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ANATOMY OF A PREMODERN STATE[1]

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Abstract

We provide a blueprint for constructing measures of state capacity in premodern states, offering several advantages over the current state of the art. We argue that assessing changing state capacity requires considering the composition of revenues, expenditure patterns, and local-level budgets. As an application, we examine the case of Portugal (1367–1844). Our findings demonstrate that throughout most of this extended period, Portugal maintained comparatively high fiscal and legal capacities. This challenges claims that Portugal's economic decline from the second half of the eighteenth century was due to low state capacity.

Keywords: state capacity, fiscal capacity, premodern economic growth, Portugal

JEL codes: H20, N43, O23.

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1. Introduction

State capacity is a proximate cause of why some societies have better economic performance than others (Besley and Persson 2011; Dincecco 2017). The insight that countries with states lacking the ability to collect resources and convert them into public goods fail to develop has been confirmed in a variety of historical studies.[2] Nevertheless, measuring state capacity for premodern economies is not trivial, especially when data limitations are severe. Our paper serves two main goals. First, it proposes new measures for comprehensively measuring historical state capacity, expanding the pathbreaking comparative work by Karaman and Pamuk (2010, 2013). Second, it illustrates the gains of the proposed methodologies by analyzing the case of Portugal.

Research on historical state capacity is typically based on shortcut methods in which the key variable is studied via a proxy: fiscal capacity, as represented the volume of state revenues (Karaman and Pamuk 2010, 2013, Brandt et al. 2014). Leaving aside the issue of the deflators used for now, fiscal capacity does not necessarily translate into high state capacity for three reasons.

First, while aggregate revenues are an understandable choice, the composition of the revenues also matters. In fact, as Bonney (1999, p. 10) hints, states financed by resources raised primarily outside their territory had lower incentives for state-building in the homeland. In such a setting, the argument goes, states whose finances relied on tribute or colonial revenues rather than on taxes are marginally less prone to create genuine state capacity.

Secondly, and more importantly, the size of the budget is not a reliable proxy because expenditure can instigate very different outcomes: states can use revenues to build further palaces or appoint more judges. Historically, rising fiscal capacity is often explained by increasing military involvement. European military confrontation of the late seventeenth and eighteenth centuries led states to increase their revenues (O'Brien 1988; Brewer 1988; Parker 1996). There is, thus, no good reason to believe that this translated into better access to public goods or state services if most of the additional revenues were used to pay for luxuries such as palaces. In sum, high fiscal capacity does not

[2] Key references include Epstein (2000), O'Brien (1988), Brewer (1988), Besley and Persson (2011), and Karaman and Pamuk (2010, 2013).

necessarily imply high legal capacity. As such, expenditure patterns are essential for measuring actual state capacity.

Likewise, no historical analysis of state capacity can be made without close consideration of a typically neglected agent, which was a major provider of public goods: local governments. Being closer to the populations they purported to serve, local authorities, although not formally accountable, had to deal with tighter budget constraints and closer scrutiny. Despite the small size of their budgets, municipal governments were a considerable builder of state capacity in their role as providers of public goods. Given their higher level of accountability relative to the central state, municipal decisions in taxation and spending potentially enjoyed a higher degree of legitimacy.

Only after addressing these four issues – the non-coincidence of the measures of fiscal and state capacity, the composition of revenues, the pattern of the expenditure, and the role of local governments – it is possible to design a more comprehensive methodology for measuring and comparing historical state capacity. This paper addresses these issues by building more robust measures of state capacity, which have several advantages over the current state of the art. We concentrate on Portugal as a case study to illustrate the insights that can be gained from considering a set of measures that go beyond the conventional option of using only central government revenues per capita deflated by nominal wages, as in the pioneering work of Karaman and Pamuk (2013). Absent from the existing fiscal capacity comparisons (Karaman and Pamuk 2013), the case of Portugal illustrates some limitations of the currently existing methodologies. Our analysis of this case will also test the oft-repeated claim that Portugal was beset by low state capacity and, accordingly, condemned to a dismal economic performance (Justino 1986; Tilly 1992, Hespanha 1994, 2013; Yun-Casalilla 2019). Allegedly, this problem stemmed from the Portuguese Crown's dependence on colonial revenues and consequent, lack of incentives to tax and, hence, build up its fiscal capacity, like in today's oil-exporting countries (Tilly 1992, p. 21, 62).[3] Such statements, however, are still to be tested systematically using the full range of available sources over time.

[3] Tilly's claim rests on assumptions about the size of colonial revenues which do not correspond to the historical record. The empire in fact had a marginal weight in Portugal's economy during the sixteenth century (Costa et al., 2015), even though it was important for state revenues during part of that century. See Henriques (2009) and Costa et al. (2015) for evidence which contradicts Tilly's claims with respect to Portugal. The outcome predicted in Tilly's argument (i.e., that Portugal lacked representative institutions, except the "Lisbon municipality") is also factually incorrect (Henriques and Palma 2023), although

In this paper we build a new historical database, including data on expenditure patterns and on the size and role of the municipal governments, from the earliest aggregate data to the mid nineteenth century. We also include data on the share of imperial revenues. With this data, we show that the comparative evidence does not support the interpretation that Portugal (comparatively) lacked fiscal capacity until the nineteenth century. Likewise, we show that imperial revenues only mattered for state finances during some specific periods. Our analysis also indicates that legal capacity increased over time as expenditure patterns evolved towards the provision of public goods. Finally, we show that local governments had a complementary role in building up overall fiscal capacity but their resources were more oriented towards the improvement of legal capacity. Since Portugal did not lack state capacity, the fundamental causes for its eventual development failure must lie elsewhere.

2. Measuring Leviathan

Weak states fail to create conditions for development.[4] States needed revenues to provide public goods such as national defense and courts, which in turn contributed to internal stability and market development. The symbiotic relationship between fiscal capacity and growth laid out by Epstein (2000) indicates that "in Europe more power seems to have allowed central governments to promote economic change and market integration" (Bogart et al. (2010, p. 94).

In Western Europe, fiscal capacity substantially increased over the early modern period and, through it, this region markedly diverged from the rest of Eurasia, notably Poland, Russia, the Ottoman empire, and China (Brandt et al., 2014, pp. 70–1, Karaman and Pamuk 2010, 2013). In the mid-seventeenth century, Netherlands and England attained higher levels of fiscal capacity than the other Western European powers (except for the small Republic of Venice). Which of these paths did Portugal tread?

Portugal eventually faced a resource curse, but only in the eighteenth century in the context of large inflows of Brazilian gold, but not because of colonial revenues proper (Palma 2020; Kedrosky and Palma 2024; see also our Appendix A1 and A2).

[4] See Schumpeter (1918, 1934), O'Brien (1988), Brewer (1988), Rosenthal (1990), and Epstein (2000) for foundational contributions to the state capacity literature, and Dincecco (2017), Besley and Persson (2011) and Johnson and Koyama (2014, 2017) for more recent contributions. The "weak state" view of development failure has been proposed for many regions such as historical Spain (Grafe 2012), Poland (Malinowski 2019), the Ottoman Empire (Karaman and Pamuk 2010, 2013), and China (Brandt et al., 2014). For contrary evidence in the case of Spain, see Marichal (2007) and Cermeño and Santiago-Caballero (2020).

Cardoso and Lains (2010, p. 251) concluded that "[i]n the beginning of the nineteenth century Portugal … [had] a relatively weak state." This claim was built on a long tradition that analyzed early modern Portuguese finances (Godinho 1978; Hespanha 1994; Silva 2004; Carrara 2011; Oliveira 2013; Hespanha 2013). These analyses saw as the major shortcomings of the fiscal system the rigidity of the tax structure, which had to be compensated by a structural reliance on the empire and on revenues from the country's intense maritime trade (Hespanha 1994, p. 142–3; Silva 2004, p. 246). Relying on few, and contradictory, international comparisons (Silva 2004, p. 240; Hespanha 2013), the influential historian A. M. Hespanha went on to claim that Portuguese fiscal capacity was one of the lowest in Europe (Hespanha 2013, p. 29).[5]

Much of the literature considers that at the heart of Portuguese state stood an overreliance on colonial revenues going back to the sixteenth century; its wealth constituted a disincentive to develop a functional tax system (Tilly 1992, p. 62; Yun-Casalilla 2019, p. 262). For example, Tilly (1992, pp. 124–5) writes that "Spain and Portugal escaped the civilization of government by drawing on colonial revenues for a major share of military expenditures … Spain and Portugal anticipated … the situations of many contemporary Third World states in which military men hold power." Likewise, Yun-Casalilla (2019, pp. 36, 48, 261–2, 401), writing about Portugal until the early seventeenth century, claims that vast imperial revenues took away incentives for developing a tax state.

In this paper we expand the analysis of Portuguese state revenues to include a wider timespan from the earliest reliable quantitative data (Henriques 2009) to the period in which the liberal regime struggled to create a new fiscal system (Cardoso and Lains 2010). Like our predecessors, we cannot draw from complete series, but rather from a few benchmark years for which there is a comprehensive account of the revenues. The type of sources that we use for the numerator, concerning central government revenues, is illustrated in Figure 1. After a considerable effort in source collection and source criticism, it was possible to include a few additional data points from the early modern period, unknown by the authors mentioned. We also distinguished between imperial and non-imperial revenues and include this distinction in our analysis.[6]

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[5] According to Hespanha (2013), the royal claims of being "absolute" monarchs were at odds with the instruments at the disposal of the monarchy.
[6] See the Appendix for a detailed explanation of the criteria and methods used for this distinction.

Figure 1. The 1526 *estado da fazenda*. Each of these records contained the assignment of the ordinary expenditure in the predicted revenues for a fiscal year. This is one of the earliest surviving originals. The folio shown lists redistributive payments to be made by the crown. Reproduced with permission. The original is in *Arquivo Nacional da Torre do Tombo*.

In Table 1, we compare Portuguese fiscal capacity since 1369 with the now-familiar measure developed by Karaman and Pamuk (2013): day wages for unskilled workers.[7] We also expand their dataset for the period 1350-1500, for England and France, for which good data exist,[8] as well as Portugal. Deflated by per capita wages, Portuguese fiscal capacity appears comparatively high. If we refer to the 1750–1799 period, when the Little Divergence was already well advanced and for which we can compare the whole panel, Portugal had a seemingly robust comparative fiscal capacity.[9] In the eighteenth century, imperial revenues allowed for a fiscal capacity inferior only to the Dutch Republic. Even without the empire, Portugal's fiscal capacity would have been on the

[7] In the cases when taxes were collected via tax farming, we are counting the value of the contract, i.e., what was received by the Crown (i.e., we do not include the margin for the tax farmer). The income tax (*décima*) was not collected via tax farming. In Appendix A, we discuss the nature of the sources in detail, as well as our methodological choices, including the definition of which revenues count as imperial.

[8] For Spain, this was not possible for these dates as the revenues of its dominant state (Castile) were denominated in *maravedis*, whereas price and wage series are from Aragón and denominated in the local *dineros*.

[9] In the second half of the nineteenth century, which we do not cover in this paper, Portugal did have a low level of comparative fiscal capacity in a European context. Fiscal revenues were only 3.5% of GDP in 1851-1859 and 5% in 1890-99 (Esteves 2005).

level of Spain, France, and Austria and well above the Eastern empires.[10] The Portuguese high fiscal capacity was not, like Prussia for instance, the result of a steep rise in overall revenues. Instead, the pre-1500 observations show that this was a structural feature of the country since the fourteenth century, when the country became a 'tax state' (Henriques 2014), following the taxonomy created by Bonney and Ormrod (1999).

Table 1. Per capita government revenue in day's wages for unskilled workers, 1350-1850

	Dutch Republic	Portugal (with empire)	Prussia	Venice	England	France	Austria	Portugal (without empire)	Spain	Russia	Ottoman empire	Poland-Lithuania	China
1350-99	-	6.1	-	-	3.4	1.0	-	6.1	-	-	-	-	-
1400-49	-	2.5	-	-	3.4	0.7	-	2.5	-	-	-	-	-
1450-99	-	6.8	-	-	3.9	1.0	-	4.6	-	-	-	-	-
1500–49	-	9.4	-	10.4	1.5	2.6	-	4.4	3.0	-	-	0.8	-
1550–99	-	7.3	-	9.5	2.7	3.2	-	4.3	4.0	-	1.7	0.4	-
1600–49	12.0	8.4	-	7.5	2.6	3.0	-	5.5	7.2	-	1.4	0.5	-
1650–99	13.6	8.1	2.0	10.6	4.2	8.0	2.6	7.8	7.7	-	1.7	1.3	-
1700–49	24.1	13.6	6.6	12.7	8.9	6.7	6.3	10.2	4.6	4.4	2.6	0.6	2.3
1750–99	22.8	14.8	14.1	13.2	12.6	11.4	11.3	11.2	10.0	7.6	2.0	1.7	1.3
1800–49	-	13.0	-	-	13.5	14.3	10.2	12.7	8.6	6.2	5.0	-	1.2

Sources: For China, Brandt et al. (2014, p. 69); for pre-1500 England, revenues from Ormrod (n.d.), Hunt and O'Brien (n.d.), nominal wages from Clark (2005), and population from Broadberry et al. (2015); for pre-1500, France nominal wages and population from Ridolfi and Nuovolari (2021) and revenues from Bonney (s.d.), Chaunu (1977), Grummitt and Lassalmonie (2015), Guéry (1978), Hamon (2011), Lassalmonie (2002) and Rey (1965). For all others except Portugal, Karaman and Pamuk (2010), with 1500–1799 data presented in 50-year rather than 10-year intervals, following Brandt et al. (2014). We have updated Russia, and added 1800–49 values using data kindly provided by Kivanç Karaman. Portugal's fiscal revenues are from the present paper (averages within periods). Portugal's population until 1527 from Henriques (2023) and 1527–1849 from Palma et al. (2020). The sources for Portuguese revenues and methodological details are given in detail in Appendixes A and B.

Note: the columns are ranked according to the level of fiscal capacity in the 1750–1799 period.

Table 1 illustrates, however, some limitations of using the nominal wage to deflate revenues. England's fiscal capacity, in particular, appears lower in the second half of the seventeenth century, when parliamentary legitimacy allowed for increased volume and scope of taxation and economic growth and structural change occurred (Broadberry et al., 2015; Wallis et al. 2018; Humphries and Weisdorf, 2019; O'Brien 1988), as occurred

[10] Throughout we consider gross national revenues since we consider expenditure separately. Insofar as imperial revenues are concerned, however, we consider net revenues after expenses related to the empire were paid, since we account for the empire's additional contribution to the motherland's fiscal capacity.

in the Dutch Republic.[11] England's relatively high—and growing—wages excessively deflate revenues.[12] This suggests the need to consider alternative measures. The well-known "respectability basket" (Allen 2001) as adjusted to local consumption patterns (e.g., Palma and Reis 2019) is not directly affected by forces specific to each country's labor market and, as such, provides a useful alternative. The comparisons using this alternative as deflator are shown in Table 2.

Table 2. Per capita government revenue in Allen respectability baskets, 1350-1850

	Dutch Rep.	England	Portugal (with empire)	France	Portugal (without empire)	Spain	Ottoman Empire	Poland-Lithuania
1350–99	-	3.6%	0.5%	1.2%	0.5%	–	-	–
1400–49	-	4.9%	2.4%	0.9%	2.4%	-	-	-
1450–99	-	4.4%	5.5%	1.4%	3.5%	-	-	-
1500–49	-	2.8%	6.9%	3.4%	4.6%	4.4%	-	0.9%
1550–99	-	4.2%	9.3%	3.2%	5.2%	4.7%	1.8%	0.5%
1600–49	17.8%	3.3%	7.1%	2.9%	4.4%	6.8%	1.4%	0.6%
1650–99	17.9%	5.7%	5.3%	6.4%	5.0%	5.7%	2.0%	1.4%
1700–49	38.4%	16.9%	10.7%	5.8%	8.0%	4.5%	2.5%	-
1750–99	40.3%	20.0%	10.2%	9.5%	8.8%	8.3%	2.5%	-
1800–49	45.5%	26.0%	8.9%	12.4%	8.6%	7.4%	-	-

Sources: for the numerator, Karaman and Pamuk (2013), except for Portugal (this study); for the denominator, Allen (2001); for pre-1500 England, France and Portugal see sources cited in Table 1. Percentages correspond to medians.
Note: the columns are ranked according to the level of fiscal capacity in the 1750–1799 period.

As confirmed by the measures in Table 2, Portuguese fiscal capacity increased from the earliest available observations, in line with the remaining Western powers. In the pre-1500 period, the nascent Portuguese tax state was not as large as England's, while it was fighting the Hundred Years War, but it overshadowed that of France and continued to do so until the nineteenth century (except for the warlike and inflation-plagued 1650-99 period). At any rate, the two tables agree that Portuguese fiscal capacity was well

[11] An alternative to a simple wage would be the wage of public servants such as clerks (*notários de aministração, escrivães*). But we opted not to use these as an alternative because their income, in addition to a salary, included many benefits (*propinas*) which varied widely across the country and could exceed the salary by more than 40%.
[12] England's nominal wages were particularly high by international standards, especially from the second half of the seventeenth century (Allen 2001). Using a different methodology and focusing on annual wages, Humphries and Weisdorf (2019) find evidence of persistent growth of English wage income from the mid-seventeenth century.

within Western European levels. The empire did contribute to reinforce Portuguese finances but, even if imperial revenues faltered, fiscal capacity would be at reasonable levels.

Analyses based on commodity baskets also have some shortcomings, as these are affected by relative prices that can lead to underestimating the fiscal capacity in the most advanced economies. Thus, in Table 3, we consider the nominal revenues deflated by nominal GDP. Although this is the standard measure for present-day analysis, data for historical periods is harder to come by, as most of the reconstructed national accounts aim at estimating real per capita GDP rather than nominal GDP. The data starts in the 1500s, given that the reconstruction of Portugal's GDP for the period prior to the 16th century is lacking.

Table 3. Central state revenues deflated by GDP, 1350-1850

	Portugal (with empire)	**Portugal (without empire)**	**England**	**France**	**Spain**
1350-99	-	-	2.2%	1.2%	0.2%
1400–49	-	-	1.7%	0.9%	0.2%
1450-99	-	-	1.4%	1.4%	-
1500–49	2.0%	0.8%	2.6%	0.8%	0.9%
1550–99	1.3%	0.8%	1.7%	2.4%	2.4%
1600–49	1.7%	1.3%	1.5%	1.3%	5.1%
1650–99	2.2%	2.0%	2.8%	3.7%	4.9%
1700–49	5.2%	4.1%	5.7%	5.4%	4.7%
1750–99	4.7%	3.6%	6.6%	7.0%	5.7%
1800–49	5.1%	4.5%	11.1%	-	4.8%

Sources and notes: Portugal from the present paper. For England we use the revenue level of 1665 from O'Brien (1988) and the revenue growth indexes from Hunt and O'Brien (1999), deflated by the nominal GDP from Broadberry et al. (2015); data coverage: 1350-1815. Portugal's nominal GDP comes from the nominal GDP index in Palma and Reis (2019), applied to the baseline 1850 value from Reis (2002) data coverage 1527-1844; For France, sources for revenues are cited in Table 1, with nominal GDP from Ridolfi and Nuovolari (2021); data coverage: 1364-1799. For Spain, GDP is from Prados et al. (2022) and revenues from Comin (1988), Ladero (1991), Gelabert (1999), Andrés-Ucendo and Garcia-Lanza (2008) and Dedieu (2014); data coverage: 1370-1842.

Table 3 shows that Portuguese fiscal capacity was not far from the European leaders until the second half of the eighteenth century. This is a result consistent with the qualitative historical evidence (e.g., Brewer 1988; O'Brien 1988). Portugal's central state revenues are also roughly similar with those of Spain and even France until the second half of the eighteenth century.[13] Overall, hence, the viewpoint that Portugal had a relatively high fiscal capacity until at least the early nineteenth century is robust to all three measurements employed here. In the next section we show further details concerning the extent to which Portugal's relatively high levels of fiscal capacity relied on its large overseas empire.

3. The Empire: boon or burden?

The breakdown of imperial versus non-imperial revenues shows that Portuguese relatively high levels of fiscal capacity are not solely explained by the contribution of the empire. Imperial revenues were, nonetheless, important to keep up with England, France and Spain. Table 3 shows that without imperial revenues, Portuguese fiscal capacity would have been considerably lower than that of England. The provocative sobriquet that Francis I of France chose for Portugal's Manuel I (the *roi épicier*, i.e., the "spicer king"; Subrahmanyam 2012) was not entirely misguided as crown revenues of a colonial nature—especially the pepper trade—were a major contributor during the first half of the sixteenth century, as Figure 2 shows. As mentioned, this might have led historians to consider that the overseas possessions underpinned Portuguese government revenues. And yet, this was not the case.[14]

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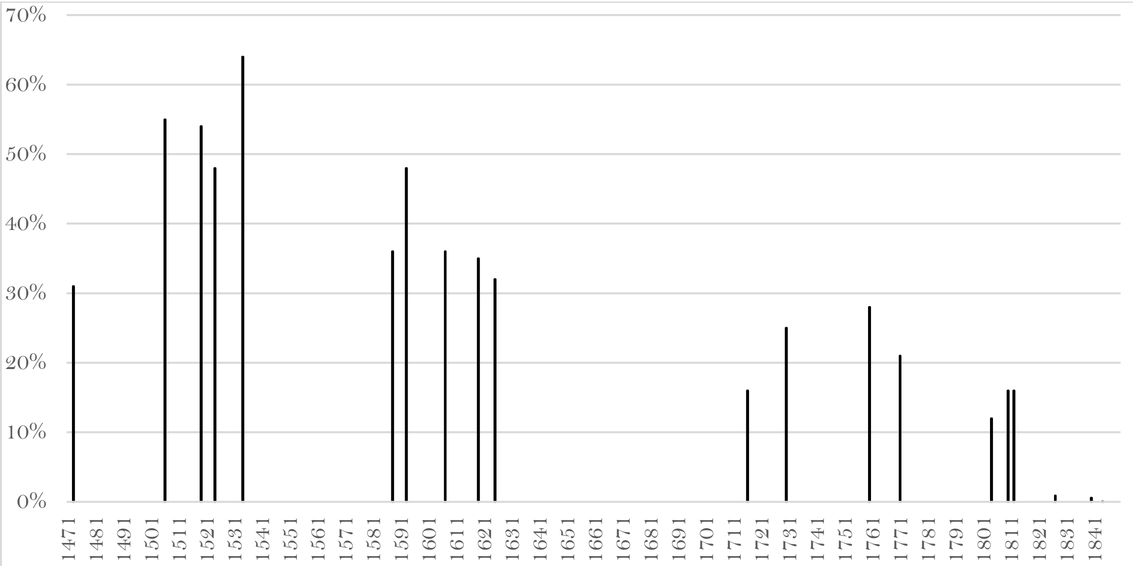
[13] Note that France's relatively high fiscal capacity according to this measure, even by comparison with England's, is not by itself informative about the net spending power of the state, given that pre-revolutionary France much spending was earmarked and assigned to service debt. In eighteenth-century France, local interests disguised as "liberties" meant that an inefficient tax system persisted, and land could not be expropriated so that public goods could be constructed—unlike in England, where parliament had, and exerted, the power to expropriate (Rosenthal 1990; Bogart and Richardson 2011; Cox 2016).

[14] From a comparative perspective, Portuguese fiscal reliance on empire was neither unique nor uniquely large: for example, net transfers from the East Indies accounted for more than 50% of total Dutch government revenues around the mid-nineteenth century (De Zwart et al., 2022).

Figure 2. Imperial revenues as a percentage of central revenues, 1470-1850



Sources: Appendixes A and B.

Note: We are relying on the benchmark years for which there is available empire data. Due to source limitations, imperial revenues for 1681 do not include the Eastern trade, which was then relatively small (Hanson 1981, p. 214). See Appendix A for details.

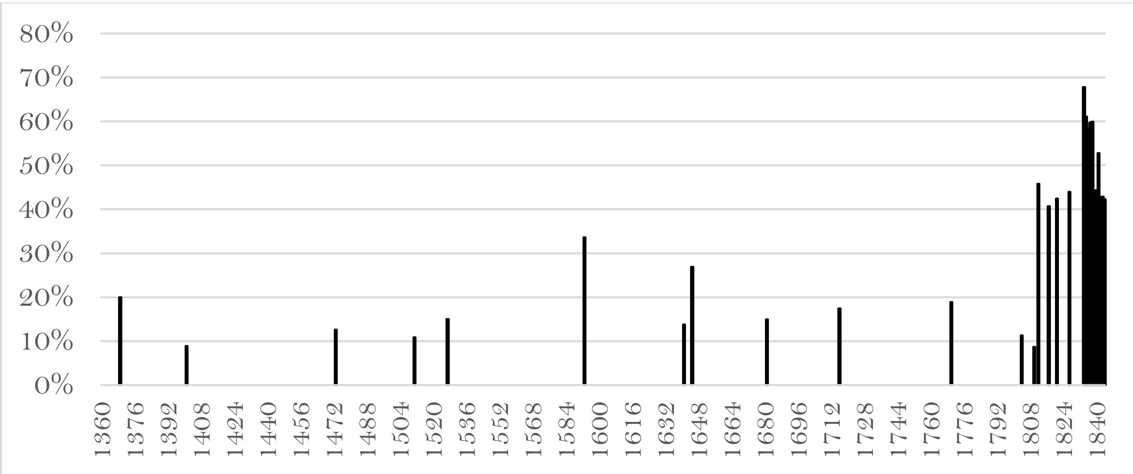
It is also worth noting that the weight of imperial revenues over total central revenues declined over time: from more than 50% in the first half of the sixteenth century to 15% by the early eighteenth century (see Figure 2). The share increased to around 25% in the middle decades of the eighteenth century, but then decreased again to 10–15% by the early nineteenth century. This evolution contradicts the claim that the imperial expansion arrested the development of the domestic fiscal system (Tilly 1992; Amaral 2012).[15] Permanent, kingdom-wide, universal taxes like the *sisas* (from 1387 onwards) and the *décima* (from 1641 onwards) testify that the central government was able to create a tax state (Henriques 2014; Silva 2004), not to mention increasing fiscal pressure under foreign rule (1580–1640). It should be noted that the large relative importance of imperial revenues with respect to total central state revenues in the sixteenth century was not indicative of the total size of overseas trade over time, which was only large relative to the size of Portugal's economy during the eighteenth century (Costa et al., 2015).

[15] As noted by Amaral, Portuguese historiography typically insists that "[During] the Portuguese *Ancien Régime* … [T]he largest share of the Crown's income originated outside the economy of metropolitan Portugal" (Amaral 2012, p. 30; see also pp. 36–38).

The fiscal capacity of Portugal did not entirely rest on colonial revenues and monopolies. Since the late fourteenth century, the Portuguese state obtained three-quarters of its revenue from domestic sales taxes (Henriques 2009). Even though this situation changed briefly during the sixteenth century, when colonial revenues crept in, and for a more prolonged period over the eighteenth century, a strong dependence on colonial revenues cannot be considered the default situation of Portugal over the timespan covered here.

In Figure 3, we additionally consider Portugal's custom revenues as a share of the kingdom's revenues in the long run (1367–1810). This distinction matter because, like the empire, their major volumes may be regarded as a strong disincentive to develop new taxes and effective institutions. This influential argument was first proposed by Godinho (1978) and explored by Hespanha (1994, p. 142–3) and Cardoso and Lains (2010, p. 266) in their analyses.

Figure 3. Custom revenues as a share of government revenue, 1360–1850



Sources: Appendixes A and B until 1810. For 1812-50, Cardoso and Lains (2010, p. 258).

Note: Custom revenues include customs proper (*alfândega*), which existed since the thirteenth century and tapped imported goods, and, from the 1590s onwards, an additional tax (*consulado*), which consisted of a surcharge on the value of the customs payment, paid. The denominator refers to central revenues of the government excluding empire. See the Appendix for details.

As Figure 3 shows, Godinho (1978) and others were right to highlight the role of the customs. However, their weight was only decisive in two specific periods: the first halves of the seventeenth and nineteenth centuries. When state finances were reliant on a new tax, like the *sisa* (since 1387) and the *décima* (since 1641), the share of the contribution of customs decreased. In other words, customs towered over the remaining sources in periods when the central state did not tap domestic economic activity with a well-designed tax. As such, the funds awarded by the country's burgeoning trade did not deter the emergence of new taxes.

Overall, the evidence analyzed in these two sections shows that Portuguese fiscal capacity was not a factor in the dismal performance of the Portuguese economy since the late eighteenth century (Palma and Reis 2019).

4. Expenditure and Legal Capacity

"We all ought to pay taxes because the king undertakes the defense of the homeland and protect us from enemies and thieves, maintains the peace and the justice among men, as well as [he] builds and repairs fortresses," – thus wrote the chaplain of King Manuel I in his 1496 treatise (Rebelo 1951). While this was an ideal portrait rather than an exact reading of the expenditure side of the budget, it reflects the widely held assumption that taxes served common purposes rather than the personal expenses of the monarch. Contemporary political society understood this: answering criticism of the municipalities about the sales taxes in the 1498 *Cortes*, Manuel I provocatively replied that "if we ceased to collect them, you would later beg me to be impose them again" (see Henriques 2009, p. 264). The king thus hinted that the public was the ultimate beneficiary of fiscal capacity.

The analysis of expenditures provides a window into what Besley and Persson (2011, p. 6) call legal capacity, that is the ability to convert fiscal capacity into expenses that raise private-sector productivity, like public works, regulation, and law enforcement. Rulers that spend revenues building palaces or engaging in negative-sum dynastic wars are not using tax funds to provide for public goods and the promotion of economic growth. With their revenues, rulers could fund public goods—such as roads—or their own conspicuous consumption, such as palaces. In other words, fiscal capacity measures concern inputs, not outputs or their efficiency. Hence, a comparative analysis of the concentration of resources available to the state does not directly translate into the provision of public goods as commonly understood.

In this section we break down the structure of central public expenditures (Figure 4). For the analysis, it is paramount to obtain comparable categories of expenditure that can be estimated with the accounting system found in the available sources. We follow what is called a functional analysis, i.e., we use categories that can be aggregated by adding the respective state agencies. This allowed us to disaggregate the expenditure into meaningful categories. Two categories of expenses, royal household, and redistribution, broadly (but not totally) indicate whether revenues were diverted to a narrow group of interests (including the monarch) or, instead, to productivity-enhancing works and services. The royal household covered expenses with the maintenance of the monarch, his family, and his court, including scions of noble families in their teens brought up who would provide many of the military and administrative positions. As the young men were being brought up, the state budget accounted for their *moradias*, i.e. living expenses as 'dwellers' (*moradores*) of the royal household. The *moradias* were only a share of the royal household: in 1527 and 1543 there reached 31% and 35%, but in 1563, represented only 5% of the expenditure categorized as Royal Household. Redistributive payments consisted of subsidies to the households of the royal family and of great nobles, pensions, and scholarships as well as dowries.

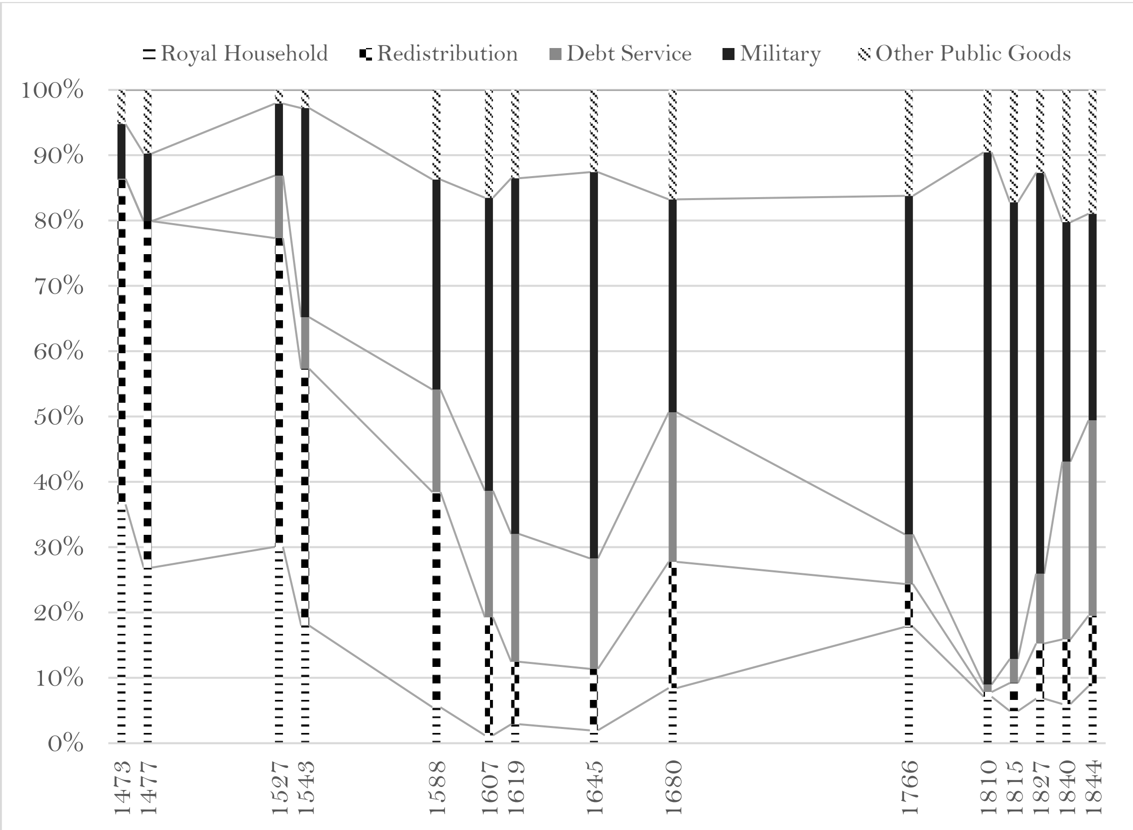
Redistribution payments rested on two payments: *assentamentos*, given to the large households of great nobles including royal family members; and *tenças*, which rewarded services to the king (scholarships and dowries were only important in the fifteenth century). The typical recipient of a *tença* was a nobleman who had served without pay for years in the hope of a royal reward (see Figure 1). In turn, the expenses that we categorize as military are different, as they involve pay and maintenance of soldiers, as well as matériel, including expensive fortifications and ships.[16] Its volume is determined by the current, not past, military commitments. In the eighteenth century, military expenditure rose as the consequence of the deliberate creation of a professional standing army, with a given number of regiments and fortifications, routine military promotions, scheduled careers, like it was becoming in contemporary Europe (Korner, 1995). Ensuring the

[16] Thus, the political considerations about the expenditure levels in the sixteenth century and the later periods are starkly different. Also, the efficiency was totally different: the bangs-for-buck ratio presupposed by a professional army and navy is different from the feudal relationship presupposed in the redistribution category. Nonetheless, it is true that some of the fifteenth and sixteenth century expenditures contributed to improving the military capacity of the state.

military capacity of a standing army meant a fixed cost structure. In sum, the military and redistribution categories do not overlap.

Other public goods encompass administration, the judicial system, and public works (and some modest education expenditure also appears from 1800). These expenses translate legal capacity. Military expenditure is separated from the remaining public goods, given that it might be used to build up archetypal public goods (the defense of the realm) or to engage in negative-sum wars. At last, debt service is included because it limited the fiscal space for improving legal capacity.

Figure 4. Central expenditure breakdown, 1473–1850



Sources: See Appendix B.

Notes: Redistribution includes some payments which are implicitly military compensation payments (e.g., *tenças*). These categories are incompatible with those applied in the post-1832 budgets (Mata and Valério 2001, p. 140). Available budgets are placed in ten-year intervals for ease of visualization.

Figure 4 allows for distinguishing two legal capacity regimes. The earlier regime is first apparent in the 1473 budget (though it likely started earlier) and lasted for about one century. It covers much of the sixteenth century, when imperial revenues were important (despite the small size of intercontinental trade in relation to the overall economy at the time; Costa et al. 2015). In this regime, Portuguese expenditure was dominated by redistribution and by the costs of the royal household. Until the second half of the seventeenth century, these two categories reflected the redistributive means whereby the Crown attributed resources to maintain and reward a militarized elite (*economia da mercê*).[17] These two categories often constituted about 50% of central expenses.[18] While redistributive expenses allowed for the building of an empire, they ate away fiscal space. Military expenses became the dominant share of expenditure, as it was the rule in Western Europe (Korner 1995; Hoffman 2015). In this second regime, the share of expenditure assigned to public goods (mainly courts and administration) was kept above the 10% mark and increased throughout the period.

Domestic military weakness, among other factors, proved fatal for Portuguese hopes of retaining independence in 1580. The loss of independence in that year led to the emergence of a very different expenditure pattern. When the country was ruled by Spanish kings (1580-1640), there was no royal court in Portugal. Hence, court expenses were dramatically reduced, whereas the linkage between the vassals' military service and the rewards given by kings weakened considerably. Thus, the weight of "royal household" and "redistribution" categories fell dramatically and would not be recovered when they resurfaced in the second half of the seventeenth century. Essentially, the share of expenses once occupied by redistribution and royal household was diverted to direct military expenditure (like in contemporary Prussia, Austria, France, and England), but with modest debt service, unlike the latter (Costa and Miranda, 2023). This observation is consistent with the comparatively high level of fiscal revenue observed in section 2.

With this analysis we can see that Portuguese fiscal capacity —in the sense of ability to collect revenues— was effectively converted into military and legal capacity from the late sixteenth century onwards, and empire revenues did not hinder this process. The displacement of courtly and redistributive payments by making room for military and war-related debt repayments was also seen in the finances of other absolutist states such as Austria and Prussia during the eighteenth century (Korner n.d.; Dickson 1987, pp.

[17] While part of a mechanism that ensured internal stability, this also reflected the regressive nature of the fiscal system. For the regressive nature of premodern fiscal systems, see, for example, Kwass (1999) or Alfani and Tullio (2019, p. 165-173).
[18] By comparison, subsidies and pensions constituted 20% the total expenditure in the 1620s Austria, Prussia, Denmark, and France (Korner 1995, p. 411).

385–6). One the other hand, from 1645 to the 1815, Portugal avoided the rapid increase of debt service and arrears that affected European states, where expenditure was related to war and public debt servicing (Alfani and Di Tullio 2019, p.172). In Portugal, the modest rise of debt service and arrears (until the nineteenth-century civil wars) allowed for increasing the portion of the budget dedicated to maintaining and erecting public goods and services. This share reached 13% in 1588 and was kept at that level until it approached 20% in the 1840s. This considerable share of the fiscal resources devoted to non-military public goods does not provide the whole picture. As it was common throughout early modern Europe, Portugal was a devolved state in which such expenses were left to the self-ruling communities that covered the entire territory: the municipalities.

5. The local level: too small to fail

Central state revenue and expenditure is only a part of state capacity. Local administrators also collected taxes and delivered public goods, and they worked independently of the central state. Since the twelfth century in Portugal, this role was played by some eight hundred municipalities, which administered nearly all the territory of the country.[19] These authorities not only guaranteed public order and social cohesion as the building and maintenance of infrastructures were largely left to their resources. Likewise, the regulation of local markets, licenses, weights and measures, trial of minor offences, and public ceremonies and festivities were supported by the municipal budget. Transfers from the central government to the municipalities were minimal and were typically assigned to strategic, national goals. The collaboration of the central state was occasionally required in a few specific instances in which very large structures, like aqueducts or fortifications, had to be built.

Unlike the central state, which acted with little accountability and were vulnerable political pressures, municipalities were "too small to fail". Stricter budget constraints, closer accountability by the central state and the people alike, and better alignment with the interests of the taxpayers all implied that municipal resources contributed disproportionally to the provision of non-military public goods. As the people of Coimbra wrote in a 1459 petition, taking part in the municipal meetings was important to them

[19] The country was home to 762 municipalities in 1527 and to 816 in 1826 (Monteiro 1996, pp. 35–36).

because they felt the burden of paying [taxes] and "wanted to know how the affairs went and how municipal monies was spent" (Oliveira 2010, p. 77, our translation).

Tighter accountability and proximity meant that local authorities enjoyed the legitimacy and the capacity to foster social cohesion. In this setting, the central government devolution of such local-level expenses and its focus on public goods that had non-rival and non-excludable characteristics at the national level (e.g., national defense) represents a more efficient arrangement than the alternatives.

In this largely devolved system, the role of the municipalities was complementary to the central state. Despite their administrative and judicial importance, the mainstream historiography downplays the fiscal capacity of the municipalities, with the arguments that they did not mobilize significant resources and/or their expenditure was focused on personnel (e.g., Oliveira 1996, p. 131; Monteiro 1996, p. 135). This view is built on political discourse rather than on quantitative evidence. By aggregating a representative sample of municipalities over a long period, we show here that this judgment severely understates the role of the local level. While municipal budgets were small when considered individually, aggregate municipal revenues enhanced central fiscal capacity by about an additional 7% over the period (see Table 4). More importantly, municipalities ensured about one-third of all expenditure in public goods over the period (see Table 7).

Local revenues

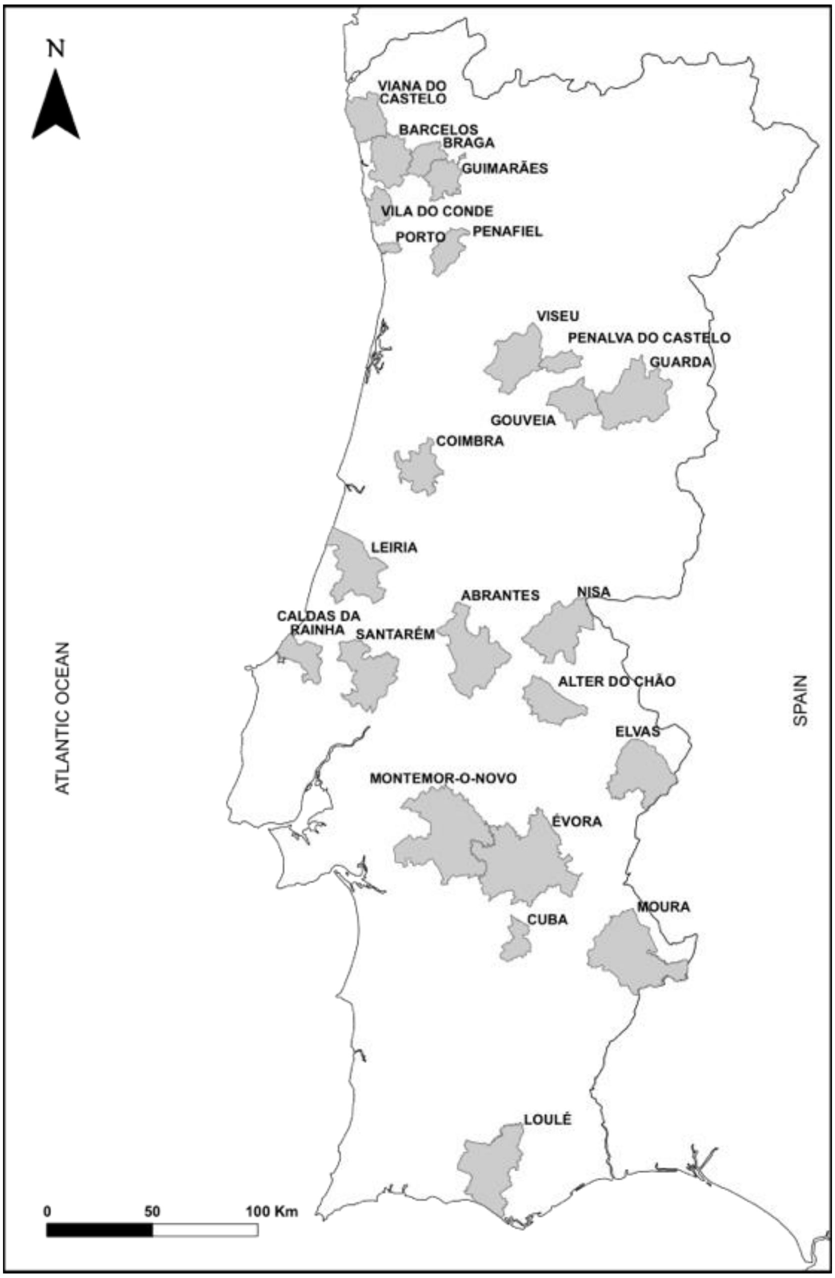
Lacking the power to tax income or wealth, local governments tapped the areas of the economy that were left out by the central state. These marginal sources of revenue varied across the municipalities, but most of the municipalities depended on three sources: fines on economic activity; tolls and indirect taxes; farming of the commons and natural resources. All municipalities collected a great variety of fines for minor offences (trespasses of cattle, public disturbances, failure to comply with regulations on quality standards or weights and measures) and charged fees for conducting inspections and awarding licenses. Municipal governments collected tolls and taxed certain professional activities and the consumption of some products. Practically all municipalities laid claim to the commons and hence charged their users, whilst the larger municipalities were also endowed with agrarian land and houses, whence they collected rents (for a detailed analysis, see Barbosa 2020).

Out of the total revenues, one-third (known as "*terças*") was pooled at the regional level and managed by a centrally appointed guardian to sustain the building and repair of fortresses or naval defenses. These were not understood as transfers to the central state revenues, because the funds of the *terças* had to be spent on defensive works or, with royal license, on repairs of almshouses and hospitals. There were however exemptions, as some municipalities were relieved of its payment during times of war and there is at least one important municipality (Coimbra) which was exempted from it (Barbosa et al. 2022). The values of the tax-farms of the *terça* for the whole kingdom in the period 1621–1688 (Oliveira 2013, p. 325) represent about one-quarter of the total municipal revenues estimated. There were also transfers from state taxation to the municipalities, but these were modest.[20]

To estimate the overall contribution of local revenues to Portuguese fiscal capacity, we aggregate disperse local revenue information and measure it with respect to the revenues of the central state. We gathered monographs, published sources, and manuscript sources for 24 municipalities (see Appendix C) spread throughout the country (see Figure 5). Our choice of this sample was based on all the available published information plus additional archival work which we did to ensure the geographic and chronological balance of the sample. The results of this effort can be seen in Table 4. We find that the level of local revenues relative to central revenues was relatively stable. Except for two periods of intense military effort at home — the Restoration Wars of 1640–1668 and the French Wars of 1792–1815 — which led to the diversion of resources to the central treasury and the erosion of the tax base (Barbosa 2017), local revenues corresponded to about one tenth of central revenues (averaging 8.2% for all years observed, with extreme values at 3.6 and 13.6% and a standard deviation of 3.6). The contribution of the local level to overall Portuguese fiscal capacity was small, as expected, but not irrelevant. The key issue, however, is how these funds were spent.

[20] In the most important municipalities, these were typically assigned to a specific end decided by the central state (typically, the maintenance of fortresses or seaports with strategic value). In the late eighteenth century, municipalities also received the leftovers of one of the kingdom-wide taxes, the *sisa* (Monteiro 1996, p. 132-3).

Figure 5. The 24 municipalities sampled



Sources: Appendix C.

Note: 1913 borders shown.

Table 4. Local revenues

	Central-level nominal revenues excluding empire (*contos*)	Estimated local-level net nominal revenues (*contos*)	Local-level revenues (as % of central revenues)
1412–49	23	3.2	13.6
1450–99	53	3.8	7.2
1500–49	188	23.9	12.2
1550–99	395	42.6	10.8
1600–49	976	83.3	8.5
1650–99	1,542	57.5	3.7
1700–49	3,990	273.9	6.9
1750–99	3,957	276.3	7.0
1800–50	7,773	280.1	3.6

Sources: Appendix C.

Notes: Municipal weights are extrapolated from the observable 1527 municipal populations (minus Lisbon) before 1527 and interpolated towards 1913 revenues (minus Lisbon; Portugal, 1914) after 1527 (Dias 1996); local-level revenues are shown of the *terça* (i.e., transfers from local- to regional-level revenues); *terças* were estimated conservatively at 25% of the total estimated revenue. For alternative weights, see Table A3 in the Appendix.

Local expenditure

Although some historians did endeavor to study municipal expenses, their analyses typically used their own classification schemes and are typically limited to patches of time, making it difficult to systematize and aggregate the results of their research. Also, the low organizational complexity of the municipalities does not allow for a functional analysis. The results of this prior research from a few of the municipalities across the country (see Figure 5 for their geographical locations) and for a major city like Porto can be seen in Tables 5 and 6, respectively.

Table 5. Expenditure in a sample of municipalities, 1499–1790 (%)

	Montemor, 1499	Coimbra, 1590–1660 (mean)	Santarém, 1762	Gouveia, 1790
Justice, military, and administration	38	52	63	75
Public works	41	19	6	7
Religious and civic celebrations (redistribution)	19	9	5	18
Debt service	0	6	0	0
Charity and others	2	14	27	0

Sources: Appendix C.

Table 5 shows how the expenditure pattern in different municipalities in different periods exhibits two traits that set it apart from the central state. The first is the absence of redistributive expenditure and of expenses with the royal household. The second is the role of public goods: more than half the money was typically spent in military, justice, and administration expenses during the entire early modern period. While the expenditure on religious and civic celebrations might appear detrimental to common welfare, this is to ignore the literature that shows such event built up cohesion and stability (Harris 2017). Collective celebrations (civic and religious), which were paid for locally, contributed to social cohesion: they helped make political institutions consensual.[21] Also, like charity expenses, they were primarily directed to the poor. As observed in other European countries, social welfare redistribution was essentially entrusted to the local level (Alfani and Di Tullio 2019, p. 166).

The large share spent on officers' salaries, social assistance, and popular or religious celebrations shows that local government was a central piece in social cohesion and order without much central interference. The administrative and judicial costs paid at the local level helped support the central state. Expenditure on officers' salaries allowed for

[21] These could include festivities with food and entertainment provided, including a stage for theatre, dancers, comedies. Municipalities also financed judges, attorneys, clerks, burials, and medical support.

the regular functioning of local institutions, and thus, political stability. Porto, whose municipal accounts range from the fifteenth to the later eighteenth century, provides a less disperse picture of this evolution (Table 6).

Table 6. Local expenditure in Porto, 1450–1776

	1450–97	1590–1660	1670-96	1701–46	1757–76
Justice, military, and administration (%)	49	70	61	61	51
Public works (%)	7	paid by central revenues	11	3	7
Religious and civic celebrations (%)	18	10	12	3	3
Debt service (%)	8	n.a.	n.a.	2	1
Charity and others (%)	18	20	16	31	38
Observations (number)	8	13	5	5	3

Sources: Costa (2018), p. 276, for 1706-1776, mean of 8 observations at 10-year intervals; Gonçalves (1987), for 1450-97, mean of 8 observations; Silva (1988), p. 914, mean of 13 observations; Valente 2008 (for 1670-96, mean of 5 observations).

Notes: Except for 1450-97 (given in full by Gonçalves 1987, p. 84) and 1670-3 (given in full by Valente 2008, p. 82), the numbers shown represent mean values extracted by the cited authors from unpublished sources. Administration includes costs of collecting central taxes. Charity and others include non-specified amounts freely disposed by the king; communications with the central government and expenses with embassies; and miscellaneous expenditures, including consumables. We added 5 residual percentage points so that the total adds to 100. Costa (2018) gives 15 percent for the categories that we summarize as "Charity and others").

While the data for Porto confirm the broad picture contained in Table 5, it should be observed that Porto was a large city and its commercial, naval, and administrative importance justified transfers from the central state and for a higher role of military expenditure (Valente 2008, p. 82; Costa 2018, p. 282). The municipality of Coimbra provides the best documented case over a long period of time (Barbosa et al., 2022; Barbosa 2023) and was more representative of the situation of municipalities across the country, as it lacked Porto's strategic value and size. Moreover, the sources from Coimbra allow us to isolate the critical expenditure variable: non-defense public goods. Table 7 shows per capita expenses in public goods in the familiar unit of unskilled day wages and as percentage of total expenditure.

Table 7. Estimated total expenditure in non-military public goods, 1473–1835

	Share of the local budget assigned to non-military public goods (Porto 1473-77; Coimbra 1534-1835)	Per capita local expenditure in non-military public goods (in day's wages for unskilled workers)	Per capita central expenditure in non- military public goods (in day's wages for unskilled workers)	Per capita total expenditure in non- military public goods (in day's wages for unskilled workers)	Contribution of the local budget to the total expenditure in non-military public goods
	a	*b*	*c*	*d = b+c*	*e = b/d*
1473	44%	0.19	0.24	0.43	45%
1477	30%	0.07	0.25	0.32	23%
1534	75%	0.81	0.19	1.00	81%
1588	34%	0.30	0.84	1.13	26%
1607	25%	0.22	1.28	1.50	15%
1619	31%	0.29	1.13	1.42	21%
1645	33%	0.23	0.77	0.99	23%
1681	14%	0.03	0.78	0.82	4%
1766	28%	0.45	2.78	3.23	14%
1810	22%	0.15	1.33	1.47	10%
1827	82%	0.33	3.19	3.52	9%
1835	74%	0.34	5.06	5.40	6%

Sources: budget shares from Table 6 and Barbosa et al., (2022); overall local budgets from the sources given in Table 4; wages from the sources given in Table 1; central expenditure from Figure 4.

Notes: We define public goods as justice, administration, and public works. This data is based mainly on Coimbra, for which we have uniform and good quality data from the mid-sixteenth century onwards (Barbosa et al., 2022). For the benchmark years 1473 and 1477, for which data for Coimbra is not available, we used Porto accounts instead. The years in the first column correspond to years with a central budget for which it was possible to categorize expenditure. Municipal budgets do not include the *terça.*

According to Table 7, throughout the period, local-level expenses typically contributed to at least one-third of the provision of public goods countrywide. The high share of local budgets committed to non-defense public goods compensated the small size of the municipal contribution to overall expenditure. Nevertheless, the role of municipalities as providers of public goods diminished as the central budget started to dwarf its local counterparts and, simultaneously, municipal expenses became less focused on public goods. This finding shows the surprising importance of local-level expenditures in assessing state capacity in these historical periods. The oversized contribution of the municipalities to public goods liberated the central state to effectively affirm the country's sovereignty in a geopolitically delicate situation, at least until the Napoleonic Wars came.

In sum, tighter accountability and proximity meant that local authorities enjoyed the legitimacy and the capacity to foster social cohesion. In this setting, the central government devolution of such local-level expenses and its focus on public goods that had non-rival and non-excludable characteristics at the national level (e.g., national defense) represents a marginally more efficient arrangement than the alternatives.

6. Conclusion

The case study of Portugal shows the advantages to be gained from exploring a wider range of variables to measure state capacity. The central importance of state capacity to explain economic development requires economic historians to overcome the limitations of historical data and develop empirical methodologies for measuring state capacity. These measures must be comparable over long periods of time. In this paper we explored new methods, and we illustrated these using Portugal as a case study.

Overall, our new fiscal capacity measures paint a similar picture with respect to Portugal: the country had average Western European fiscal capacity levels. This capacity was not built on imperial revenues. With regards to the weight of the empire for fiscal revenues, Portugal went through three main regimes over the early modern period. In the sixteenth century, high imperial revenues mattered for the overall fiscal position of the Crown, despite the low overall importance of intercontinental trade relative to the size of the economy (Costa et al., 2015). In the eighteenth century, overseas revenues regained some of their prior importance, even though they never became dominant as a share of central revenues.

Prior to the mid nineteenth century, Portugal did not lack state capacity. However measured, Portugal's fiscal capacity rose over time, although it fell short of the European leader. More importantly, when central government provision of non-military public goods is added to the local level, we see an increase in the supply of public goods. Hence, and by contrast to much of the prior literature (e.g., Tilly 1992, Justino 1986, Hespanha 1994, 2013), we argue that low fiscal capacity was not the key factor in the country's dismal economic performance. In the fifteenth and sixteenth centuries, there was a high level of associated redistribution and royal household expenditure. But by 1600, the weight of these expenses lost importance, and their fiscal space was occupied by military expenditure. Also, the country assigned a significant share of its expenditures to public goods other than defense. Overall, this implies that other factors must explain its comparative development failure from the eighteenth century onward (Palma and Reis 2019; Henriques and Palma 2022, Kedrosky and Palma 2024). Also, Portugal's macroeconomic failings after the second half of the eighteenth century, should not distract from the fact that its institutional fabric, at both the central and the local level, was able to convert fiscal resources into legal capacity. Also, we found that the arrangements between the local and the central level provided the country with cohesion, political stability, and average levels of fiscal capacity, even if these were not sufficient to cause long-run economic growth.

Data Availability Statement

The data and replication package for this article are available at: https://www.openicpsr.org/openicpsr/project/198143/

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Note: all primary sources are cited in Appendices A–C.

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Appendix – for online publication only

Appendix A—Disaggregated data, source criticism, and methodological notes

Note: the sources cited Appendix A are listed in Appendix B

A1—Definition of imperial revenues

We define imperial revenues as revenues coming to the central treasury of mainland Portugal from the sale or direct administration of imperial trading monopolies in overseas locations beyond Europe. These include contracts and revenues from Guinea (Guiné), Mina, Angola, and São Tomé associated with gold, spices, and the slave trade, the gold transferred to mainland Portugal (see A2 below) as well as brazilwood (pau brasil) and the revenues of the *Casa da Índia* related to the pepper monopoly. We did not consider as imperial revenues any taxes paid in Brazil or in the *Estado da Índia* (as these were spent locally rather than transferred to mainland Portugal) such as the *dízimos do padroado* in Brazil. Importantly, our criterion leaves out of the monopoly on the tobacco trade, which corresponded to between 14% and 21% of the imperial revenues (Salvado 2014). Under our criterion, the tobacco monopoly cannot be considered as an imperial revenue because most of the value added came from industrial transformation of tobacco leaves in Portugal and its sales in the country. The raw leaves imported from Brazil only constituted a marginal share of the total value. Furthermore, the monopoly was independent of the source market—for example, there was no obligation to buy the leaves from Brazil, and tobacco from Virginia was also used when necessary.

A2—Notes on eighteenth-century Brazilian gold remittances

Crown revenues concerning taxing of gold production in Brazil were generally called *quinto do ouro*, even though that in fact corresponds to four different fiscal systems which developed after gold was discovered in the late seventeenth century until more than a century later.

From 1697 to 1713, one-fifth of the value of mining output was charged to miners, even though enforcement was relatively limited during this initial period. Revenues were collected both in the mines themselves via guards (*guardas-mores*) and in the local mints.

From December 7, 1713, until September 30, 1724, a second fiscal regime was in place, whereby a fixed taxation value was paid per slave and commercial establishment (*capitação*). To minimize tax fraud, a minimum revenue of 30 *arrobas* was to be collected; any calculation falling behind that value had to be covered anyway.

From October 1724 to July 1735, the taxation system based on one-fifth of revenues returned, but this time it was paid exclusively in the mint houses (*Casas da Fundição*). To ensure compliance, minting was compulsory—it was forbidden to transport gold dust. From 1735 to 1751, a system similar to that of 1713–1724 returned (*capitação*). On December 3, 1750, the fifth paid in the Mint Houses returned, and a minimum of 100 *arrobas* had to be paid. This system then continued for the remainder of the century.

As our summary shows, the tax system usually called *quintos do ouro* in fact comprised a variation of different taxation methods which changed over time. Furthermore, it is important to notice that only the net amount of taxation, after local Crown costs were paid, was in fact transported back to mainland Portugal. Hence, the so-called *quintos*, or fifths of gold registered, did not always correspond to a 20% tax on production. The same applied to the 1% transportation fee (*manifestos*). See Costa et al. (2013) and Costa et al., s.d..

Table A1. Nominal revenues (*contos de reis*)

year	revenue	sources
1367	1.9	Henriques (2009, p. 98)
1401	23.3	Henriques (2009, p.160)
1473	48.3	Henriques (2009, p.166)
1506	67.5	Godinho (1978)
1511	98.0	Torre do Tombo, Núcleo Antigo, 532
1519	160.7	Godinho (1978)
1524	155.6	Pinto (2013a, pp. 53–59)
1526	155.9	Pereira (2003, pp. 154–156)
1527	155.5	Pereira (2003, pp. 205–210)
1534	153.7	Sanceau (1973, pp. 37–39)
1543	190.2	Pinto (2013b, pp. 161–64)

1557	303.5	Rego (1960, vol. 1, pp. 891–95)
1563	209.4	Pinto (2013c, pp. 169–72)
1588	462.9	Godinho (1978)
1593	560.1	Luz (1949)
1607	911.4	Falcão (1859)
1619	783.7	Oliveira (1620)
1625	708.7	Hespanha (1994, pp. 124-5)
1632	1,129.2	Carrara (2011, p. 47)
1645	1,266.1	Dias (1985); completed with Biblioteca da Ajuda, Manuscritos, 51-VI-19, folia 359–364; Biblioteca D. Manuel II, Manuscritos, ADQ 094, folia 26–28.
1656	1,466.7	Prestage (1920, p. 9) completed with Biblioteca da Ajuda, Manuscritos, 51-VI-19, folia 359-364; Hespanha (1994, p. 158)
1660	1,788.9	Hespanha (1994, pp. 114) completed with Biblioteca da Ajuda, Manuscritos, 51-VI-19, folia 359-364
1681	1,702.2	Dias (1985)
1716	4,342	Santarém (1850) plus the average of the 1681 and 1730 *décima* from Dias (1985) and Carrara (2011, p. 53)
1730	6,356	Humbert (1730, pp.166–68) and Carrara (2011, p. 55)
1762–1777	5,222.9 (*)	Thomaz (1988)
1804	11,045	Macedo (1982, p. 209)
1810	7,515.6	Costa (2008, p. 17)
1812	8,121	Cardoso and Lains (2010)
1817	10,436	Cardoso and Lains (2010)
1821	6,820	Cardoso and Lains (2010)
1827	6,660	Carvalho (1828)
1828	11,030	Mata and Valério (2001).
1840	11,156	Portugal (1840)
1834–44	7,625.6 (*)	Cardoso and Lains (2010)
1844	12,056	Portugal (1844)

Notes: One *conto de réis* corresponds to one million (10^9) *réis* (or *reais*). Our "with empire" revenues category for the period of 1450–1499 corresponds to a single budget for 1473 which does not include empire revenues. We hence considered gold from Mina in 1487 and tax farming of slave trade—together, these correspond to 24,082,240 réis (Vogt 1979, appendix 1 and Elbl 1997, pp. 6–7). The 1511 central revenues correspond to a lower bound, as some pages of the original manuscript (see Figure 1) were lost. We did not use the incomplete 1635 and 1660 budgets reported in Hespanha (1994, pp. 114–5, 158), with the revenue of the *décima* missing from the latter. Until 1607, budgets do not account for the *terça* (see text). We interpret this as meaning that until then, the *terça* was spent at the subnational level. (*) For these periods, nominal averages are shown above for convenience, but annual deflated numbers have been used to construct the results in the main text using annual unaveraged values.

Table A2. The Lisbon Customs and the Revenue of the Kingdom, 1367–1557

Years	Lisbon Customs	Central revenues (without Empire)	Customs as % of total central revenues
1367	160,000 *libras*	960,000 *libras*	16.6%
1401	6,000,000 *libras*	81,640,000 *libras*	7.3%
1473	4,700 *contos*	52,500 *contos*	8.9%
1511	10,723 *contos*	98,360 *contos*	10.9%
1527	12,120 *contos*	156,940 *contos*	7.7%
1557	50,500 *contos*	336,320 *contos*	15%
1593	133,804 *contos*	491,800 *contos*	27.2%
1641	152,246 *contos*	752,039 *contos*	20.2%
1645	152,246 *contos*	1,269,000 *contos*	12.0%
1681	269,857 *contos*	1,533,000 *contos*	17.6%
1716	700 *contos*	3,828,000 *contos*	18.3%
1770	1,175 *contos*	5,174,000 *contos*	22.7%

1804	1,252 *contos*	11,045,000 *contos*	11.3%
1810	548.9 *contos*	6,316,000 *contos*	8.7%

Sources: For 1367–1557, Henriques (2009, p. 178); 1593 from Luz (1949, p. 42); 1625 from Hespanha (1994); 1641 and 1681 from Dias (1985); 1716 from Macedo (1982, pp. 209); 1770 corresponds to the average of the period 1762–77 from Thomaz (1988); 1804 from Macedo (1982, pp. 209). 1810 from Costa (2008).

Notes: We do not observe the Lisbon customs revenues for 1645, and assume they are the same as those of 1641. For 1762–77 and 1804, the sources do not break down the Lisbon customs revenue from the fees paid by the ships anchoring in Lisbon (*consulado*). For these years, we assume that customs revenue was 70% of the total for these years, based on the closest observable split (1730), which gives the customs surcharge tax (*Consulado*) as being worth 240 *contos* over the regular customs tax of 600 *contos* (Humbert 1730; Carrara 2011). This makes sense given that *consulado* represented 3% *ad valorem* of the unloaded cargo, whereas tariff rates were around one-tenth (Hespanha 1994, p. 120).

Table A3. Local level revenues in a sample of cities as a percentage of central state revenues, using alternative weights.

	Preferred weight (interpolation between 1527 population and 1913 municipal revenue)	Weighted by 1527 Population	Weighted by 1913 Revenues
1400–49	13.6%	13.6%	42.4%
1450–99	7.2%	7.2%	11.2%
1500–49	12.2%	12.0%	20.8%
1550–99	10.8%	10.9%	15.9%
1600–49	8.5%	8.4%	11.4%
1650–99	3.7%	4.3%	5.1%
1700–49	6.9%	7.4%	7.4%
1750–99	7.0%	6.8%	6.8%
1800–19	3.6%	3.4%	3.5%

Sources and notes: As in Table 4 of the main text, but with fixed municipal weights at the 1527 level.

Appendix B: Sources for Central Revenues and Expenditure

The accompanying data file for this paper details for which numbers each of the following sources were used.

Archival Sources

Arquivo Histórico do Tribunal de Contas, ER 5373

Arquivo Nacional da Torre do Tombo, Núcleo Antigo 532 and 590.

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APPENDIX C: SOURCES FOR MUNICIPAL REVENUES AND EXPENSES

Archival Sources

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