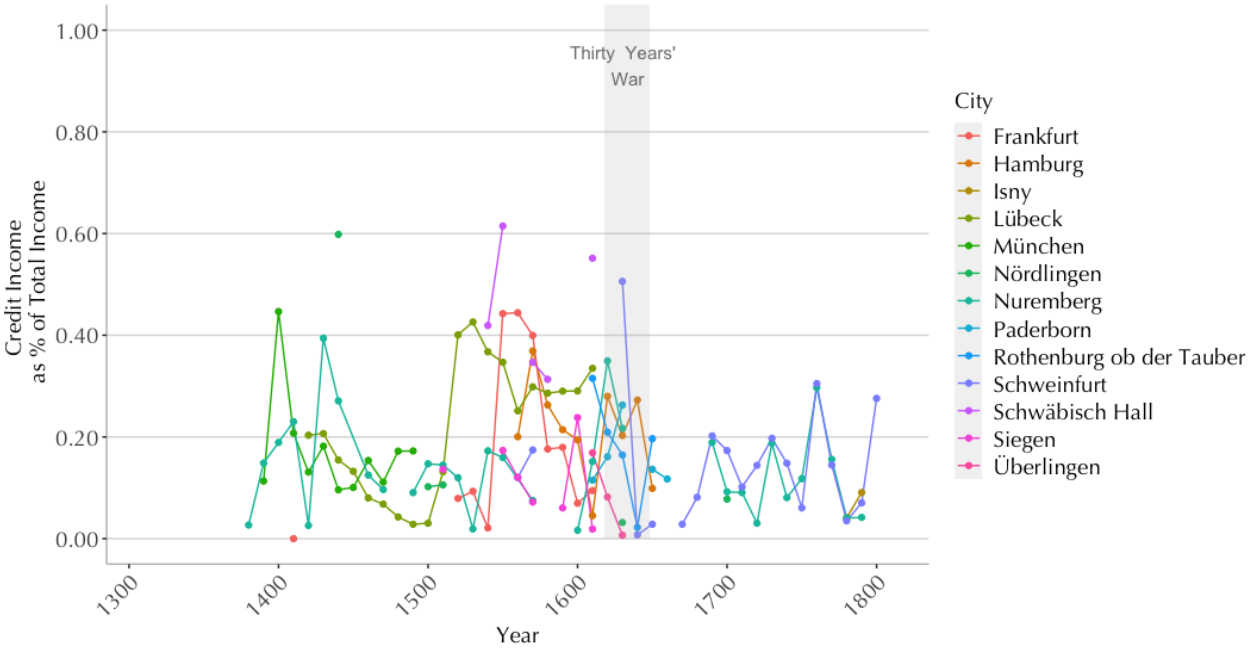


Figure 3: Credit as Share of Total Income, 1390-1800.

Raising Credit and Servicing Debts

Successfully raising credit was difficult in the pre-industrial period. Powerful creditors, such as kings, often defaulted on their credits, leaving the borrower with little or nothing (see e.g. Drelichman & Voth 2014, North and Weingast 1989). Therefore, interest rates were often high. High interest rates in turn imply that much of the income generated is needed to service existing debt.

Figure 4 shows that German cities spent a considerable share of their expenditure on servicing debt. Most cities spent more than ten percent of their annual expenditure on debt servicing with many spending between 20 to 40 percent. Nuremberg stands out as its debt payments surpass 70 percent in certain years.

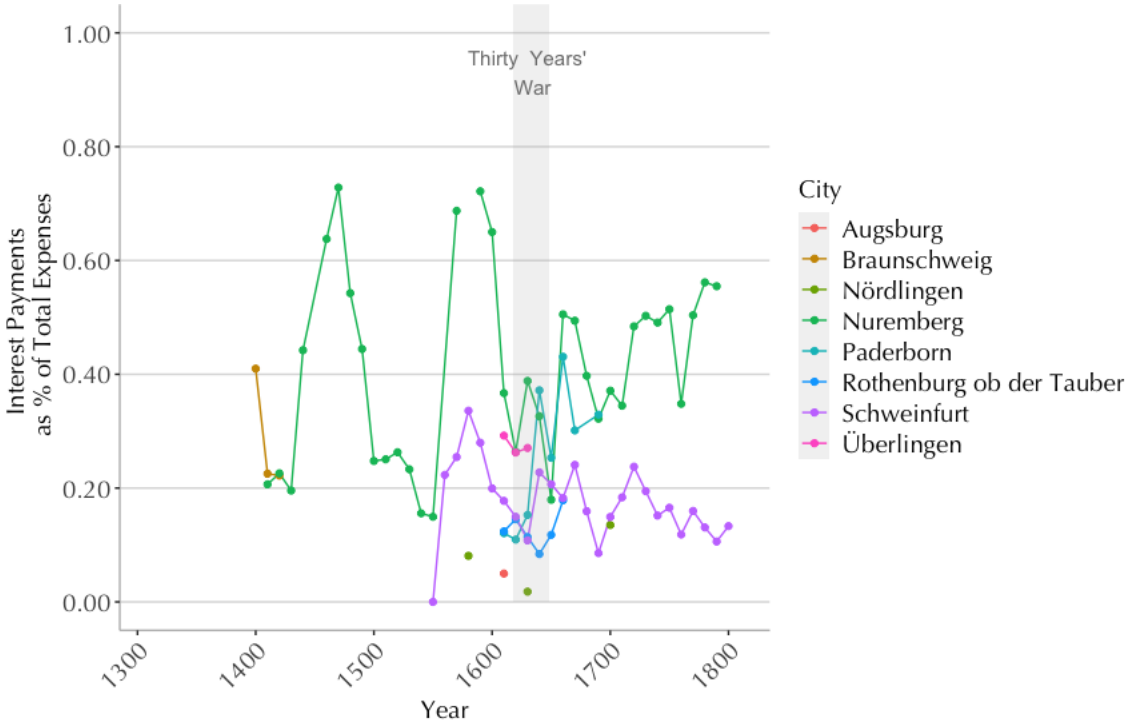


Figure 4: Interest Payments as Share of Total Expenditure, 1400-1800.

Rising Inequality Due to Credit and Consumption Taxes?

Indirect taxation on consumption goods, in particular on basic foodstuff, weighed more heavily on the poor than on the rich. In contrast, wealth taxation, although not progressive, was fairer because it taxed a wide variety of wealth including financial wealth and luxury goods. Financial wealth, such as annuities (the main source of urban credit), was mostly purchased by the middle and upper class, who thereby became the creditors of the city. Therefore, the rise in indirect taxes and credit during the sixteenth century could have been a contributor to the rising urban inequality observed during this time (see Figure 5).

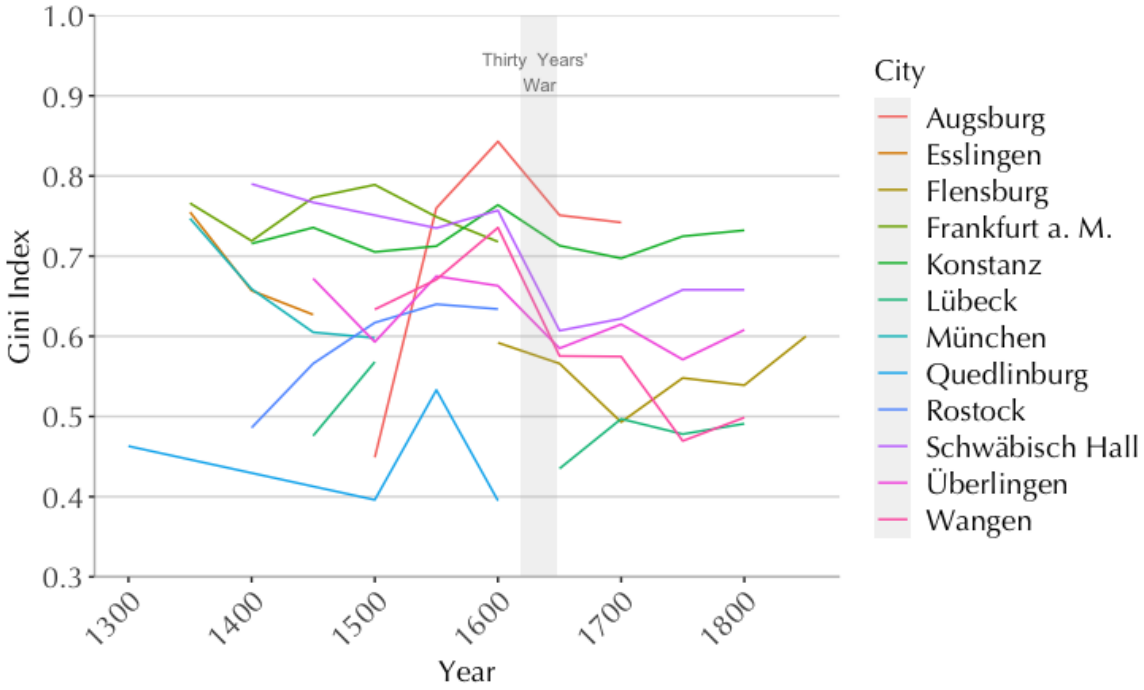


Figure 5: Gini Indexes in German Cities, 1300-1800. *(source: Alfani et al. 2022)*

Indeed, if we plot the share of direct and indirect taxes in relation to the Gini index for each city, we find that cities with a higher share of their income deriving from direct taxes to have lower Gini indexes, while cities with a higher share of their income deriving from indirect taxes to have higher Gini indexes (see Figure 6). The Spearman correlation index confirms these observations as significant at the one percent level. This does not prove causation, of course, and one would need to control for city size and trading activity to identify the causes more convincingly.

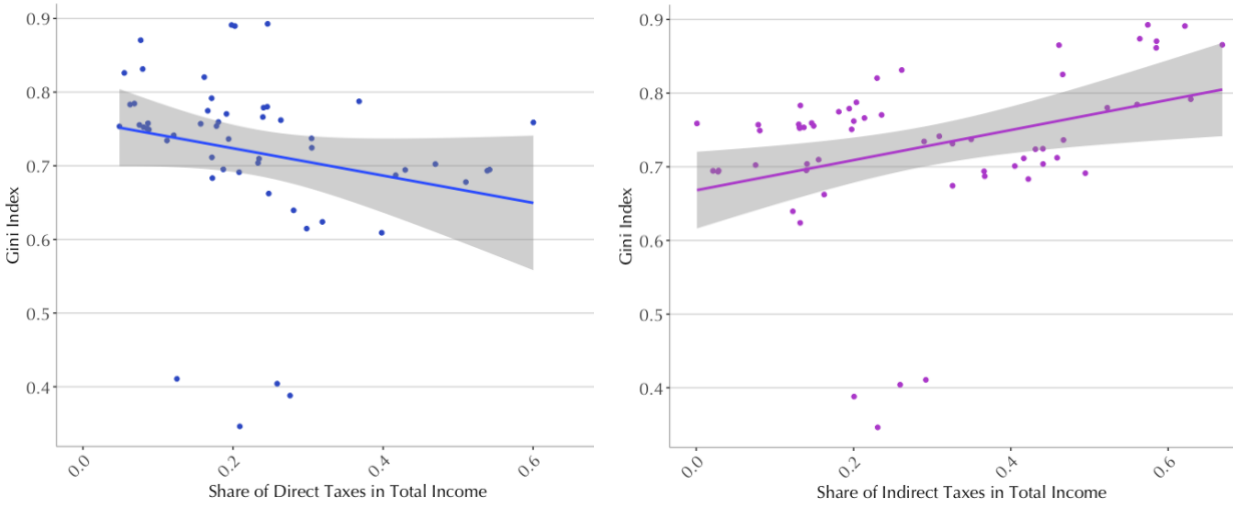


Figure 6: Correlation between Gini Index and Direct and Indirect Tax Shares *(source: Gini indexes from Alfani et al. 2022)*

The increasing tax pressure from consumption taxes during the sixteenth century was likely due to a rise in their number and rates. In contrast, wealth taxes declined in number and in rates until at least 1550 (see Figure 7). Tax rates dropped from an average of 1.25 percent in 1400 to a mere 0.57 percent in 1500. During the early years of the Thirty Years' War, however, the rates increased rapidly again to about 0.75 percent. These trends explain the declining share of direct taxation in the overall budget until 1550 and the subsequent rise shown in Figure 3.

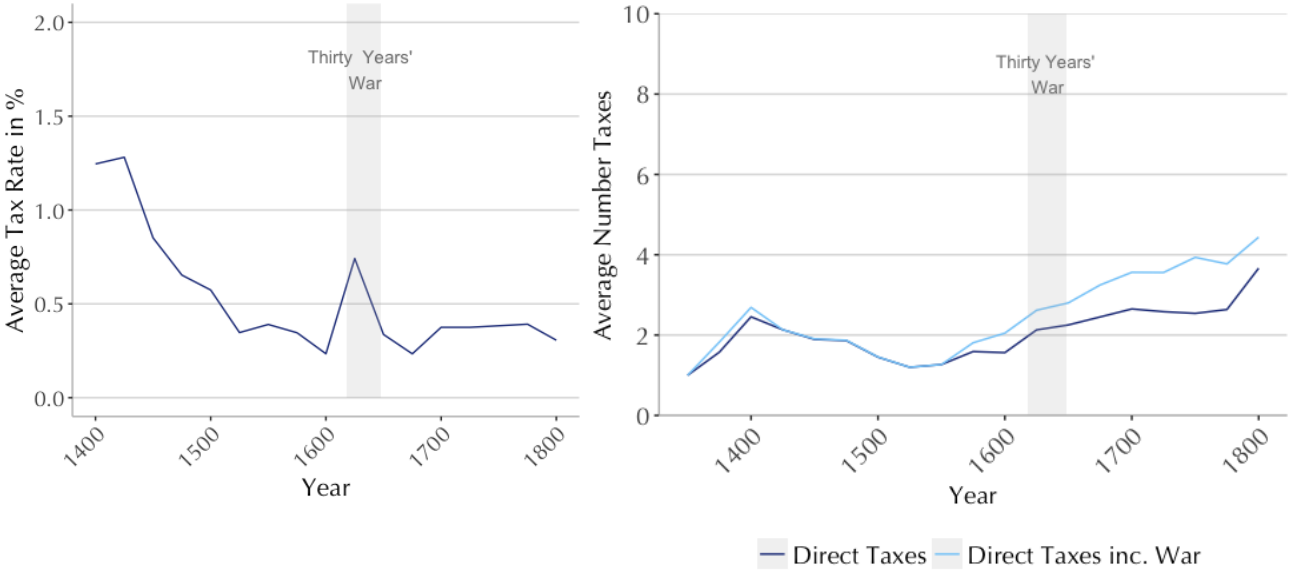


Figure 7. a) Average annual wealth tax rate, 1400-1800. b) Number of direct taxes, 1400-1800.

City Expenditure: Interest, Construction and Warfare

Whether fiscal extraction is driving inequality also depends on how public revenues are being spent. The public construction of granaries, hospitals, schools and infrastructure can be classified as welfare-enhancing and likely inequality-reducing. In contrast, the construction of representative buildings, elite banquets and the payment of creditors and predatory noblemen can be classified as detrimental to citizen welfare. Warfare and defense spending cannot be neatly classified as it can be both: protection from destruction and death is welfare-enhancing, but extensive redistribution from the citizenry to soldiers and generals

is welfare-destroying. Moreover, the extent to which a war involves elites and disrupts the economy is crucial.

German cities mostly spent their money on construction and interest payments (see Figures 4 and 7). Only with the onset of the Thirty Years' War did military expenditure dominate, making up between 20 to 60 percent of total expenditure (see Figure 8). One explanation would be that public construction was largely defense spending, including city walls, barracks and arsenals, but Figure 9 shows that military construction made up only a small percentage of all urban construction throughout the entire period. Instead, there was a boom in private and administrative buildings in the sixteenth century and again between circa 1675 and 1750. Expenditure on city administration and schools remained below 10 percent of total expenses in most years, with perhaps a slight increase over the seventeenth and eighteenth centuries (see Figures 10 and 11). In sum, this suggests that fiscal extraction had largely inequality-increasing effects.

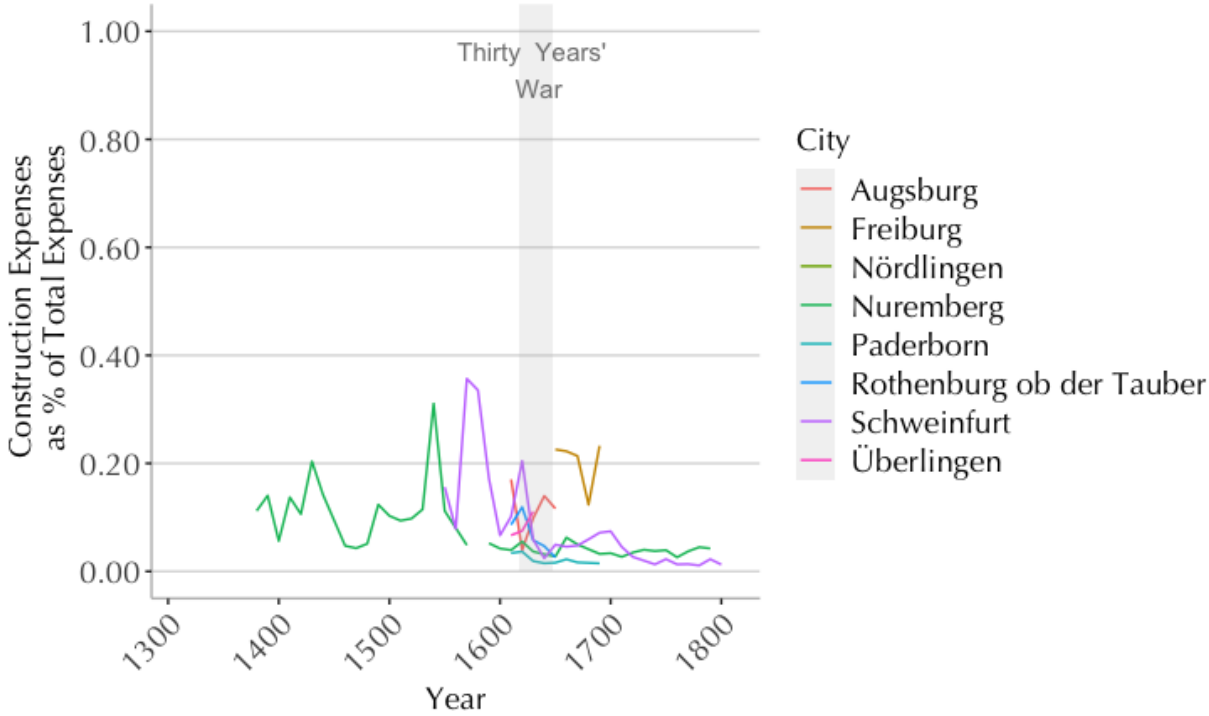


Figure 7: Relative Expenses on Construction, 1390-1800.

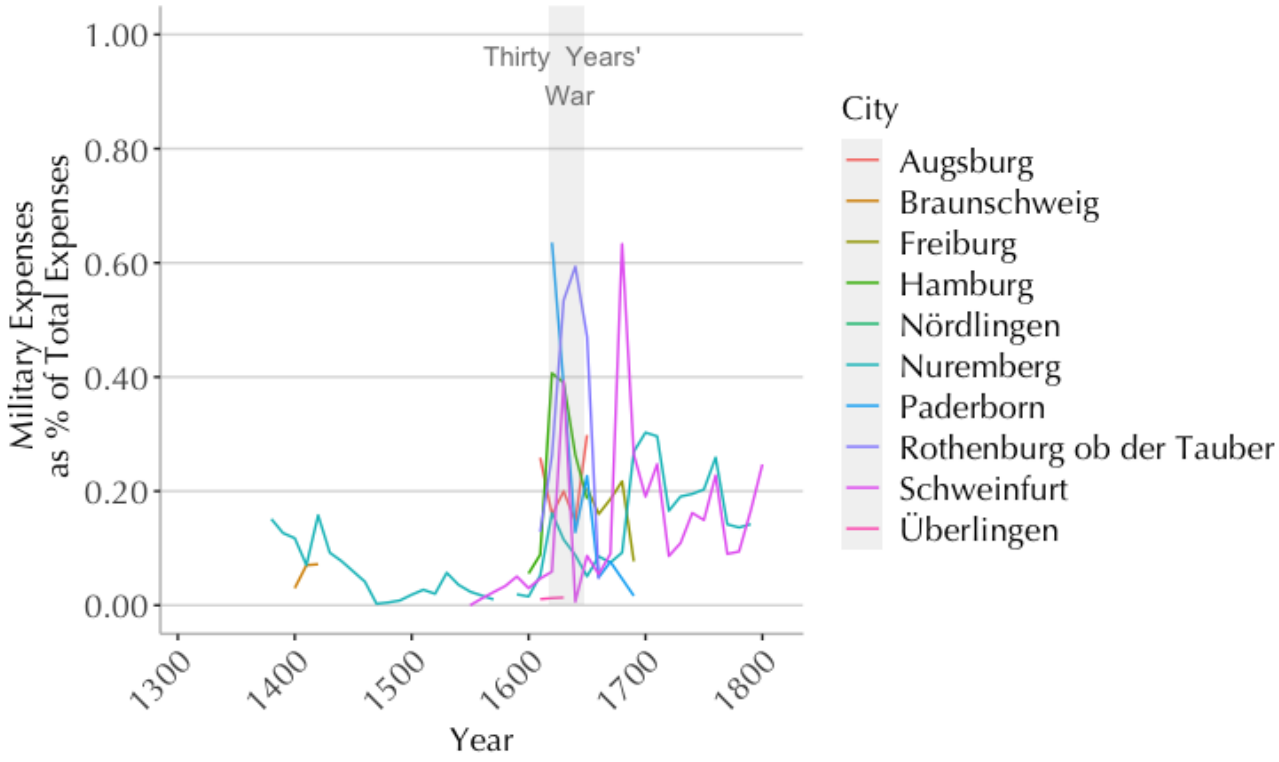


Figure 8: Relative Expenses on Military, 1400-1800.

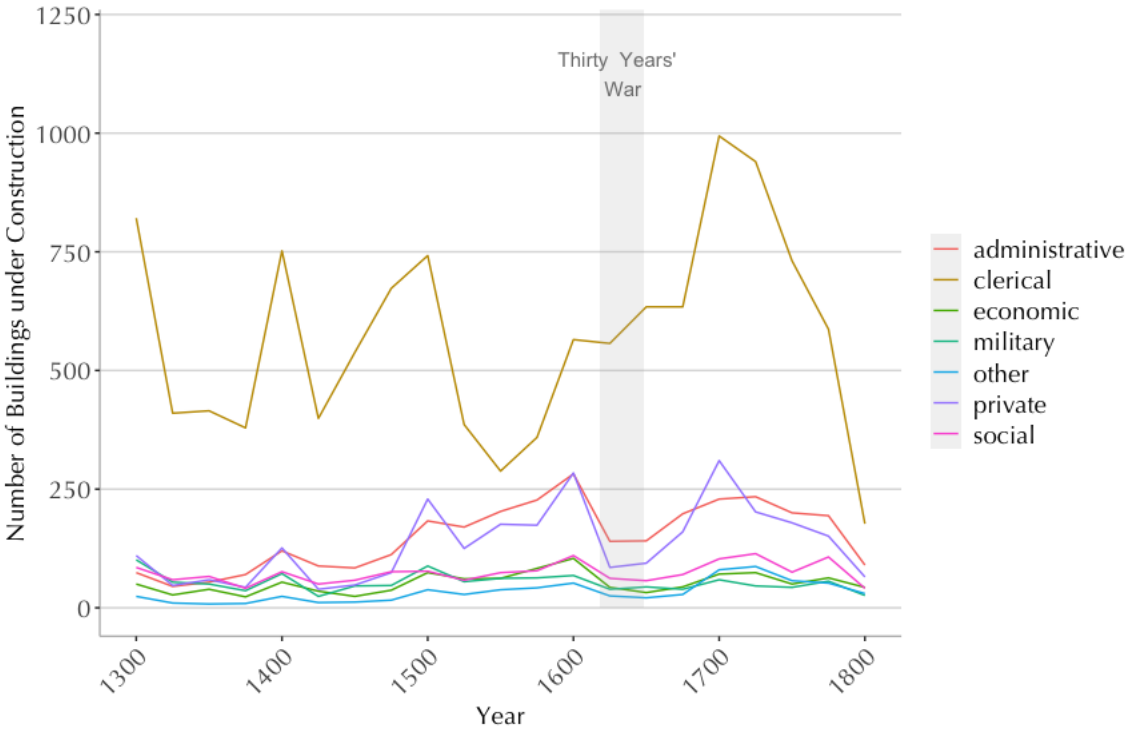


Figure 9: Construction in 2,300 Cities in the Holy Roman Empire, 1300-1800. *(source: Cantoni et al. 2019).*

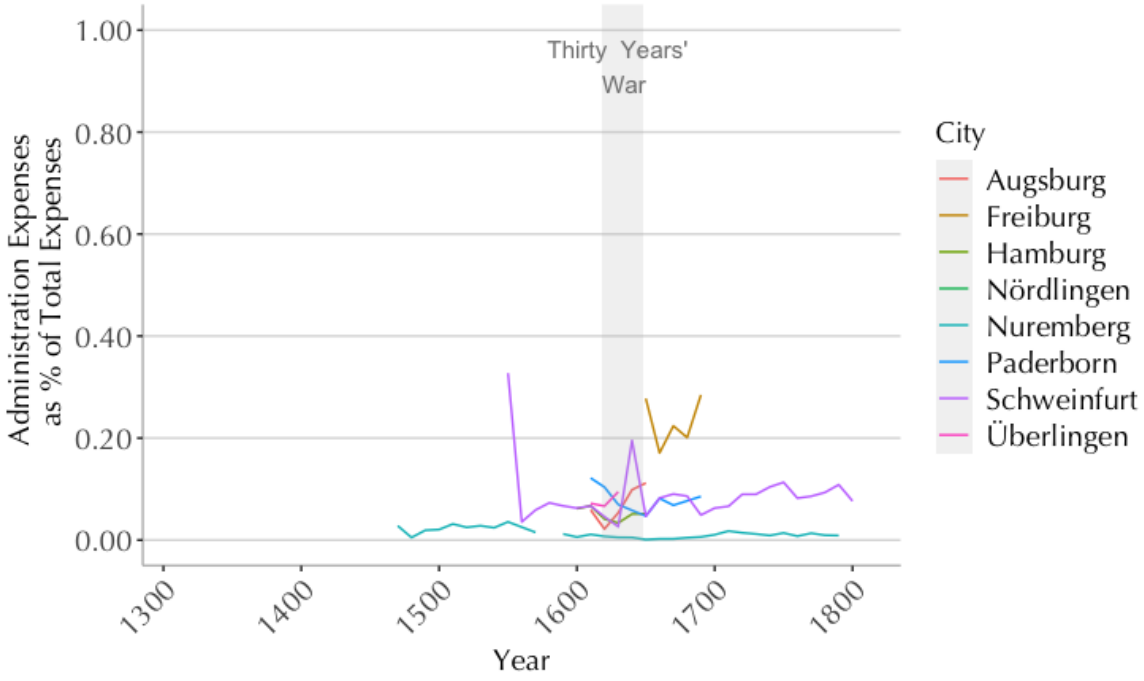


Figure 10: Relative Expenses on Administration, 1470-1800.

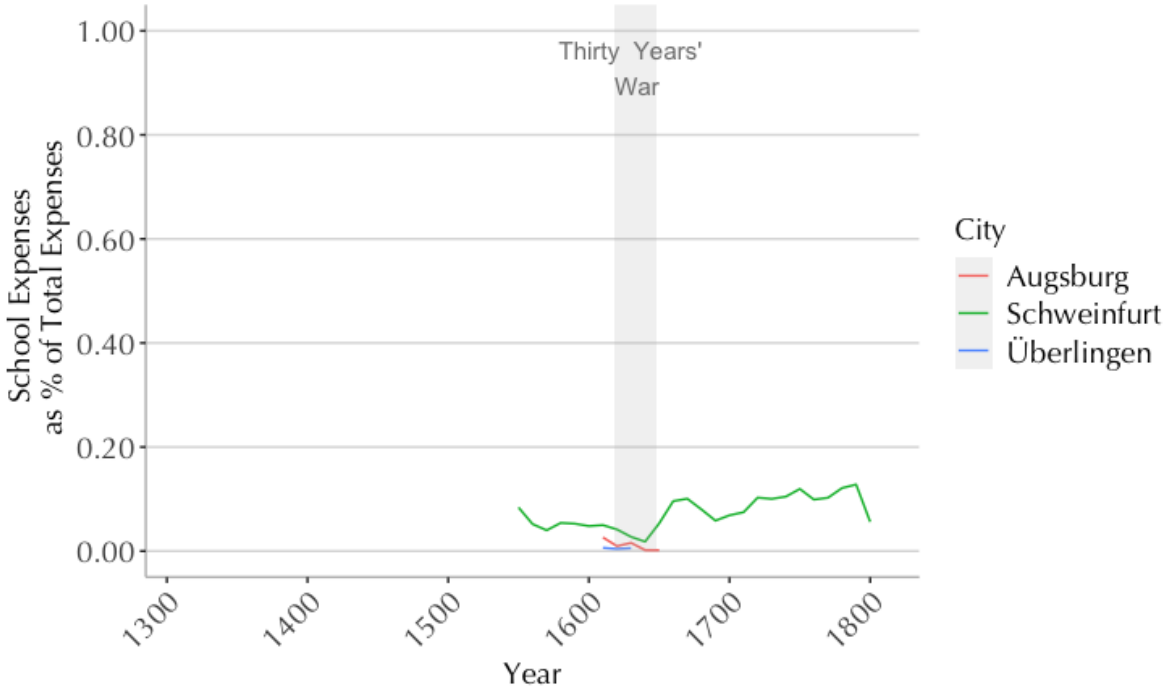


Figure 11: Relative Expenses on Schools, 1550-1800.

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