God and Mammon

The Dissolution of the Monasteries and its Consequences

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This thesis consists of approximately 40,000 words, not including footnotes or references.

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Abstract

The Dissolution of the Monasteries was the single largest transfer of wealth in English history between the Norman Conquest and today. It was immediately preceded by the creation of the *Valor Ecclesiasticus*, a complete survey of all Church property in England. The first paper uses a stratified sample of the *Valor* to create a georeferenced dataset that allows an unprecedented view into the English monastic system on the eve of its destruction. The dataset presented in this paper fills the crucial gap between aggregate overviews of the monastic system and case studies of individual monasteries, preserving a high level of detail while providing enough data and geographical coverage to ensure generalizability. Using this dataset, I demonstrate the overwhelmingly local nature of the monastic economy despite their long-distance networks, and show that the monastic system as a whole moved enormous quantities of money from the countryside into cities and suburbs. I also quantitatively confirm many of the assertions of previous historians of monasticism, including the Cistercian order's focus on land revenue, the dominance of well-connected Benedictine houses, and the tight connections between Carthusian monasteries even over huge distances.

The second paper investigates the causes of the largest rebellion ever faced by a Tudor monarch: the Pilgrimage of Grace. By combining a dataset of rebel musters and the seats of rebel gentlemen with the *Valor* data and a shapefile of Northern roads and shipping routes, I provide the first statistical evidence in the long-running debate over the rebellion's causes. I find that monastic land is the only variable that consistently predicts rebellion: parishes with more monastic land were more likely to rise in rebellion and rose sooner than

parishes with less monastic land. In addition, monastic land likely to contain tenants predicts rebellion much more strongly than monastic land likely to have been farmed with hired labor. This finding bolsters the argument of authors like Michael Bush, who see the Pilgrimage as fundamentally motivated by the economic impacts of the Dissolution, specifically the threat of eviction.

Finally, the third paper investigates the long-run impacts of the Dissolution on individuals and the wider economy. Using a set of name lists containing status information and a new dataset created from taxation documents spanning three hundred years, I find that surname groups containing monastic land purchasers maintained a substantial wealth advantage well into the nineteenth century. This advantage is visible across a range of measures, including total family wealth, average individual wealth, the wealth of the richest bearer of each surname, and the total number of individuals with a given surname. On the broader economic effects of the Dissolution, the results are more mixed. I find a small increase in tertiary employment in parishes with more monastic land, but these effects do not scale up to the hundred level, making it unlikely that monastic land is associated with higher productivity.

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Chapter 1

Introduction

Early in 1536, the English Parliament passed an act dissolving all religious houses in England and Wales with an annual income of less than £200. Initially framed as a mere reorganization intended to consolidate lax and sinful smaller monasteries into their larger and more observant brethren, the Dissolution rapidly came to engulf the entire monastic system in England. With the final large monasteries surrendering to Crown Commissioners a mere four years after the passage of the act, a thousand-year-old way of religious life was gone. With monks and nuns pensioned off to dampen their opposition to his religious changes, Henry VIII sat down to digest his massive gains. However, the promise of glory and the threat of foreign invasion intervened. Former monastic lands were sold off at a remarkable clip, falling into the outstretched hands of Royal favorites, courtiers, speculators, and above all the rising gentry class. The Dissolution was one of the largest social ruptures and transfers of wealth in English history, and is the key event under study in this thesis.

1.1 English Monasteries Before the Dissolution

Thus far, literature on the English monasteries before the Dissolution has largely consisted in analyses of its aggregate features or case studies of single monasteries. The first paper in this thesis attempts to fill in some of the gaps between these two poles using the *Valor*

Ecclesiasticus, a 1535 survey of all English monasteries described in detail below.

While the reformers and the Crown attempted to spread a narrative of moral decline and popular anti-monasticism and later Protestant chroniclers happily maintained that narrative, many monasteries, particularly the Cistercians, still received a wealth of public donations that allowed new construction and refurbishment right up until the Dissolution.[1] Indeed, with an increase in the frequency of pilgrimage in the late middle ages, monasteries were still a cornerstone of popular religious life in England.[2] This was particularly true for smaller monasteries, as they served as an alternative for pious people who could not afford to travel to major holy sites.[3] Monks also served as an idealized image of devotion, with pious and literate laypeople buying "books of hours" in hopes of imitating their faith.[4] Monasteries also served a crucial social function, providing corrodies (an annual allowance of food and drink, often purchased for security in old age) and sheltering people "founde of almes," i.e. permanently and completely dependent on monastic charity.[5]

Turning to the monastic economy (depicted in Figure 1.1), a bird's eye view comes from Alexander Savine's 1909 book *English Monasteries on the Eve of the Dissolution.* He estimates the gross income of all monasteries in England as £161,853 and their gross temporal income—derived largely from land income and rents—as £121,659, leaving their gross spiritual income—tithes,[6] oblations[7], and glebe[8]—as £40,194.[9] This figure comprises roughly 11%

1. Michael Carter, "It would have pitied any heart to see: Destruction and Survival at Cistercian Monasteries in Northern England at the Dissolution," *Journal of the British Archaeological Association* 168 (1 2015): 78–83.

2. Julie Kerr, "Cistercian hospitality in the later Middle Ages," *Monasteries and society in the British Isles in the later Middle Ages*, 2008, 31.

3. Martin Heale, "Training in Superstition? Monasteries and Popular Religion in Late Medieval and Reformation England," *The Journal of Ecclesiastical History* 58 (3 2007): 425–7.

4. Eamon Duffy, *The stripping of the altars : traditional religion in England, c.1400-c.1580* (New Haven, CT : Yale University Press, 1992), 210.

5. Alexander Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution* (Oxford, 1909), 224–5.

6. A payment to the Church, traditionally 10% of agricultural production.

7. Donations to the monastery.

8. Income from land attached to a church.

9. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 100.

of English agricultural production or about 4% of total English GDP in 1500.[10] The lion's share of temporal income was composed of income from land, divided into rent, leases, and profit from demesne[11] lands.[12] Demesne farming had declined a great deal by the Dissolution, with monks preferring the stability of rents over the risks and headache of monitoring hired laborers.[13] Spiritual income was dominated by tithes, which comprised roughly five-sixths of spiritual income, with one twelfth each made up by glebe and oblations.[14]

Of this income, about half was spent on food and drink, purchasing an unusually meat-heavy diet comparable to that of a contemporary aristocrat.[15] Most basic foods were purchased from each monastery's own tenants, in cash, as a payment for debt, or in the case of grain, as a rent payment in kind.[16] Monks also spent some of this income on a staggering alcohol consumption, with the monks of Durham Cathedral Priory drinking an average of a pint of wine and a gallon of ale each day.[17] Not all of this food was consumed by the monks themselves, however. Traditionally, three portions of food and drink were set aside for the poor to commemorate Jesus' washing of his disciples' feet.[18] In addition, all leftovers from the monks' meals were also given out to the local poor.[19]

A second major category of expenditure was on servants and staff. Like an aristocratic house, monasteries employed a large pyramid of servants beneath gentry officials who behaved as "consultants" for the monastery.[20] Savine calculates that servants outnumbered the

10. S N Broadberry, *British economic growth, 1270-1870* (Cambridge : Cambridge University Press, 2015), 194, 201.
11. Lands farmed directly, either by the monks or, more often, by hired laborers.
12. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 141.
13. Elizabeth M Halcrow, "The decline of demesne farming on the estates of Durham Cathedral Priory," *The Economic History Review* 7, no. 3 (1955): 348.
14. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 107.
15. Miranda Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.* (Oxford : Oxford University Press, 2005), 34.
16. Ibid., 136, 139.
17. Ibid., 68.
18. Barbara Harvey, *Living and Dying in England 1100-1540: The Monastic Experience: The Monastic Experience* (Clarendon Press, 1993), 12.
19. Ibid., 13.
20. Ibid., 148.

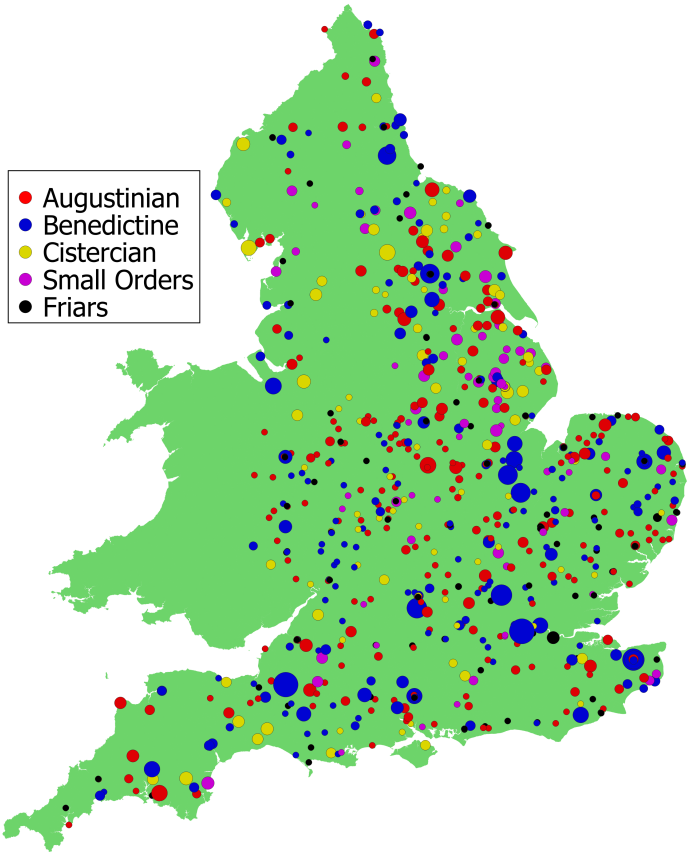

Figure 1.1: Monastic Houses of England, 1535

religious roughly three to one, with four servants per monk and two servants per nun.[21] This staff would do the menial jobs of the religious house, leaving its monks or nuns to their devotion. A final important category of regular expenditure was alms. The *Valor* only records alms given in perpetuity for a named benefactor, and these are equal to roughly 2.5% of gross income.[22] Savine asserts that the real figure is likely around twice that, or roughly 5%, but later authors have claimed that the figure is as high as 7%.[23]

As averages, the figures above give a better idea of the conditions in a larger religious

21. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 221.
22. Ibid., 239.
23. Neil S Rushton and Wendy Sigle-Rushton, "Monastic Poor Relief in Sixteenth-Century England," *The Journal of Interdisciplinary History* 32 (2 2001): 215–6.

house. Smaller houses tended to have far fewer staff—1.1 per monk and only 0.4 per nun—leaving the religious themselves doing much of the mundane work of daily life.[24] Smaller houses also subsisted on far humbler food, drink, and clothing than the larger houses, and lacked finer amenities like grand musical performances.[25] Many of these smaller houses were founded later, tended to have a poorer initial endowment, and found themselves in a vicious cycle in which a lack of resources attracted fewer donations, which in turn sharpened the lack of resources.[26] A life inside the cloister was no guarantee of protection from the profound inequalities that marked early modern England.

My first paper seeks to add to this combination of aggregate figures and individual case studies using the data contained in the *Valor Ecclesiasticus*. A 1535 survey of all Church property in England (described in more detail below), the *Valor* records each item income and deductible expenditure (alms, fees for secular officials, rents, and regular transfers) for every monastic house. By translating, entering, and georeferencing a sample of this survey, I can trace each flow of money from source to destination. By doing so, I can provide a much more complete view of the monastic system and examine any differences between monasteries of different sizes, orders, and regions. I find that monasteries' income mixes vary more by order, while their expenditures vary more by region. I also uncover the deeply local nature of monastic networks; while monasteries sent money over great distances, their median pound of income came from no more than a day's walk away. Finally, I find that the overall effect of the monastic system was the continual flow of money from rural properties into urban and suburban religious houses.

24. Dom David. Knowles, *The tudor age*, Religious orders in England ; v. 3 (Cambridge: Cambridge University Press, 1955), 200–2.

25. James Clark, *The Dissolution of the Monasteries: A New History* (Yale University Press, 2021), 84, 92–3.

26. Benjamin Thompson, "Monasteries and their Patrons at Foundation and Dissolution (The Alexander Prize Essay, proxime accessit)," *Transactions of the Royal Historical Society* 4 (1994): 106 121–2.

1.2 Motivations for Dissolution

Scholars have generally taken one of three main views on the causes of the Dissolution. Most comprehensible to the contemporary secular mind is the financial motivation. Henry VIII had emptied the coffers so painstakingly filled by his father, spending the money on Continental wars. He had levied unpopular taxes in 1512, 1514, 1515, and 1524, and had begun borrowing heavily.[27] Scottish raids and Irish uprisings sapped the treasury even further and the break from Catholicism and the recent divorce of the Holy Roman Emperor's daughter Catherine of Aragon raised the specter of an Imperial invasion.[28] However, severing ties with the Pope had also created a unique opportunity; Henry could follow the example of many German Protestant princes and expropriate his country's monasteries. Monasteries controlled between a sixth and a twentieth of all land in England, and without the protection provided by the Catholic faith they were suddenly vulnerable.

A second motivation, more understandable to early modern reformers and therefore more emphasized at the time, was religious. Continental and English reformers alike had begun denouncing monasticism as superstition, a Papist deviation from true Christianity. Denunciations of monasticism as a whole were a key part of the propaganda of the Dissolution, with the Abbot of the Buckinghamshire abbey of Bittesden forced to confess that monastic life "dothe most principally consyst yn certayne dome [dumb] ceremonyes."[29] Monks prayed for the posthumous salvation of souls in purgatory,[30] a doctrine which had fallen out of popular fashion by the late fifteenth century and had recently been de-emphasized by English reformers.[31] Destroying religious houses thus served to underline the doctrinal changes that Henry had begun to implement. The suppression of friaries points toward this motivation

27. Frederick C Dietz, *English Government finance, 1485-1558* (Urbana : University of Illinois, 1921), 93, 97.

28. Ibid., 105.

29. Bernard G. W, "The Dissolution of the Monasteries," *History (London)* 96 (4 (324) 2011): 406.

30. Purgatory was only formally defined as part of Catholic doctrine in 1274, but the idea of prayer as a means of shortening the period of purification after death had been around since late antiquity.

31. R W Hoyle, "The origins of the dissolution of the monasteries," *The Historical journal* 38 (2 1995): 276.

as well. As mendicant orders,[32] most friaries had no property to speak of and were thus not an attractive target for a purely financially-motivated Dissolution.

Finally, the Dissolution helped to solve a serious political problem for newly-Protestant England. Many monks had been among the leading critics of Henry's divorce, and their loyalties remained suspect even after all of England's abbots had taken the 1534 Oath of Supremacy. The Pilgrimage of Grace—a 1536 rebellion covered in more detail below—may have hardened these views and pushed the Crown toward the total destruction of the monasteries, as reports of "traiterouse monkes" and "naughtie religiouse persons"[33] arming and encouraging the rebels seemed to confirm Royal suspicions.[34] Religious houses were potentially dangerous islands of religious and political resistance in a new Protestant kingdom.

In all likelihood, these three motivations reinforced each other. Lacking a concept of a firm division between "secular" and "religious" matters, the King as Head of the Church had the right and duty to ensure that the Church's resources were put to their proper use.

1.3 The Process of Dissolution

In 1535, Royal commissioners spread out across England, visiting every Church institution, including each of its more than eight hundred monasteries. Their stated goal was a survey of the income and expenditure of every church institution, to be compiled in the *Valor Ecclesiasticus* described above. In addition, the commissioners produced the *Compendium Compertorum,* an accounting of all the crimes and impieties (real or imagined) of the roughly twelve thousand monks and nuns of England.[35] This second document was presented to Parliament during deliberation on the Suppression of Religious Houses Act of 1535[36] and served as its moral foundation.[37] The Act formally dissolved all religious houses with an

32. Orders of monks funded through begging and donations rather than land revenues.
33. "Religious persons" was used to refer to members of religious orders, not simply pious individuals.
34. J. Clark, *The Dissolution of the Monasteries: A New History*, 285–6.
35. Ibid., 208.
36. The date of 1535 is due to a quirk of Parliamentary dating methods; the Act was passed in February 1536 and received Royal assent in April of that year.
37. J. Clark, *The Dissolution of the Monasteries: A New History*, 322–4.

annual net income under £200 with the intention that their inhabitants would take up the religious life in the larger houses of their orders.[38] It is unclear at this point whether a complete dissolution of monastic life in England was planned.[39]

After passage of the Act, the King's commissioners once again fanned out across England, suppressing most small monasteries and collecting petitions and fines for continuance from the rest.[40] As the commissioners approached one of the smaller monasteries in Louth, Lincolnshire, an angry mob arrived and drove them off. Despite quickly gathering thousands of men under arms, the Lincolnshire Rising was quickly dispersed, but sparks from the confrontation landed in the dry tinder across the Humber, sparking the largest rebellion ever faced by a Tudor monarch.[41] Marching under banners bearing the Five Wounds of Christ, the rebels of the Pilgrimage of Grace gathered in their thousands across the North, and were only dispersed by false Royal promises of clemency and a hearing of their grievances.[42] As mentioned above, the Pilgrimage may have been the spur for the dissolution of larger monasteries,[43] but some scholars argue that total suppression did not become policy until as late as summer 1538.[44]

While the Pilgrimage had delayed the dissolution of the smaller monasteries of the North, they were quickly suppressed over the course of 1537. At the same time, the Crown began to threaten the larger monasteries with dissolution, though still couched as a measure to correct abuses.[45] Here the eagerness of the King's commissioners, tearing into the greater abbeys in the hopes of keeping a piece for themselves, began to generate rumors of a complete dissolution.[46] The sense of futility in the face of Royal power was given a bloody edge by

38. G W O Woodward, *The dissolution of the monasteries* (London, 1969), 66.
39. Ibid., 71.
40. J. Clark, *The Dissolution of the Monasteries: A New History*, 357.
41. Anthony Fletcher and Diarmaid MacCulloch, *Tudor rebellions*, Rev. 5th ed. (Harlow, England, 2008), 48.
42. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536* (Manchester University Press, 1996), 386.
43. W, "The Dissolution of the Monasteries," 402.
44. J. Clark, *The Dissolution of the Monasteries: A New History*, 369.
45. Ibid., 361.
46. Ibid., 362.

the execution of the abbot of Jervaulx in 1537 and the abbots of Glastonbury and Whalley in 1539.[47] Gradually, the abbots of the great houses began to "voluntarily" surrender their houses to the Crown, and any holdouts were so continually harassed by Royal requests for money that they eventually buckled.[48] By 1540, the thousand-year history of monasticism in England had been brought to an abrupt end.

What happened when a religious house was dissolved? In advance of their dissolution, monasteries were ordered to preserve their goods, lands, and livestock before turning them over to the Crown.[49] Plate and jewels were carted off to fill the treasury and movable wealth was quickly sold.[50] In an act redolent with unintentional symbolism, church bells were melted down into bronze cannon and lead was stripped from monastic buildings to secure loans for war, collapsing their roofs and rendering their skeletons uninhabitable.[51] The destruction of monastic buildings had the advantage of making a resumption of monastic life impossible, and many monastic buildings that had not been thus destroyed were ordered to be torn down or even destroyed with explosives.[52] The results of removing monastic roofs can be seen in the grand ruins of Fountains Abbey (net income £1115, shown in Figure 1.2a) and Kirkstall Abbey (net income £329, shown in Figure 1.2b.

Suddenly deprived of monastic charity, many poorer locals near dissolved houses descended upon them and, in the words of one commissioner, "all things that myzt [might] be hadde they stole away."[53] Though the stripping of a monastery might seem to indicate a lack of sympathy for the religious, it appears to have been done out of opportunism rather than any deep-seated antipathy.[54] If a monastery was appraised as having a large quantity of valuable stone or brick, it was often left standing so that salvage rights could be sold to

47. Woodward, *The dissolution of the monasteries*, 114–5.
48. J. Clark, *The Dissolution of the Monasteries: A New History*, 372.
49. Woodward, *The dissolution of the monasteries*, 82.
50. Dietz, *English Government finance, 1485-1558*, 131.
51. Woodward, *The dissolution of the monasteries*, 126.
52. J. Clark, *The Dissolution of the Monasteries: A New History*, 379–80.
53. Ibid., 390–1.
54. Carter, "It would have pitied any heart to see: Destruction and Survival at Cistercian Monasteries in Northern England at the Dissolution," 90.

(a) Fountains Abbey **(b)** Kirkstall Abbey

Figure 1.2: Author's Dog and Ruined Yorkshire Abbeys

private actors, raising additional funds for the Crown.[55] Other monastic buildings—often sites of industry before the Dissolution—were quickly re-opened as workshops by their new owners or lessees.[56] Many of the gentry who purchased rural monastic properties used the stone from their buildings to construct or renovate their grand country homes.[57] Many others, though, were left standing in the countryside, slowly crumbling as rain came in through broken roofs, serving as visible reminders of the Dissolution.

The immediate benefits to the Crown were enormous. The plate seized from monasteries alone was taken to the Treasury and melted into bullion, yielding roughly £75,000, almost twice the annual income of the Crown before the Dissolution.[58] The properties of the lesser monasteries generated approximately £32,000 annually for the Crown, while those of the

55. J. Clark, *The Dissolution of the Monasteries: A New History*, 401–3.
56. Ibid., 415.
57. GE Mingay, *The Gentry: The rise and fall of a ruling class* (Cambridge University Press, 1976), 45.
58. Woodward, *The dissolution of the monasteries*, 125.

larger monasteries brought in around £100,000, roughly quadrupling Royal revenues almost overnight..[59] The colossal windfall in land, goods, and plate generated by the Dissolution quickly overwhelmed the Crown's archaic revenue system, prompting rapid institutional innovation. Referred to by G.R. Elton as a "revolution" in state finance, the Court of Augmentations moved beyond the personal revenue system of the past and established a national and bureaucratic mechanism for administering Royal assets and revenues.[60] Despite this rationalization of the Tudor financial machinery, expenses mounted faster than income. War with France and Scotland produced huge expenditures, and the sale of monastic land was the quickest route to ready cash. The Crown had already sold two thirds of its ex-monastic land by 1547, generating £812,000 by the end of Henry's reign, and a further £314,000 under his son Edward.[61] Most of these sales were at the prevailing customary price of "twenty years' purchase" (twenty times the annual income derived from a parcel), and went to court favorites, nobles, but above all, the gentry.[62]

1.4 Resistance to the Dissolution

As mentioned above, the Dissolution coincided with the most dangerous revolt faced by any Tudor monarch. The causes of this revolt have been debated since the event, owing largely to the broad range of grievances put forward by the participants. In the second paper of this thesis, I weigh in on this debate using data on rebel musters combined with my own dataset derived from the *Valor Ecclesiasticus*.

The first major school of thought, most forcefully advanced by Richard Hoyle, situates the Pilgrimage in the long tradition of Northern tax revolts. Both Henry VIII and his father had substantially increased their fiscal exactions, and tax concerns featured quite prominently in

59. W G Hoskins, *The age of plunder : King Henry's England, 1500-1547* (London etc. : Longman, 1976), 121, 131–2.

60. G R Elton, *The Tudor revolution in government : administrative changes in the reign of Henry VIII* (Cambridge U.P, 1953), 211–12.

61. Peter Cunich, "The Dissolutions and their Aftermath," chap. 13 in *A Companion to Tudor Britain* (John Wiley & Sons, Ltd, 2004), 234.

62. W G Hoskins, *The age of plunder : King Henry's England, 1500-1547*, 143–7.

rebel grievances.[63] Hoyle estimates that roughly one third of all coins in circulation had been collected in taxes between 1522 and 1527, with local tax records confirming a precipitous drop in private wealth.[64] Fiscal extraction hit particularly hard in the poorer and more sparsely populated North. Far from the centers of Royal power, Yorkshire seen recent risings against taxation in 1489 and 1513.[65] Many of the men who carried news of the Pilgrimage throughout the North were from Richmondshire, a center of tax resistance and the core of the 1513 rising, leading Hoyle to assert that the Pilgrimage was, on the whole, a continuation of previous tax revolts.[66] In this view, any potential opposition to the Dissolution merely provided the oxygen that reignited the long-smoldering tax grievances that were the true cause of the rebellion.

Another major potential cause for the Pilgrimage concerns rumors of popular religious changes. This argument is *also* most forcefully made by Hoyle, though a few years after the previous one. He identifies three main types of rumors: new taxes (the least important), confiscation of church goods (the most widespread), and the tearing down of parish churches (the most traumatic).[67] The flashpoint of the entire Pilgrimage came at Louth, whose people had recently renovated their parish church and viewed it with a great deal of pride. Men who had been guarding the church's valuables to prevent the rumored seizure attacked the King's commissioners, leading to the Lincolnshire Rising and the Pilgrimage of Grace.[68] Some evidence of this view can also be seen in the actions of the rebels themselves, as they organized at the parish level and swore oaths in defense of established religion.[69] The Dissolution looms somewhat larger in this view, if only because it added credibility to rumors

63. Michael L Bush, "'Up for the Commonweal': The Significance of Tax Grievances in the English Rebellions of 1536," *The English historical review* 106 (419 1991): 304.

64. R W Hoyle, "Taxation and the Mid-Tudor Crisis," *The Economic History Review* 51 (4 1998): 657, 662–3.

65. RW Hoyle, "Resistance and manipulation in early Tudor taxation: some evidence from the North," *Archives* 20, no. 90 (1993): 160.

66. Ibid., 174.

67. R. W. (Richard W.) Hoyle, *The pilgrimage of grace and the politics of the 1530s* (Oxford: Oxford University Press, 2001), 88–91.

68. Fletcher and MacCulloch, *Tudor rebellions*, 28–9.

69. Andy Wood, *Riot, rebellion and popular politics in Early Modern England*, Social history in perspective (Basingstoke: Palgrave, 2002), 51.

of religious changes and provided striking visual examples of what might happen to beloved parish churches.

Finally, the third major school of thought on the Pilgrimage, advanced by Michael Bush, puts the emphasis squarely on the Dissolution and its economic effects. The leaders of the Stapulton Host, the first army to rise in rebellion, pointed to the loss of monastic hospitality and employment as primary motivations for revolt.[70] Monastic hospitality was all the more important in the more sparsely-populated North,[71] and Robert Aske, later the leader of the entire revolt, pointed to its crucial role in sustaining the Northern grain trade.[72] Statements by rebels also indicate that they understood the Dissolution as primarily benefiting the exploitative gentry, adding class oppression to the list of grievances generated by the Dissolution.[73] They feared the overturning of tenant right and the uncertainty that would be created by a mass expropriation of monastic land.[74] Rebels also insisted on the restoration of suppressed religious houses until their cases could be heard in court.[75] In fact, all but one host specifically pointed to the Dissolution in either their letters of demands or their oaths to each other.[76]

My second paper provides the first econometric evidence in this debate. Combining Bush's maps of rebel musters, shapefiles of the Roman road network and early modern shipping routes, and my *Valor Ecclesiasticus* data, I model the spread the news of the confrontation at Louth and conduct a statistical analysis of the factors that may have contributed to revolt. I pit the first and third explanations against each other—the second is beyond my capacity to test: rumors are scarcely measurable now, let alone five centuries in the past—comparing the predictive power of taxation levels and changes versus a raft of

70. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 44.
71. Kerr, "Cistercian hospitality in the later Middle Ages," 38.
72. Scott Michael Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7* (Royal Historical Society, 1981), 12.
73. Wood, *Riot, rebellion and popular politics in Early Modern England*, 59.
74. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 276.
75. Fletcher and MacCulloch, *Tudor rebellions*, 38.
76. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 44–6, 94–5, 163, 198, 227, 234–5, 276, 343.

monastic variables. I find that the strongest predictor of revolt is the presence of monastic land, and more specifically monastic tenants, in a parish. This provides more evidence in favor of Bush's view: that the economic impacts of the Dissolution were the crucial factor motivating men to take up arms against their government.

1.5 The Dissolution's Long Shadow

Most discussions of the long-term effects of the Dissolution tend to view it as contributing to the rise of the gentry, the class just below England's great aristocratic landowners. They also tend to take a very positive view of its long-term economic effects. The third paper investigates both of these questions, tracking the families of monastic land purchasers and examining the structural effects of the Dissolution in Devon.

Much of the discussion of the consequences of the Dissolution centers on the gentry. Expressed most lyrically by Tawney, "[t]he settlement of monastic estates into the hands of the most progressive element in rural society" is still the basis upon much of this research stands.[77] Tawney sees the Dissolution as the starting gun for the accumulation of gentry power, providing more capitalistically-minded men of ambition with readily-available land that they could convert into long-term stability and political power.[78] Other authors take a more moderate view, but still see the Dissolution as accelerating the rise of the gentry to economic and political prominence.[79] The growth of gentry power slots neatly into Brenner's view in which the growing power of landlords at the expense of their tenants was an essential element in the development of agrarian capitalism.[80] Similarly class-oriented historians see in the Dissolution a semi-conscious plan by the Crown to restructure power and wealth in the countryside in its favor, using former monastic lands to set the gentry up as a counterweight

77. R. H. Tawney, "The Rise of the Gentry, 1558-1640," *The Economic History Review* 11, no. 1 (1941): 26.
78. Ibid., 23–4.
79. Woodward, *The dissolution of the monasteries*, 163.
80. Robert Brenner, "Agrarian class structure and economic development in pre-industrial Europe," *Past & present* 70, no. 1 (1976): 61–3.

to the great magnates.[81] The destruction of monastic poor relief and the greater power given to landlords also helped to set the stage for agrarian capitalism in the English countryside, with the share of wage workers going from less than ten percent before the Dissolution to over thirty percent by 1600.[82] Works in this vein tend to see the Dissolution as at least accelerating the movement toward market capitalism by empowering the gentry.

Another strand of literature on the Dissolution sees it as breaking down legal barriers and freeing up productive capital, leading to higher productivity. This view, recently articulated by Heldring, Robinson, and Vollmer, sees the Dissolution as a spur for the commercialization of land, increasing agricultural productivity and eventually contributing to industrialization.[83] Related literature on German states views their monastic dissolutions as prompting a shift into more productive secular uses of human and physical capital.[84] The Dissolution may also have been a spur to growth in many smaller and medium-sized towns. Religious houses had often hampered town growth by limiting in their environs and controlling commerce.[85] In addition, monastic dominance of town government had often hampered business interests and the suddenly-vacant buildings provided new sites for commerce and industry.[86] These works also see a through-line from the Dissolution to agrarian—and sometimes to industrial—capitalism, but the star here is the market itself rather than any one class.

A third school of thought disputes the final link in both of these chains. Overton, while acknowledging that virtually *all* net gains from the Dissolution were made by the gentry, locates the rise of agricultural productivity in England firmly in late eighteenth and early

81. Richard Lachmann, *From manor to market : structural change in England, 1536-1640* (Madison, Wis. : University of Wisconsin Press, 1987), 29.

82. Ibid., 103, 141.

83. Leander Heldring, James A Robinson, and Sebastian Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," *The Quarterly journal of economics* 136 (4 2021): 2093.

84. Davide Cantoni, Jeremiah Dittmar, and Noam Yuchtman, "Religious Competition and Reallocation: the Political Economy of Secularization in the Protestant Reformation," *The Quarterly Journal of Economics* 133 (4 2018): 2065, 2072, 2076.

85. Richard Holt and Gervase Rosser, eds., *The Medieval Town in England 1200-1540* (Routledge, 1990), 117–8.

86. J. Clark, *The Dissolution of the Monasteries: A New History*, 495–6.

nineteenth century.[87] Similarly, Allen centers yeoman farmers rather than the gentry as the true drivers of agricultural productivity.[88] Authors like Bettey and Mingay point to the conspicuous and unproductive consumption of the new gentry class[89] and emphasize the desire of its members to imitate older aristocrats, disputing the idea that this class was uniquely capitalistic in its outlook.[90] This view sees the Dissolution as assisting the rise of the gentry, but do not see it as a watershed event in the history of English economic development.

The third paper in this thesis investigates the interrelated questions of the rise of the gentry and the long-term economic effects of the Dissolution. Focusing on Devon allows me to make use of the enormous quantity of material produced by its genealogists and archivists, using machine learning to create a full dataset of four tax assessments spanning three centuries. Using this dataset, I track the fortunes of those who share surnames with the purchasers of monastic land and compare them to their equally-wealthy and numerous contemporaries who did not. I find that purchasers of monastic land secured a long-lasting wealth advantage for their descendants that is still detectable three hundred years after the Dissolution. Turning to the structural impact of the Dissolution, I find far more evidence to support the third view outlined above than either of the other two. Monastic land is correlated with slightly higher tertiary employment at the parish level, but this effect disappears when I move up to the hundred level.[91] This paper provides new information on the fate of monastic land purchasers and their families, and throws some sand in the gears of simple models tying the Dissolution to greater economic development.

87. Mark Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850* (Cambridge ; New York : Cambridge University Press, 1996), 168, 198.
88. Robert C. Allen, *Enclosure and the Yeoman: The Agricultural Development of the South Midlands 1450-1850* (Oxford University Press, April 1992), 18.
89. JH Bettey, *Suppression of the Monasteries in the West Country* (Sutton Publishing Ltd, 1989), 146.
90. Mingay, *The Gentry: The rise and fall of a ruling class*, 148–53.
91. The administrative level above the parish.

1.6 Thesis Roadmap

This thesis starts on the eve of the Dissolution in 1535, then zooms in geographically in order to zoom out temporally, I begin by laying out the cornerstone of the entire thesis: a new dataset drawn from the *Valor Ecclesiasticus*, the survey of all Church property, income, and taxable expenses conducted immediately before the Dissolution. I then examine one of the contemporary responses to the destruction of the monastic system, an enormous Northern rebellion called the Pilgrimage of Grace. Finally, I focus on Devon to examine the fate of monastic land purchasers and their families in the three hundred years following the Dissolution, as well as any structural economic changes the Dissolution may have inaugurated.

1.6.1 Paper 1

In my first paper, I set forth a new dataset created from the *Valor Ecclesiasticus*. Selecting a stratified sample to ensure complete geographical coverage, I translate and enter every item of income or expenditure for two hundred English monasteries. By georeferencing the source or destination of each item, I can provide an unprecedented look at the system destroyed by the Dissolution.

1.6.2 Paper 2

The second paper concerns a long-running debate in English historiography: the Pilgrimage of Grace. A massive revolt that broke out during the first round of dissolutions in 1536, In the second chapter, I fill in the *Valor* data for all monasteries in the North of England as well as Lincolnshire. I then use this data to weigh in on the debate over the causes of the Pilgrimage.

1.6.3 Paper 3

The final paper investigates the long-term impacts of the Dissolution on both the families of monastic land purchasers and the broader economy. Focusing on Devon allows me to use the unparalleled wealth of sources created by that county's genealogists and archivists to track the rise and fall of specific surnames over the course of the three centuries following the Dissolution. I then use these names and land data from the *Valor* to investigate the broader economic effects of the Dissolution.

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Chapter 2

The *Valor Ecclesiasticus*: A New Dataset

2.1 Introduction

The Dissolution of the Monasteries between 1536 and 1540 was the largest single transfer of property in English history since the Norman Conquest, with at least five percent of all land in England changing hands and tens of thousands of pounds in tithes redirected in the space of five years.[1] With an estimated 11% of the value of English agricultural production flowing through the monastic system, its sudden redirection likely had enormous consequences for the English economy.[2] Henry VIII followed up his unprecedented seizure of property with an equally unprecedented sale, and promptly spent the money prosecuting the long-running English power struggle with France.[3] The main beneficiaries of Henry's seizure and sale of the religious houses were the rising gentry class, who snapped up ex-monastic land so quickly that land prices scarcely fell despite the glut of new land entering the market.[4] This

1. Woodward, *The dissolution of the monasteries*, 4–5.
2. Calculated using Broadberry's estimates of English agricultural production and treating both tithe and land income as part of "the value of agricultural production."
3. Patrick K. O'Brien and Philip A. Hunt, "England, 1485–1815," in *The Rise of the Fiscal State in Europe c.1200–1815* (Oxford University Press, 1999), 58.
4. Woodward, *The dissolution of the monasteries*, 131.

redistribution of roughly an eighth of English agricultural revenue from semi-public spiritual institutions to private hands had enormous effects on the English countryside.

This paper uses the *Valor Ecclesiasticus*, a comprehensive survey of Church possessions in 1535, to create a new dataset detailing the money entering and leaving the English monasteries in the last year before their dissolution. By creating and georeferencing an entry for every yearly figure going to or from each monastery, this dataset provides an unprecedented level of granularity and detail and lays the foundation for much deeper quantitative examinations of the Dissolution of the Monasteries than has been feasible in the past. I can now, for the first time, examine the flow of income and expenditure through the monastic system, uncovering its geographic spread and the overall flow of money into and out of each region or urban area. This dataset also allows quantitative and statistical investigation of claims made by traditional historians working from either high-level aggregates or individual case studies, confirming or disconfirming the generalizability of such claims. The level of detail, georeferencing, and preservation of connections between monasteries and their sources and destinations for income and expenditure will allow us to see better than ever the contours of the shock that hit the English countryside between 1536 and 1540.

2.2 Background and Literature Review

2.2.1 The Monastic Landscape

Monasteries were the physical representation of a transaction between man and God, "purgatorial"[5] institutions dedicated to accelerating their founders' and benefactors' escape from torment in Purgatory.[6] Religious houses were also central players in the salvation of ordinary people, with small houses in particular housing a huge number of relics and pilgrimage sites

5. Even before the formal definition of Purgatory as a location where sin was posthumously purged, early medieval Christianity saw prayers for the dead as a means to accelerate the process of purification before entry into Heaven.

6. R W Hoyle, "The origins of the dissolution of the monasteries," 276.

for those too poor to make a major pilgrimage to Canterbury or the Continent.[7] It is worth remembering when considering the monastic economy that, at their core, monasteries were salvation factories which converted grain, meat, wine, and cloth into prayer.

The vast majority of religious houses were founded in the couple centuries after 1066, before the Statutes of Mortmain[8] were implemented in the late 13th century and rigorously enforced in the late 14th.[9] Often the oldest single structure in an area, they formed the nuclei of many villages across England, with town streets and farmers' fields conforming to a pattern laid out by the monastery.[10] They played a key role in regulating commerce, and often set unofficial limits on the expansion of the suburbs of larger towns.[11] Monks also shaped their local landscape through hydraulic engineering, particularly through canal-building and drainage in the East Anglian fens.[12]

In the early modern period, religious houses often performed a wide range of semi-public functions, combining the roles of welfare office, school, and pension provider. Almsgiving was one of the principal religious missions of all monastic institutions, and scholars have estimated that approximately 7% of monastic income was devoted to alms for the local poor.[13] Monasteries also played a key role in education during the late medieval and early modern period, though some scholars have disputed their importance.[14] They were also early public-facing financial institutions, combining the advantages of organizational immortality with large assets and incomes. To individuals, they sold annuities and corrodies which would support purchasers in their old age.[15] At a larger scale, monasteries also helped to finance

7. Heale, "Training in Superstition? Monasteries and Popular Religion in Late Medieval and Reformation England," 424–5.

8. The Statutes of Mortmain (literally, the "dead hand" of a perpetual institution) made posthumous gifts of land to religious institutions rather than living individuals nearly impossible once fully enforced.

9. Sandra Raban, "Mortmain in medieval England," *Past & Present*, no. 62 (1974): 3, 16.

10. J. Clark, *The Dissolution of the Monasteries: A New History*, 25.

11. D J Keene, "Suburban Growth," in *The Medieval Town in England 1200-1540*, ed. Richard Holt and Gervase Rosser (Routledge, 1990), 117–8.

12. Duncan Sayer, "Medieval waterways and hydraulic economics: monasteries, towns and the East Anglian fen," *World Archaeology* 41 (1 2009): 145.

13. Rushton and Sigle-Rushton, "Monastic Poor Relief in Sixteenth-Century England," 215–6.

14. Woodward, *The dissolution of the monasteries*, 19–20.

15. Ibid., 24.

projects as diverse as water management,[16] parish churches, and housing.[17]

Finally, monasteries were substantial sources of demand in local economies, analogous to large aristocratic houses. The monks of Durham left voluminous records, allowing their spending to be reconstructed in considerable detail and providing an insight into monastic purchasing. They drew much of their sustenance from their tenants, receiving about 98% of their grain and half of their meat and poultry from the residents of their estates.[18] Despite these figures, most rent was still paid in cash, which paid for wine, spices, clothing, and repairs to monastic buildings.[19] The wine was usually French, sourced from local ports,[20] while cloth often came from inland manufacturing centers.[21] Monastic income was thus spread across a wide geographic area and provided at least some benefit to most classes in local society.

2.2.2 The Dissolution of the Monasteries

One of the primary motivations for producing this dataset is to improve our understanding of the Dissolution. An almost singular event in English social and economic history, the Dissolution had profound and long-lasting effects, particularly on rural society. It began in 1535 with the collection of information for the *Valor Ecclesiasticus* and *Compendium Compertorum*, material and moral surveys of the monasteries respectively, of which more will be said below. Following hot on the heels of the surveys was the first Act of Suppression, which empowered Royal commissioners to close all monasteries with a net income under £200 per year and seize all of their goods and lands unless they had reached an agreement with the King to continue their religious life.[22]

The Dissolution likely had a profoundly negative immediate effect on English rural soci-

16. Sayer, "Medieval waterways and hydraulic economics: monasteries, towns and the East Anglian fen," 145.
17. W G Hoskins, *The age of plunder : King Henry's England, 1500-1547*, 161.
18. Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.*, 143, 146.
19. Ibid., 145.
20. Ibid., 91–3.
21. Ibid., 149–51.
22. Woodward, *The dissolution of the monasteries*, 68.

ety, particularly for the poor. As the monks had a religious duty to care for local paupers, they often provided alms and employment which kept the destitute from starvation.[23] The *Compendium Compertorum* revealed the shocking fact that the surveyed houses contained nearly three times as many lay dependents as professed monks, a strong indication of the importance of religious houses to the local poor.[24] This figure demonstrates the deep connections that many monasteries had with their local communities, serving as a safe harbor for the truly desperate.

In addition to their importance to the poor, the monasteries also held deep importance for many of the richer laity. Popular "books of hours" instructed wealthier literate laymen in imitating the piety of the cloister[25] and some joined confraternities of lay brothers and sisters attached to their local monasteries.[26] Prominent local families were patrons of their nearby monasteries, often had multiple generations of their family buried within the monastery, and knew the monks inside were praying for the deliverance of their ancestors from Purgatory.[27] Indeed, the century leading up to the Dissolution seems to have seen a peak in relations between monasteries and their secular neighbors as religious houses shifted toward recruiting from their own estates and local communities.[28] The Dissolution would thus have been an enormous economic and spiritual shock to local society.

In the short term, the government was the primary beneficiary of the Dissolution. The raiding of monastic treasuries and the sale and exploitation of monastic lands brought in £130,000 per year from 1536 to the end of Henry VIII's reign, more than doubling the estimated £100,000 in annual government revenue in the preceding decades.[29] The substance of the entire monastic system was pulled into the war with France, with bells melted into

23. Lachmann, *From manor to market : structural change in England, 1536-1640*, 103.
24. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 221.
25. Duffy, *The stripping of the altars : traditional religion in England, c.1400-c.1580*, 210.
26. J. Clark, *The Dissolution of the Monasteries: A New History*, 71–2.
27. Thompson, "Monasteries and their Patrons at Foundation and Dissolution (The Alexander Prize Essay, proxime accessit)," 108.
28. James G Clark, "Religion and politics in English monastic towns," *Cultural and Social History* 6, no. 3 (2009): 278–9.
29. Dietz, *English Government finance, 1485-1558*, 138–140.

cannon and lead stripped from the roofs to secure war loans.[30] While the Dissolution provided a windfall, the 1542-7 war consumed an estimated £2 million, forcing the sale of what the King and his councilors had originally intended to be a permanent part of the Royal patrimony.[31]

These sales and grants to political favorites fundamentally changed the face of the English countryside. Henry VIII gave approximately 16% of the land thus seized to court favorites, sold another 44% (largely to the rising gentry class, somewhat less to existing large landowners), and his successors continued the sell-off until nearly all monastic lands had found their way to private and secular hands.[32] This represented a massive net transfer from clergy to gentry and fundamentally changed the political economy of the countryside.[33] The newly empowered gentry class simultaneously served as useful agents extending Royal power deep into the countryside and could be used to balance the power of the great magnates who had previously held most rural power.[34] This class is also singled out by authors like Heldring, Vollmer, and Robinson as the crucial agents of innovation, agricultural change, and eventually the Industrial Revolution, discussed in far more detail below.[35] A detailed understanding of the effects of this massive transfer of wealth requires detailed data on the pre-existing distribution of land and flow of money.

2.2.3 Previous Uses of the *Valor Ecclesiasticus*

Perhaps the most comprehensive and wide-ranging past use of the *Valor* is the 1909 book *English Monasteries on the Eve of the Dissolution* by Alexander Savine. He provides a broad overview of the information contained in the *Valor*, highlighting both its strengths and weaknesses as a record, and his text has proved invaluable in shaping my own thinking

30. Woodward, *The dissolution of the monasteries*, 126.
31. Dietz, *English Government finance, 1485-1558*, 147.
32. Joyce A Youings, "The terms of the disposal of the Devon monastic lands, 1536-58," *The English Historical Review* 69, no. 270 (1954): 29–30, 33–34.
33. Lachmann, *From manor to market : structural change in England, 1536-1640*, 98.
34. Ibid., 23, 29–30.
35. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," 2093.

on the document.

Savine points out that the *Valor* tends toward undervaluation relative to other surveys, particularly those conducted once the monasteries had been dissolved. He uses these surveys to check the figures in the *Valor*, and points out that the latter undervalues monastic possessions by a maximum of around 25%.[36] However, as he also points out, the incentives acting on those supplying information in the pre- and post-Dissolution surveys pushed in opposite directions. In pre-Dissolution surveys, the monks were tasked with providing figures that would be used to calculate taxes so had every incentive to undervalue their estates and possessions. After Dissolution, the Royal surveyors had every incentive to *over*value those same possessions to maximize the windfall when selling to private buyers.

Savine laid the groundwork for a bird's-eye, data-driven view of the English monasteries, adding up a total of £136,361 of net income.[37] He calculates that a total of around £14,000 of monastic income was drawn from urban areas, slightly under one tenth of the gross income.[38] Savine also asserts that monastic alms were unlikely to have been substantially more than the alms reported by the *Valor*, a claim of which I am skeptical for reasons outlined below.[39]

I plan to build on the foundation laid out by Savine, using modern technology and techniques to add to the picture of the monastic landscape he put forward over a century ago.

2.2.4 Heldring, Robinson, and Vollmer

The most extensive use of the *Valor Ecclesiasticus* in generating a complete dataset is found in the "The Long-Run Impact of the Dissolution of the English Monasteries" by Leander Heldring, James Robinson, and Sebastian Vollmer. Using the *Valor* and an enormous range of other data sources, they show that monastic land in a given parish is associated with a

36. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 74.
37. Ibid., 100.
38. Ibid., 119.
39. Ibid., 265.

host of economically significant variables. According to Heldring, Robinson, and Vollmer, the lands of dissolved monasteries were far less likely to have copyhold tenure, which made the land far easier for its new owners to sell. This ease of sale led to more efficient allocation of both land and labor as the land found its way into the hands of (mostly gentry-class) improving landlords.[40] Later, the parishes containing former monastic lands would have more gentry residents, higher crop yields, more agricultural patents, and more textile mills.[41] The authors marshal an enormous amount of data to draw a convincing series of causal links between the Dissolution and the Industrial Revolution.

There are, however, crucial differences between their dataset and mine. Most importantly, their dataset only includes land income, while the one presented in this paper includes all sources of monastic income, as well as deductible expenditures, explained in more detail below.

While almost 70% of the income of the entire monastic system came from land, this was concentrated in the hands of the larger monasteries while most smaller monasteries drew more of their income from tithes. Tithe collection was a crucial site of interaction between monasteries and local communities, and the parishes which were "appropriated" to a monastery (i.e. directed their tithes to the monastery) had close but often fraught relationships with those houses.

In addition, the authors of the above study were focused on the long-run impacts of the transfer of land ownership, so they coded monastic landholding at the parish level rather than as points based on villages. They also broke the links between individual monasteries and their landholdings, leaving the dataset unable to show the flow of monastic income and expenditure around England. Restoring these links and adding granularity in location substantially increases the usefulness of the data contained in the *Valor* to examine issues like the long-term effect of the sudden disappearance of monastic poor relief before parish

40. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," 2094–5.
41. Ibid., 2138–9.

relief became mandatory, the role of the Dissolution in provoking the Lincolnshire Rising and the Pilgrimage of Grace, and the effect on monastic towns of the sudden disappearance of their historical *raison d'etre*.

2.2.5 This Paper's Contribution

Previous historical work on the English monasteries during this period has generally taken one of two paths. The first, epitomized by Savine's 1909 *English Monasteries on the Eve of the Dissolution*, uses the *Valor Ecclesiasticus* in combination with sources like commissioners' reports and later valuations to paint a picture of the monastic system in the aggregate.[42] However, without location data on income and expenses, these studies are unable to answer questions on the geographic scope of economic interactions between monasteries and their secular surroundings. In addition, the lack of a dataset produced by such studies prevents future economic historians from conducting any new investigations based on previous work. The solution to these issues in the historical literature has traditionally come from case studies. With authors like Barbara Harvey[43] and Miranda Threlfall-Holmes conducting highly-detailed studies into Westminster and Durham respectively, marshaling a far more impressive range of sources than I do here, case studies can show the interaction between monasteries and their surroundings in far more detail.[44] What these studies tend to lack, however, is representativeness and generalizability. They tend to focus on the largest monastic institutions with the best-preserved records; a natural choice given the detail these documents provide but problematic for drawing conclusions about English monasteries in general. I see this dataset as filling a crucial middle space between these two dominant modes of study: broad enough to draw large conclusions but detailed enough to investigate individual regions, orders, or houses—and, of course, in a format immediately useful to future economic historians.

42. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*.

43. Barbara Harvey et al., "Westminster Abbey and its estates in the Middle Ages," *OUP Catalogue*, 1977,

44. Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.*

The existing dataset that comes closest to fulfilling this ideal is that produced by Heldring, Robinson, and Vollmer.[45] However, their dataset was produced to study the persistence of the effects of monastic land, not the monastic system itself. While the dataset of the quantity of monastic land in each parish is more useful for persistence studies concerned with land use, including other variables is essential for a study of the full impact of the Dissolution, particularly in the short- to medium-term. A large proportion of the income of each monastery was collected in tithes, and many of these tithes were redirected to the secular purchasers of monastic land. In addition, this dataset contains important information on the dense network of religious transfers in which the monasteries were embedded, with both larger and smaller religious institutions both sending and receiving large transfers. A full picture of the social and economic interaction between monasteries and secular society requires a picture of these variables.

Even with respect to land, the granularity of this dataset has distinct advantages. This dataset preserves information on the value of land at each individual location, as well as parishes in which land is owned by multiple monasteries, instead of collapsing this into a single parish land value. This allows much closer analyses, particularly those which investigate increases in farm size over the centuries after the Dissolution, potential persistent effects of the properties or houses of different orders, etc.

A full dataset based on the *Valor Ecclesiasticus* will provide an opportunity for much deeper quantitative work relating to the dissolution of the English monasteries and will hopefully be a useful tool for future researchers.

2.3 The *Valor Ecclesiasticus*

The *Valor Ecclesiasticus* is a survey of all Church property in England conducted in 1535, immediately preceding the Dissolution of 1536-40. Initially motivated by the desire to collect

45. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries."

"First Fruits and Tenths,"[46] the Crown set out to determine the annual income of all religious institutions in the country.[47] Groups of commissioners went to the bishop of each diocese and requested a list of all deaneries[48] within their purview, as well as all religious institutions contained in each deanery. Commissioners then divided into groups of at least three, distributed the deaneries between the groups, and traveled to each religious institution on their list. At each institution, the "incumbent" (primary office-holder), as well as their receivers and auditors, were examined under oath concerning their income and expenditure and were required to provide their account books to the Commissioners. The Commissioners recorded the information given to them, and the account books of each team of Commissioners were combined to create the *Valor Ecclesiasticus*.[49]

Property (in land or tithe rights) during this period was generally referred to by the yearly income it would yield rather than its purchase price, a convention followed in the *Valor*. Each religious house is recorded with its sources of income broken down into an itemized list, generally beginning with the monastery's temporal possessions. Each village or parish in which the monastery owned land or mills is listed along with the yearly proceeds[50] in pounds, shillings, and pence. The temporal section also includes any profits of woods, fisheries, mines, courts, etc. The spiritual income section includes any tithes from parish churches or transfers from other religious institutions sent to the monastery.

Finally, the commissioners made deductions for rents paid to other landowners, alms required to be disbursed yearly, fees to secular officials, and religious transfers. These expenses were subtracted from the monastery's income to produce a taxable "net income" figure.[51] The only alms explicitly mentioned in the Commissioners' instructions as permissible de-

46. A lump sum of one year's income net of permitted deductions described below, then one tenth of net income annually.

47. Joseph. Hunter, *An introduction to the Valor Ecclesiasticus of King Henry VIII : with a map of England and Wales showing the distribution in dioceses* (London: [s.n.], 1834), 14–15.

48. The unit of ecclesiastical administration between a parish and a diocese.

49. Hunter, *An introduction to the Valor Ecclesiasticus of King Henry VIII : with a map of England and Wales showing the distribution in dioceses*, 19–20.

50. This could be rents or proceeds from land farmed by the monks themselves.

51. Hunter, *An introduction to the Valor Ecclesiasticus of King Henry VIII : with a map of England and Wales showing the distribution in dioceses*, 23–4.

ductions were "annuell or perpetuall almes" along with "the names of the persons for whos soules suche almes ys destributed and gyven."[52] The Commissioners were inconsistent in applying this principle, as the entries for some houses contain alms recorded without the names of their original benefactors while some do not.

The survey is widely regarded as fairly accurate, particularly in recording land rents.[53] The amount of tithe and other spiritual income is somewhat less accurately reported, tending toward undervaluation but with very few outright omissions.[54]

2.4 Sampling Process

Due to the enormous size of the *Valor*, I have selected a stratified sample rather than entering all line items from each house. For each of five regions of England (Thames Basin, East Anglia, South and Southwest, the Midlands, and the North), I divided the National Archives' list of all religious houses in England (based on the *Valor*) into quartiles, then randomly selected ten houses from each quartile.[55] I also ensured that the largest house in each region was selected, as the largest house in each region is generally substantially larger than the second largest and failure to select it would have given a false impression of the monastic landscape in the region. For example, in the South and Southwest, the second- and third-largest houses had incomes of less than one-half, and one-third of that of the largest, Glastonbury Abbey. The list of 200 houses selected by this process forms the basis for this paper.

My selection process gives me the ability to make general statements about both the characteristics of individual houses in each region and the differences between regions. It preserves information about the distribution of houses of varying income levels and allows

52. *Valor ecclesiasticus temp. Henr. VIII. : Auctoritate regia institutus. Vol. I.* (London, 1810), n.p.
53. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 38.
54. Ibid., 48.
55. I selected only from houses with a net income figure given. Some houses, overwhelmingly members of mendicant orders of friars, have no listed income so were excluded from the sample.

meaningful calculations of median values.

As Wales was being incorporated into the administration of England during this period, I have chosen to exclude the Welsh monasteries from this analysis and focus on English monasteries only.

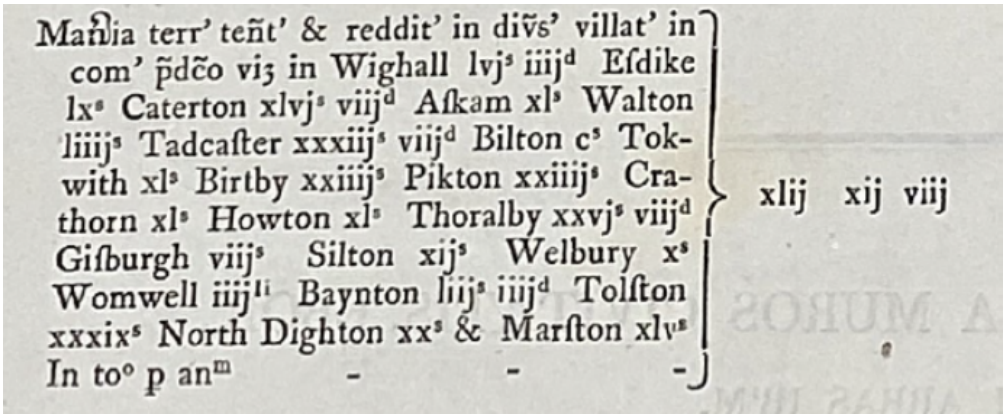
2.5 Data

2.5.1 Units of Analysis

Each line in the dataset represents a sum given in the *Valor Ecclesiasticus*, either a source of income or a deductible expense for a given house. These totals represent the value "communibus annis"—in an ordinary year—either drawn from or sent to a specific person or location. This fact is crucial: these are flows, not stocks. They are often drawn from wealth (land or the right to collect tithes) which after this period generally traded at a fixed value of twenty years' annual income, but each entry represents a yearly flow.[56] This flow could be in money or goods, as some entries indicate a value of grain, wax, pepper, or other goods changing hands, but most simply list a monetary value. Case studies of individual monasteries have indicated that a substantial portion of rents could be paid in grain, but different peasants paid in cash and in grain at different times and all rents are assigned a monetary value regardless.[57]

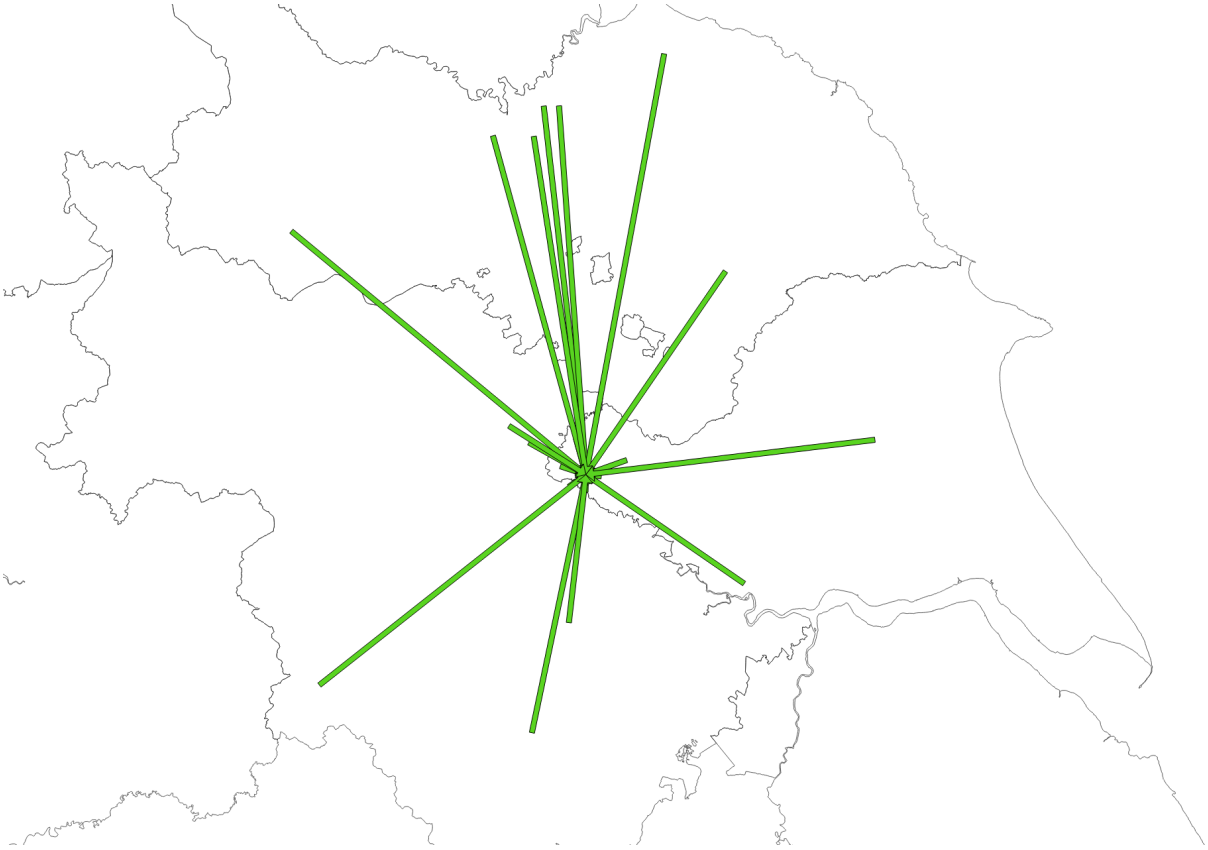
Each entry consists of the name of the religious house, the name of the person or place sending or receiving the money, the coordinates of the counterparty, the amount in pounds, shillings, and pence, the sum converted into pence, a series of categorical dummies described below, dummies indicating a multi-location entry (also described below), and the page number of the entry. For example, the entry in Figure 2.1a lists some of the "manors, lands, tenants, and rent in diverse villages" in the county of Yorkshire from which the priory re-

56. W G Hoskins, *The age of plunder : King Henry's England, 1500-1547*, 135.
57. Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.*, 143–5.


Mañia terr' teñt' & reddit' in diu̅s' villat' in com' p̃dc̃o viz in Wighall lvj^{s} iiij^{d} Eſdike lx^{s} Caterton xlvj^{s} viij^{d} Aſkam xl^{s} Walton liiij^{s} Tadcaſter xxxiij^{s} viij^{d} Bilton c^{s} Tokwith xl^{s} Birtby xxiiij^{s} Pikton xxiiij^{s} Crathorn xl^{s} Howton xl^{s} Thoralby xxvj^{s} viij^{d} Giſburgh viij^{s} Silton xij^{s} Welbury x^{s} Womwell iiij^{li} Baynton liij^{s} iiij^{d} Tolſton xxxix^{s} North Dighton xx^{s} & Marſton xlv^{s} In to^{o} p an^{m} - - -

xlij xij viij

(a) *Valor* Entry



(b) Georeferenced Data

Figure 2.1: *Valor* Entry and Georeferenced Data for Healaugh Park Priory

ceived money. The name of each village is listed, along with the value received therefrom in pounds, shillings, and pence. A total is given to the right of the entry which the commissioner then used to generate a net income figure for each religious house. My data entry process turns this entry into twenty-one lines, listing the monastery, the village, the amount,

and a dummy indicating that this is land income. This data can be seen overlaid on a map of Yorkshire in Figure 2.1b.

2.5.2 Categories

Each entry in the *Valor* is placed into one of fourteen categories, each indicated by a dummy. These categories are the core of much of the analysis that this dataset makes possible.

2.5.2.1 Land

Land is by far the largest category of income, and a substantial category of expenditure, comprising about 70% of income and 10% of expenditure in the median house in the sample. Land income came from the *demesne*, owned by the monastery and worked directly by the monks or by hired laborers, from the rent paid by tenants, or from lands leased to larger farmers in exchange for a *firma* or "farm." This income was always recorded in cash, but in a sizeable-enough minority of cases, quantities and prices of grain or animals are noted. Given that, based on case studies, it seems that monasteries were paid in kind by different tenants in different years, it is difficult to determine from just the *Valor* which entries were genuinely collected in cash or in kind.[58]

2.5.2.2 Tithe

Tithes, traditionally one tenth of income, grain, wool, or other goods produced in a parish, were variously seen by those who paid them as fulfilling a social and economic rather than spiritual function, or as a "rent" owed to God for his grace and were a crucial source of income for the Church.[59] The vicar of a local parish would be paid a salary by the monastery, who then kept the balance of the tithe to support the monks.[60] This income comprised roughly

58. Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.*, 143–5.
59. R N Swanson, "Pay Back Time? Tithes and Tithing in Late Medieval England," *Studies in Church History* 46 (2010): 124, 127.
60. Nicholas Orme, *Going to church in medieval England* (Yale University Press, 2021), 49.

one-fifth of the income of the median house in the sample, far behind the proportion of land income but far ahead of the next-largest source. In the *Valor*, tithes are sometimes split into the traditional division of the *"garb'"* tithe of grain which was easy to collect and comprised the lion's share of the tithe value, *"lan' et agnell'"* tithes of wool and lambs, and the *"minut' et privat'"* tithes which comprised most other tithes such as eggs and milk. Some monks, such as those of Durham, were known to collect only the *garb* tithe and leave the others to the vicars, so it is unclear to what extent entries which simply record a "tithe" with no descriptors encompass the smaller tithes such as wool, eggs, and milk.[61]

The tithe category also includes "portions," a fraction of a parish tithe split between the monastery and another institution. It also includes entries labeled as "glebe," the land surrounding a parish church. As glebe entries comprised a very small proportion of total income and glebe income flowed to monasteries through the same appropriation as tithes, these entries have been combined with tithe income. Like all other entries, the monetary value of tithes is given, with the amount of grain or other goods only occasionally listed.

Mortuary dues, traditionally the finest animal in a person's possession, or, failing that, their finest piece of cloth, were due to the parish priest but appear in some cases to have been sent to the monastery to which the parish church was appropriated. Being very similar to tithes and collected for the same purpose, they have been categorized as tithe income. They form a vanishingly small proportion of tithe income even in houses which record them, but should still be noted for completeness.

2.5.2.3 Transfer

The "Transfer" category is somewhat more expansive than the previous two, representing any transfer of money between two religious institutions outside of land rent, tithes, and synodals/procurations, discussed below. The bulk of this category is made up of *pencione* or *pensione* (pension) and *salarium* (salary) entries, but the category also includes transfers to

61. Ben Dodds, "Managing Tithes in the Late Middle Ages," *The Agricultural History Review* 53 (2 2005): 128–9.

churches to pay for candles, payments for singing of the mass in chapels, etc. This category also includes the payments for portions of tithes appropriated to the monastery but directed to other institutions, but not of course the portions for which the monastery itself may have been paying. Transfers made up 0% of income for the median religious house and comprised about 1.7% of all income in the sample, but accounted for nearly 30% of the median house's deductible expenditure. Much of this expenditure went to parish priests of churches appropriated by the monastery, but a substantial portion was often spent on pensions for the local bishop or archbishop. The small remainder tended to be sent to other religious houses, chantries (chapels where priests known as cantarists performed perpetual masses for the souls of dead founders), and religious hospitals.

2.5.2.4 Fees

Fees were payments to secular officials for the performance of duties on behalf of the monastery and as such are only recorded as expenditure. The most common officials were bailiffs (managers and rent collectors on manors owned by the religious house), stewards (the manor lord's representative *in absentia*), receivers (also called rent collectors), and auditors. The Commissioners' instructions state clearly that "recyvours bailifis auditors and stuardys only and none other officers" are deductible, so these offices make up nearly all of the approximately 30% of deductible monastic expenditure devoted to fees.[62] The only exceptions are a handful of ancillary officials such as substewards whose fees were not disallowed by the Commissioners. These entries are only georeferenced when tied to a location. Most simply name individuals and have thus not yet been georeferenced.

2.5.2.5 Alms

While there are a few entries which record *"elemosina"* or alms as income, these seem to be religious donations to a monastery rather than "alms" in the traditional sense, so I have

62. *Valor ecclesiasticus temp. Henr. VIII. : Auctoritate regia institutus. Vol. I.*, n.p.

categorized these entries as "Unknown/Other." The remaining entries describe alms as ordinarily understood: the provision of money, bread, beer, or other goods to local paupers. Monastic alms were a crucial form of redistribution in the deeply unequal late medieval and early modern world, with many paupers fully reliant on religious houses for the necessities of life. Some of the larger monasteries such as Westminster Abbey distributed alms to tens of thousands, with 14,000 paupers receiving alms during Eleanor of Castile's obit alone.[63]

The provision of alms for the poor was one of the chief function of monasteries, so it may be strange to see alms come in around 2% of recorded expenditure in the *Valor Ecclesiasticus*. This fact has been noted by other historians, who have used it to claim that pre-Reformation monasteries were failing in their duties to relieve the suffering of paupers.[64] This view is almost certainly incorrect. The instructions given to the Commissioners specify that only "annuell or perpetuall ... almes ... And the names of the p[er]sons for whos soules suche almes ys destributed and gyven" are to be deducted from a religious house's income.[65] The implication, followed by nearly all Commissioners, was that only perpetual alms coming from a donation of specific named individuals were deductible, leaving much ordinary almsgiving out. That the intent was unclear can be seen in the few examples in which Commissioners recorded ordinary alms which were then disallowed when the *Valor* was compiled. These can give us an idea of the size of the omission. For example, at Bilsington Priory, the deductible alms totaled £1, while non-deductible were 50% higher at £1, 10s. At Furness Abbey the total permitted deduction for alms was £11, 10s. It was accompanied by two disallowed entries totaling £33, 13s, 4d, making the total (recorded) alms given by the abbey nearly 300% higher than the allowed figure. The most extreme case I have yet found in the sample is Rochester Cathedral Priory, with 16s, 6d of deductible alms and £6, 7s, 9d of non-deductible alms, an enormous 775% of the deductible figure.

These non-deductible alms entries are different than most deductible ones, as they gen-

63. Harvey, *Living and Dying in England 1100-1540: The Monastic Experience: The Monastic Experience*, 29.

64. Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7*, 22.

65. *Valor ecclesiasticus temp. Henr. VIII. : Auctoritate regia institutus. Vol. I.*, n.p.

erally do not list a specific person for whose soul the alms are being given, so it is clear that these entries were not disallowed in only these cases while being allowed to slide in others. Most houses do not contain such non-deductible alms figures as most Commissioners had a clearer idea of which expenses were and were not deductible, but their presence in a few entries points toward an enormous amount of alms expenditure not captured by the *Valor* or by this dataset.

2.5.2.6 Synodals and Procurations

Synodal dues and procurations (often called proxies) were fixed dues paid to the local bishop and archdeacon respectively from parish churches. Monasteries had to pay these dues for any parish church whose tithes they had appropriated. While synods and proxies were technically transfers between two religious institutions, they are different in character from other transfers like pensions and salaries so have been separated out here. The mean house in the sample paid slightly less than 4% of its deductible income in synods and proxies.

2.5.2.7 Court

The *Valor* contains a large number of entries describing income from manorial courts and fines, making up about 1% of the mean house's annual income. As the lords of their manors, monasteries had the same rights to run manor courts and collect their fees that any secular landlord had.

The court incomes recorded by the *Valor* are rather suspect, however. As Savine points out, court income *should* be recorded for most manors owned by religious houses as the right to operate a manor court came with the ownership of a manor, but whole regions often lack recorded court income entirely.[66] There are even entries in the *Valor* which record fees paid by the monastery to a "steward of the court" but no court income, pointing toward either omission or the inclusion of court income in the land figures.

66. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 131.

Beyond this point, entries of each category appear infrequently enough that I will be discussing means instead of medians to be more informative and avoid repeating "0% of median income" too many times.

2.5.2.8 Mills

Some monasteries owned one or more mills which generated income. This income was relatively small, making up about 0.5% of monastic income. Given the emphasis on monastic mills in the literature, this may be an underestimate, and may reflect the folding of mill income into entries describing landed income, particularly in the entries of large monasteries where few details are given. There is an even smaller fraction of entries which record expenditure for either the rental or use of mills.

2.5.2.9 Infrastructure

A small number of monasteries have entries which record income from infrastructure (ferries in the North) or expenditure for infrastructure (the "scot and lot" collected for flood prevention in the South). Infrastructure expenses were not explicitly mentioned as deductible in the Commissioners' instructions, which may explain why scot and lot, theoretically classifiable as a rent because it was levied on land, was the only infrastructure expense recorded in the *Valor*.[67] The mean shares of income and expenditure made up by infrastructure are 0.03% and 0.3%, respectively.

2.5.2.10 Annuities

Annuities, sometimes sold by monasteries to raise funds and sometimes given at the request of the King, fell into somewhat of a gray area in the Commissioners' instructions. While they were tasked with recording "annuell and perpetuall rentts pensions almes and fees," annuities and corrodies (annuities for someone's retirement, often paid out in food and drink)

67. Sayer, "Medieval waterways and hydraulic economics: monasteries, towns and the East Anglian fen," 145.

are not explicitly mentioned. They do appear in a number of entries, however, making up about 0.03% of income and 0.6% of deductible expenditure in the mean house.

2.5.2.11 Education

Expenses for education are clearly disallowed by the Commissioners' instructions and nearly all recorded education expenditure was removed from the expenditure totals. However, some entries escaped the notice of the Commissioners or the Court of Augmentations, as they are not noted as disallowed. These entries make up a mere 0.1% of deductible expenditure.

2.5.2.12 Unknown/Other

This is the catch-all category for entries which have not yet been categorized, are unintelligible, need splitting (elaborated further below), or are unique enough that they don't get their own category. This category is currently at about 5% of income and 2% of expenditure, due mostly to large multi-source entries as described below.

2.5.2.13 Sums

These entries record the net income, and where it is given the total income and total expenditure given in the *Valor* These totals are notoriously imprecise, as the Commissioners and auditors at the Court of Augmentations made frequent adding and subtraction mistakes, but tend not to be too wide of the mark. Of course, including these entries in an analysis will lead to double- or triple-counting income and expenditure, so they are dropped from the dataset when analyzing the other entries.

2.5.3 Locations

Many entries followed the form of Figure 2.1a above, with sections first briefly describing the type of income or expenditure ("manors, lands, and tenants," "fees," "pensions and portions," etc.) and then listing a number of villages. Where possible, these villages were

georeferenced using both the Gazetteer of British Place Names and the GENUKI Gazetteer for coordinates, and the University of Nottingham's Survey of English Place Names and British History Online's Index of Persons and Places for Inquisitions Post Mortem for historical forms of modern places.

My first step in georeferencing was to search a series of letters that was relatively unlikely to have changed in the nearly five hundred years since the *Valor* was compiled, usually consonant clusters. This generally brought up a number of results, from which the most likely match was selected. For instance, in the entry pictured in Figure 2.1a, "Askam" was searched as "sk," bringing up "Askham," "Birtby" as "bir," bringing up "Birkby." If, as with Birkby, the name was similar enough phonetically and close enough geographically, the coordinates were used with the word "close" appearing in the notes section.[68] Failing this, I searched the more detailed maps used in a different section of GENUKI for any toponyms matching the name given, used the Gazetteer of British Place Names' "sounds like" search, checked variations in the University of Nottingham and BHO's databases. If no match could be made using these search functions, I turned to the Victoria County History volume containing the religious house in question, which usually contained the modern name of each town or village referenced in the *Valor*. If all of the above methods failed to uncover a likely match, I left the coordinates blank.

2.5.4 Merging With The National Archives' Dataset

The data described above was then merged with an educational dataset created by the National Archives which contains the name of the religious house, its coordinates, its county, diocese, and town, the religious order to which it belonged, the title of its members (monks, nuns, canons, etc.), its year of dissolution, and its mother house, if any.

This merge allowed me to create a series of two-point lines on the map of England, each representing the yearly movement of a certain amount of money or goods into or out of a

68. In this case, "Birtby" appears as a historical form of another village named Birkby

religious house. It also allows breakdowns by region, gender, and order which will provide some insight into the varied monastic landscape of England. Once finished it will provide an unprecedented view of the movement of money and goods through the entire monastic system, but with a sample it can provide a broad outline

2.5.5 The Dataset-Creation Process

The process of creating the dataset is laid out in Figure 2.2, with sources in round boxes and data in square ones. The sources of the *Valor* itself are the monasteries' account books themselves and the sworn statements of the abbots and their auditors to the King's Commissioners. This information was compiled into the *Valor Ecclesiasticus*, which was then condensed into the *Liber Valorum* containing only net income figures for taxation purposes. The National Archives used the *Valor* for net income figures, the *Liber* for those houses not listed separately in the *Valor* or for which the original rolls of the *Valor* had been lost, and other sources for location, order, and gender of houses. My main source is the 19th century Record Commission version of the *Valor Ecclesiasticus*, which has faithfully reproduced the original including the marginal notes of the original compilers. This source provided the types, amounts, and locations of all money going to or from the monastic system. To link these locations to modern places, I often used the Key to English Place Names and the probate records held at British History Online. Finally, I used the Genealogy of the UK and Ireland website and the Gazetteer of British Place Names to assign coordinates to each place name. Combining all of this information yields a dataset containing each yearly movement of money recorded in the *Valor Ecclesiasticus* in the form of a line between the coordinates of the house and its counterparty, with direction, amount, and type of payment.

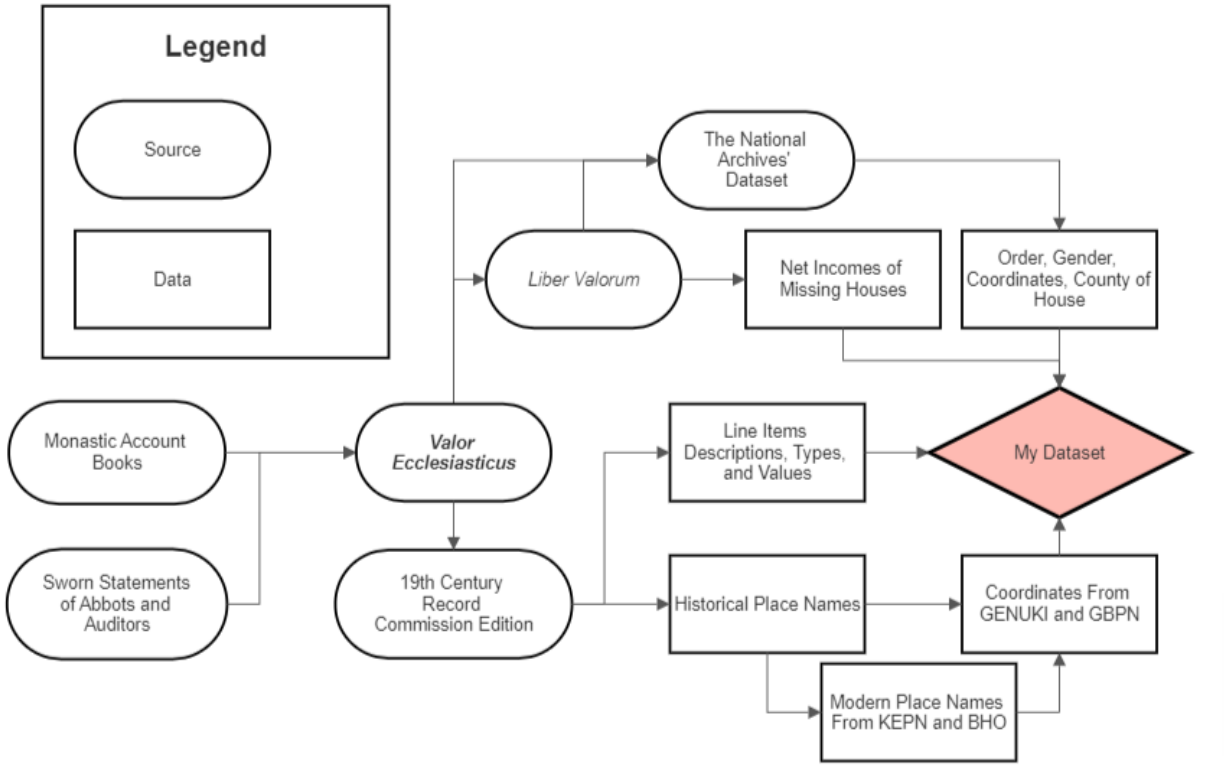


Figure 2.2: Process of Dataset Creation

2.6 Problems With the *Valor Ecclesiasticus*

2.6.1 Lack of Uniformity

Although the King's instructions to his commissioners laid out the order in which monastic property was to be recorded, ordered them to make "a playne boke thereof," and instructed them to record "in what sheres townes hamletts and placis the said manors londs tenants demeanes rentts fermes possessions parsonagis porcions pensions tithes oblations and other profitts lyen and ben," many of them singularly failed to do so.[69] Some entries, particularly for larger monasteries, record only the county and the type of income e.g. "lands in Kent." Others record each village with its temporal and spiritual income, as well as all expenses stemming from that location, rather than laying out temporal income, spiritual income, and

69. *Valor ecclesiasticus temp. Henr. VIII. : Auctoritate regia institutus. Vol. I.*, n.p.

expenses separately, as instructed by the King.

2.6.2 Houses Missing Full Entries

Many of the houses selected based on the National Archives' dataset were incomplete, and it was not possible to know in advance which houses would be incomplete due to either damage to the record or their status as dependent cells.

Where the record has been damaged, the line items recorded for each house have been permanently lost. The Record Commission edition of the *Valor* supplements the damaged sections with the *Liber Valorum*, a condensed version of the *Valor* which recorded only the net annual income figures of each house for tax purposes.[70] The map below shows the geographical extent of the damage to the record and highlights each house with incomplete data. For each region analyzed below, the impact of record damage on the distribution is given some attention.

Some houses also lack a line-item breakdown of their income and expenditure because they were dependent cells of larger monasteries. The properties of these houses *are* sometimes recorded, but they are not tied to the dependent cell in the dataset as they were listed under the mother house. As such, the analysis below will distinguish between the full dataset and that which uses only houses with complete entries.

Table 2.1: Complete and Incomplete Houses by Region

	Complete	Incomplete	Total
East Anglia	26	14	40
Thames Basin	30	10	40
South and Southwest	29	11	40
Midlands	38	2	40
The North	31	9	40
England	154	46	200

All data from the PRO edition of the *Valor Ecclesiasticus*

70. Hunter, *An introduction to the Valor Ecclesiasticus of King Henry VIII : with a map of England and Wales showing the distribution in dioceses*, 35.

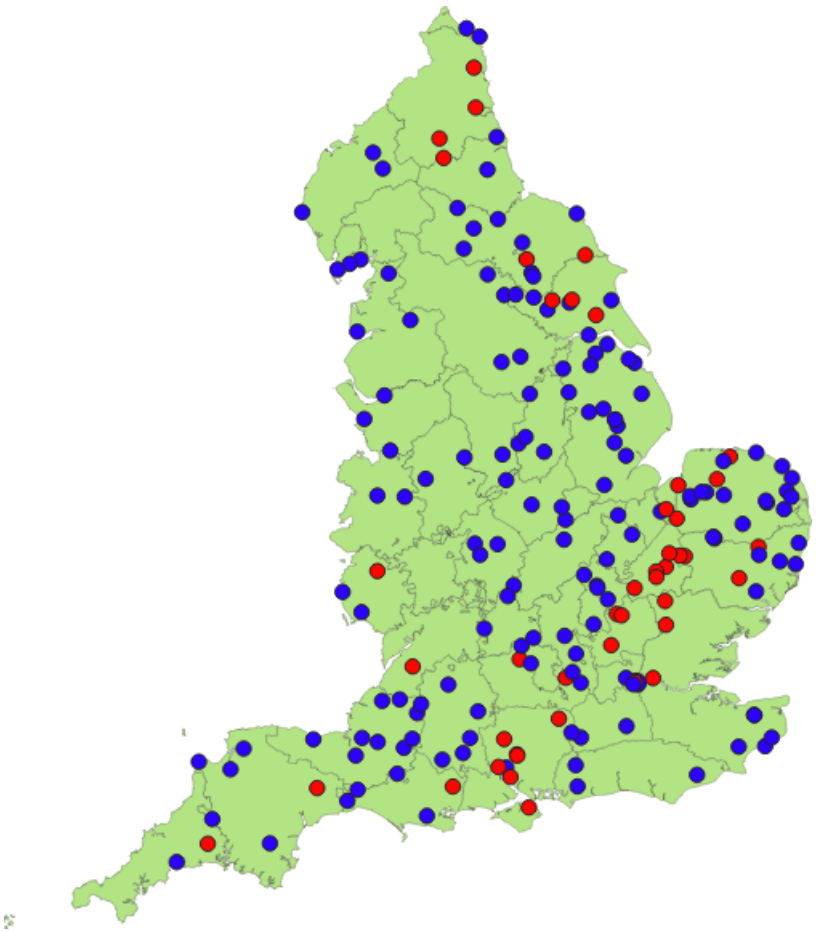


Figure 2.3: Map of Selected Monastic Houses, Missing Data in Red

The effect of the missing houses can clearly be seen in Figure 2.4, a map of the sources of monastic income. The near-total absence of monastic income coming from just north of the Isle of Wight or the entire county of Northumberland is the most obvious artifact, but the omissions have also resulted in substantial thinning in the otherwise-dense area northeast of London. These regions will be dropped in any use of this dataset for further spatial analysis in order to ensure robustness of results.

While the effect of incomplete entries on the composition of the overall sample is negligible, the effects on individual regions are larger. This is largely due to the different sources of incomplete entries. For the Midlands, North, and Thames Basin, entries are incomplete mostly due to damage to the physical *Valor Ecclesiasticus* itself, while in East Anglia and South and Southwest, most incomplete entries are daughter houses whose properties are

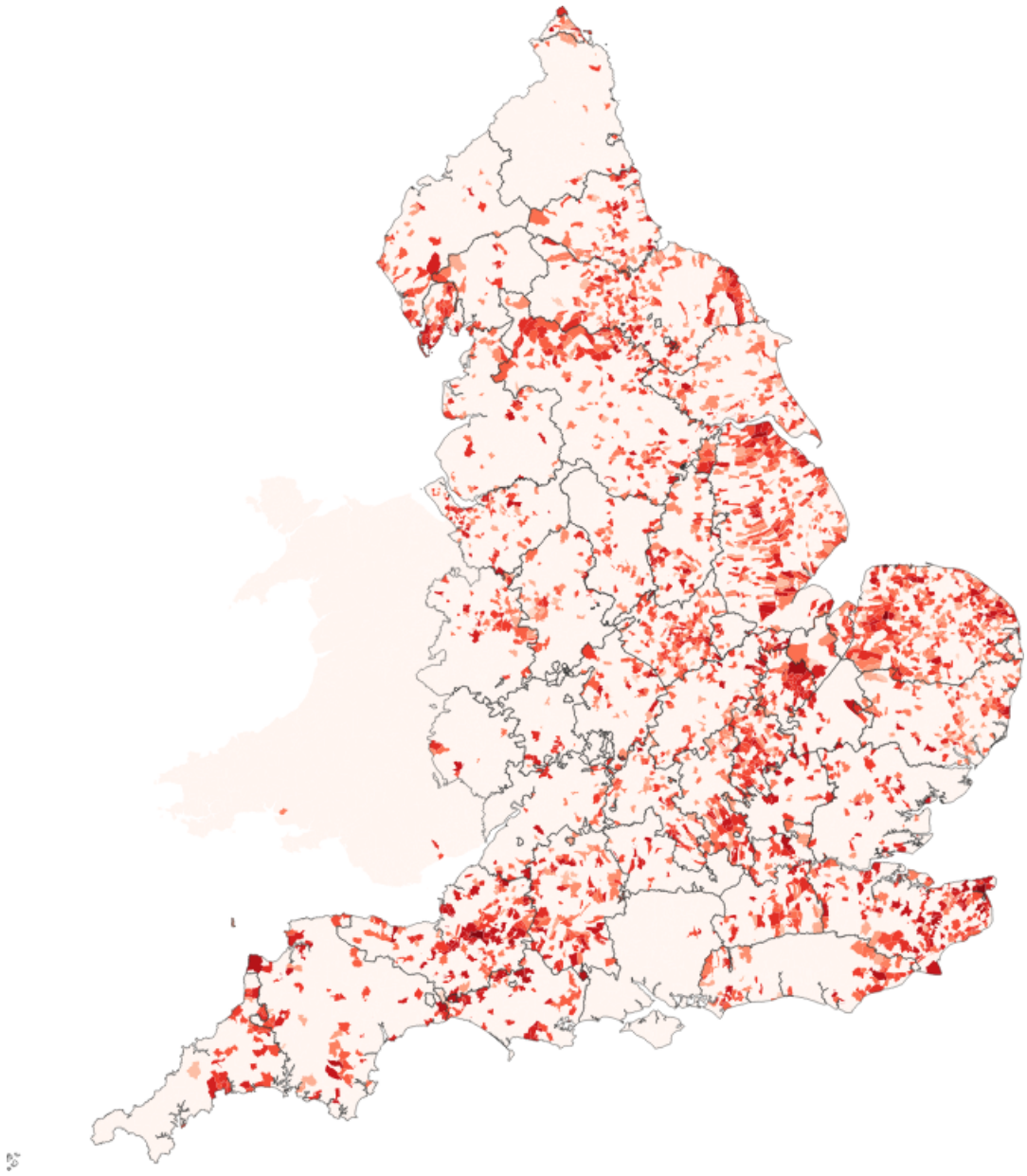


Figure 2.4: English Parish Outflow to Monastic System

listed as possessions of their mother house. The differential effect of the record damage on each region can make it difficult to make firm statements on the monastic houses in each region.

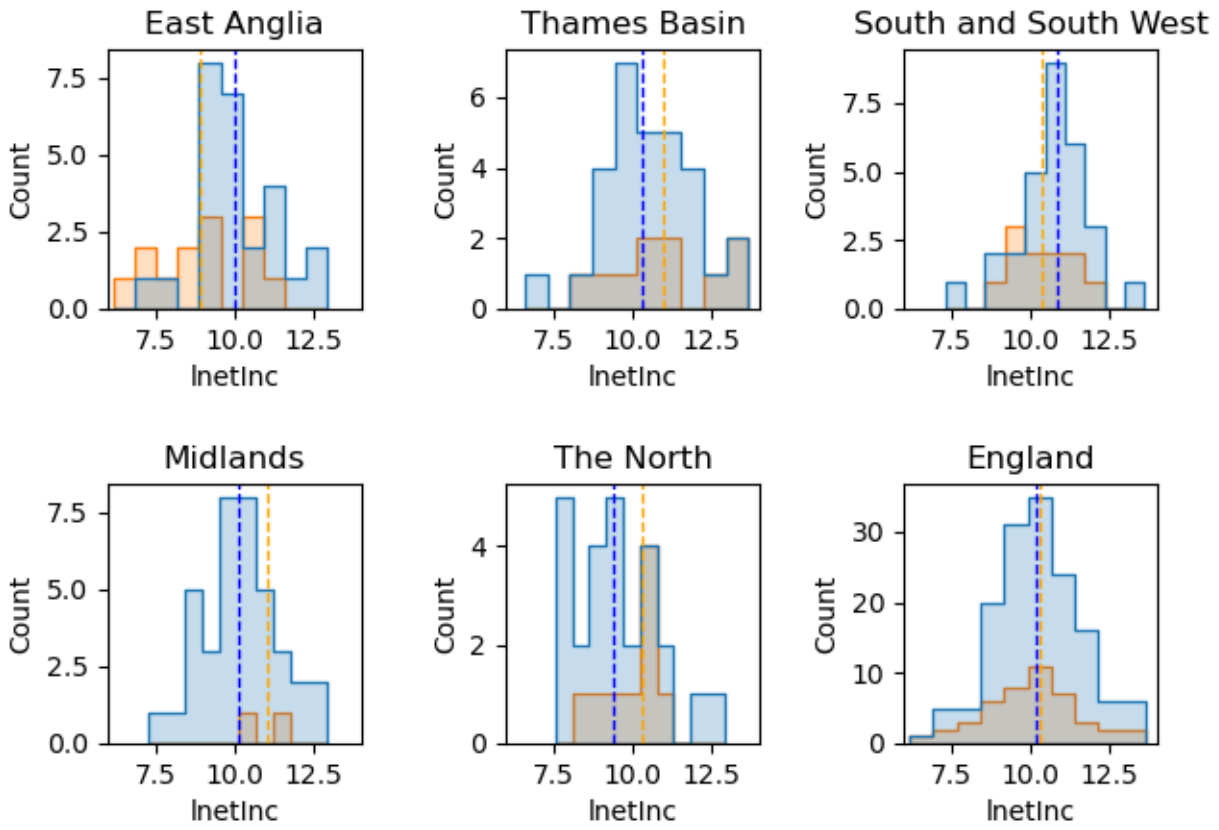


Figure 2.5: Histograms of Complete and Incomplete Entries, Incomplete in Orange, Medians as Dashed Line

2.6.3 Georeferencing Issues

Given the constraints of time and resources, georeferenced coordinates are drawn from gazetteers described above rather than through study of original documents from each house. This has undoubtedly introduced some measure of error into the coordinates of this dataset. However, I have followed a few heuristics in georeferencing which should substantially reduce location errors.

First, in cases in which multiple villages share the same name, I have defaulted to the village closest to the other entries, and when precisely-georeferenced locations near the entry in question have been scattered far apart, to the largest village with that name. In most groups of entries which I have been able to precisely georeference, sequential entries tend to

be close together, with the coordinates of entries often tracing a path through the countryside in a single direction. This, combined with GENUKI's distance-search function, allows me to georeference new entries with a fair degree of confidence.

Some entries combine a number of villages—generally very close to each other—into a single entry. These I have recorded twice, the first time in a combined entry georeferenced to the first village in the group and tagged with a "multi" dummy. I have also georeferenced each village in these multi-entries separately, dividing the value of the yearly transfer evenly between each location and tagging them with a "split" dummy. Both remain in the full dataset, so either "multi" have been dropped before any analysis. The number of entries split this way is less than three percent, and using the multi-entry, the split entries, or dropping such lines entirely will allow future users to ensure that this practice does not bias their results. Entries which record only the county, e.g. the "lands in Kent" entry mentioned above, have thus far not been georeferenced given the inability to tie these sums to specific parishes.

2.6.4 Multi-Category Entries

Some entries contain multiple categories, such as "land and mill" or "demesne and court," making simple categorization impossible. These entries, where either land or tithe income is present, will be treated as such as these income items tend to be far larger than any others. Where both land and tithe are present, or neither is present, the figure will be split evenly between categories. These multi-category entries consist of a very small proportion of the overall dataset, and will have minimal effects on any final results.

2.6.5 Tudor Math

As noted in other studies of the *Valor*, the Commissioners and compilers occasionally made math errors which could compound and result in inaccurate totals. I have double-checked the entries of each religious house by adding all income and expenditure, then comparing

those values to the total income, total expenditure,[71] and net income figures from the *Valor*. Outside of Tables 2.2 and 2.9, which compare net incomes by region and order and include even incomplete entries, I have used my own total and net income figures for all calculations of income and expenditure shares.

2.6.6 Unique or Unidentifiable Entries

Many of the houses in the *Valor* have unusual, idiosyncratic, or region-specific entries which are difficult to categorize, and sometimes, to even clearly understand. For example, a number of entries in the North, particularly in Yorkshire, contain references to "blanch farm," "blanche ferme," "alba firma," etc. This may be a leftover reference to the practice of accepting only "blanched money" or silver of a sufficient fineness as payment,[72] or could refer to rents paid in silver rather than in kind or labor.[73] However, by this period most rents were paid in cash and in any case "blanch farm" entries sit alongside ordinary rent entries.

Other houses contain entries for "scot and lot" (flood prevention dues), "mortuar'" (mortuary dues to the local priest, usually the finest animal but varying depending on local custom), and a host of other idiosyncratic—but mercifully generally small—payments.[74] These small payments, when not possible to assign clearly to another category, have been categorized together under the heading of "Unknown/Other."

There are also a small number of entries which appear to record the performance of labor services by unfree tenants, a practice which was largely extinct by this time but which has been recorded in other studies of monastic records.[75] These entries have been excluded from the current analysis as they are low in value and few in number.

71. Where both of these are given in the text.
72. G. J. Turner, "The Sheriff's Farm," *Transactions of the Royal Historical Society* 12 (1898): 118.
73. "Blanch Farm," *Yorkshire Historical Dictionary*.
74. Paul Cavill, "Mortuary dues in early sixteenth-century England," *Continuity and Change* 36, no. 3 (2021): 288–9.
75. David Cox, *Evesham Abbey and local society in the Late Middle Ages: The abbot's household account 1456-7 and the priors' registers 1520-40* (Printed for the Worcestershire Historical Society by 4word Ltd., 2021), 112.

2.6.7 Double-Counting

Some entries record land rents or cash transfers between two houses in the dataset. Because this analysis focuses on the characteristics of individual houses such as their income and expenditure and the patterns of their holdings, I have not deleted double-counted entries. The same transaction will appear in the entries for both houses so that when houses of a specific region, order, size, etc. are selected for analysis the transaction will remain attached to both houses. For analyses that describe the flow of money through the monastic system as a whole rather than the characteristics of individual monasteries, I have canceled one of the duplicated transfer entries assigned to the two houses. Doing this will allow both a complete view of individual houses' incomes and expenditures and the overall flow of money and resources through the monastic system.

2.7 The Monastic Landscape in 1536

2.7.1 Regions

Given the large economic and social differences between the regions of England during this period, the similarities in the sources of monastic income are striking. As seen in Table 2.2, the median house of the Thames Basin or the South is somewhat richer than its Midlands counterpart and substantially richer than the median house in the North or East Anglia. These differences are further increased by the presence of the enormous houses of Westminster Abbey and Glastonbury Abbey, with an annual net income of £3,470 and £3,309 respectively.

The largest houses in East Anglia, the Midlands, and the North are Ramsey Abbey (£1,716), Tewkesbury Abbey (£1,680), and St Mary's Abbey in York (£1,650) respectively. These houses do not dominate their regions as fully as Westminster and Glastonbury Abbeys, with multiple houses in each region being nearly as large. Due to the sampling process described above, we can be sure that the dominance of large houses in the South and the

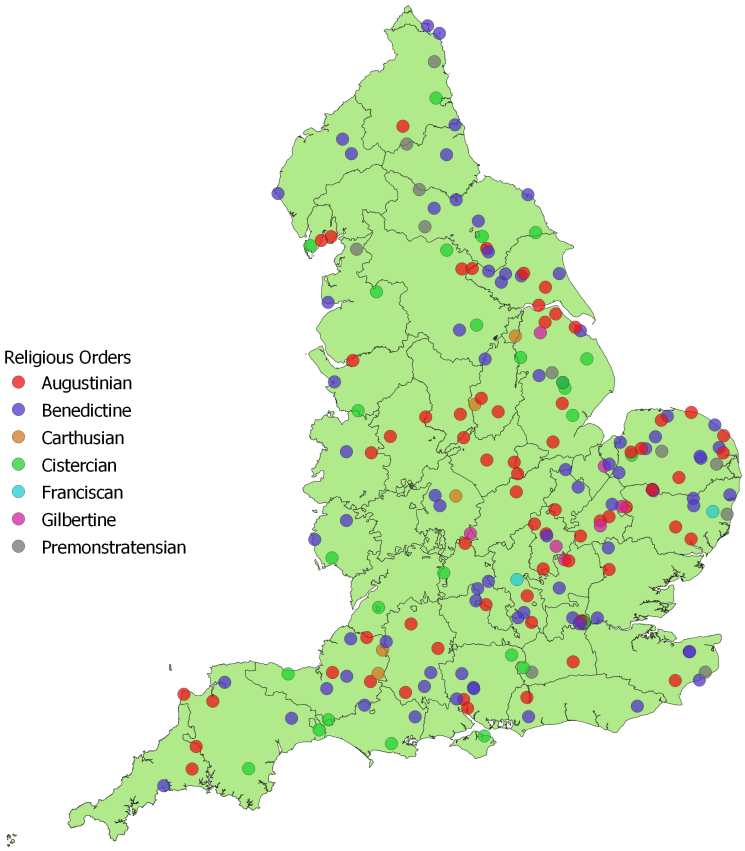


Figure 2.6: Map of English Religious Houses by Order

Thames Basin is not a mere artifact of a random sample.

As seen in Table 2.4, houses in the rich agricultural land of the South and Southwest draw a somewhat greater share of their income from land than do houses farther north, by roughly four percentage points. They also have substantially more court income than other regions, but this could be a result of other commissioners folding court income into land totals as income from manors. The Thames Basin and the North sit right around the median value for the whole of England, while East Anglia is less than two percentage points lower. The only real outlier is the Midlands, with the median house drawing only 59.5% of its income from land. Tithes, the other major income source for monasteries, mechanically form a rough inverse to the share of land income as together the two categories comprise approximately 90% of the median house's income. The median house of the South and Southwest relied on

Table 2.2: Net Income by Region, (£)

	Mean	Std. Dev.	Min	Median	Max	Number
East Anglia	168.03	304.23	2.00	60.47	1,715.61	40
Thames Basin	459.65	751.24	3.12	148.57	3,470.01	40
South and Southwest	317.56	531.59	6.26	167.42	3,309.37	40
Midlands	229.27	329.84	5.99	107.76	1,679.58	40
The North	205.94	359.05	8.00	71.30	1,650.35	40

Note: All data from the PRO edition of the *Valor Ecclesiasticus*

tithes for only 11.4% of its income, that of the Midlands 28.4%, and other regions clustered tightly around 20%.

What is most conspicuous about the regional income breakdowns is how *similar* the figures are across regions. With huge variability in the mean and median size of houses in each region—from East Anglia's median of £60.47 to the South's £167.42—the share of land income varies by a maximum of fourteen percentage points between regions. Tithes are more variable, particularly compared to their base value, but again only vary by seventeen percentage points.

Table 2.3: Mean Income by Category and Region, (£)

	Land	Tithe	Transfer	Unknown/Other	Total
East Anglia	192.27	49.59	6.33	20.44	276.22
	(359.14)	(71.67)	(14.03)	(75.34)	(416.56)
Thames Basin	358.28	71.94	9.70	40.41	488.77
	(689.68)	(118.93)	(23.53)	(115.60)	(883.03)
South and Southwest	296.71	55.10	4.92	23.28	395.48
	(516.60)	(62.29)	(6.36)	(57.95)	(633.72)
Midlands	172.86	63.82	2.72	17.36	259.89
	(294.62)	(75.98)	(5.36)	(32.44)	(369.02)
The North	159.40	70.37	6.05	12.05	251.67
	(269.55)	(109.00)	(19.77)	(47.78)	(399.66)

Note: All data from the PRO edition of the *Valor Ecclesiasticus*

Note that as these figures are medians, they will not add up to 100%. There are also two small houses, Ansty Preceptory and Baddesley Preceptory, which have income and expenditure breakdowns which are not tied to any locatable points, resulting in two fewer

Table 2.4: Median Income Shares By Region

	Land	Tithe	Transfer	Court	Unknown/Other	Number
East Anglia	0.692	0.214	0.000	0.005	0.000	26
Thames Basin	0.709	0.196	0.000	0.002	0.012	30
South and Southwest	0.744	0.115	0.006	0.012	0.015	29
Midlands	0.595	0.287	0.000	0.000	0.001	38
The North	0.701	0.192	0.000	0.000	0.000	31
England	0.703	0.206	0.000	0.000	0.001	154

Note: All data from the PRO edition of the *Valor Ecclesiasticus*

houses being included in the calculations of distance. These figures are also calculated based on the median *possession*, not the median *house*.

The distance figures paint a different picture than those covering income shares. While in East Anglia, the South, and the Midlands, land tended to come from 10-13 km away from the religious house, that in the North and, interestingly, the rich Thames Basin, tended to come from farther away. This result makes sense in the sparsely-populated North, but in the Thames Basin is likely explained by the concentration of large houses in London which held property in outlying areas. The tithe figures are equally striking, with houses in the North collecting tithes from parishes an average of 28 kilometers away. This figure is likely driven by the northeastern counties with relatively poor agricultural land, where monasteries were reliant on tithes from more widely-scattered parishes than were other Northern houses. Other regions relied on more local tithes, with medians ranging from 10 to 14 kilometers. Finally, transfer income was the most distant source, from a low of 15 kilometers in the South to a high of 44 kilometers in the North. Sources of transfer income were often major religious institutions, and they were simply thicker on the ground the farther south in England one went.

These distance figures are remarkably low and paint the picture of a face-to-face economy. With the median parcel of land held by the monastery between 10 and 18 km away, most monastic tenants were within a day's walk of the monastery which owned their land. Tithes were slightly more distant, but even in the sparsely-populated North the median parish

appropriated to a monastery was less than a day's ride on horseback. Like the rest of the medieval countryside, the monastic economy was profoundly local and personal. These short-distance connections likely substantially increased the trauma of the Dissolution, severing dense local connections rather than links with a distant landlord.

Table 2.5: Median Distance of Income Source From House by Region (km)

	Land	Tithe	Transfer	Number
East Anglia	10.6	10.0	32.7	26
Thames Basin	16.2	14.8	22.9	30
South and Southwest	11.9	9.8	15.8	27
Midlands	12.8	13.1	25.8	38
The North	18.0	28.0	44.0	31

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

Note that these distance figures are only medians of georeferenced entries, with those unable to be confidently georeferenced left out. This may create a slight downward bias as nearby places are easier to find and tag, but given the high percentage of land, tithe, and transfer entries georeferenced, this effect is likely very small.

Moving on to the expenditure figures in Table 2.6, we see more regional variation. The median share of deductible expenditure paid in land rents ranges from 24% for houses in East Anglia to 2.5% for houses in the North. These figures are somewhat difficult to interpret, as the sparsely-populated North and the rich South are together at the bottom of the distribution, with 2.5% and 6.4% of expenditure going to land respectively. Transfer expenditures were less variable, ranging from 40% of the expenditure of the median Midlands house to 19.9% of the expenditure of the median East Anglian house. Again, there seems to be little or no North-South trend, but the extreme value for the Midlands may have to do with the large number of pensions which various monasteries sent to the Bishop of Lincoln. Fees are less variable, from 26.2% of expenditure in East Anglia to 37.4% in the South. As fees to secular officials scaled with the quantity of property managed and therefore roughly with

expenditure, this lack of variability is not surprising. Alms expenditure varied substantially, with the median house in East Anglia and the South giving out no alms (from named benefactors) at all, while the median Northern house gave out over six percent of its deductible expenditure as alms. As stated above though, only specific types of alms were eligible to be counted in the *Valor*, so these figures are necessarily imprecise. Finally, synodals and procurations, religious fees paid to the bishop for parish churches appropriated to the monastery, were roughly 2-3% of expenditure across the entire country aside from the North, where the median house records zero spending of this kind. This is unlikely, and probably stems from the idiosyncrasies of individual Commissioners in creating the *Valor*.

Table 2.6: Mean Expenditure by Category and Region, (£)

	Land	Transfer	Alms	Fee	Total
East Anglia	12.96	9.20	7.09	13.66	45.42
	(17.23)	(10.33)	(19.10)	(28.06)	(61.45)
Thames Basin	9.80	22.22	8.30	21.10	81.28
	(14.39)	(38.76)	(26.10)	(43.82)	(173.42)
South and Southwest	5.49	11.93	10.14	17.18	50.31
	(9.78)	(12.01)	(27.43)	(23.64)	(64.21)
Midlands	4.84	16.60	5.83	12.41	43.28
	(8.19)	(19.34)	(13.05)	(23.54)	(55.27)
The North	4.74	16.02	13.47	17.68	53.51
	(10.98)	(23.20)	(43.04)	(34.60)	(96.46)

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

Table 2.7: Median Expenditure Shares By Region

	Land	Transfer	Fee	Alms	Synodals	Number
East Anglia	0.243	0.199	0.262	0.000	0.026	26
Thames Basin	0.124	0.295	0.279	0.022	0.021	30
South and Southwest	0.064	0.290	0.374	0.000	0.018	29
Midlands	0.086	0.409	0.267	0.031	0.029	38
The North	0.025	0.229	0.368	0.066	0.000	31
England	0.095	0.283	0.302	0.022	0.016	154

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

Expenditure destinations tended to be somewhat farther from the religious houses than

income sources. In the South and the Thames Basin—closer to more major religious institutions—the median outgoing transfer traveled only 20km. However, farther from the seats of religious power, this figure is closer to 30km. Land expenditures traveled extremely variable distances, from a median 3.9km in the Thames Basin to 31.3km in the Midlands. These land expenditure distances do not seem to track land income distances and do not appear to be related to the share of income coming from land. I have not calculated distances for fee expenditures, as this is the type of expenditure which accounts for the vast bulk of missing entries. Fees are generally listed in the *Valor* under the names of their recipients, so are very difficult to locate with any degree of confidence. I have also left out alms, as the vast majority of alms are listed as given at the moansteries themselves, leading to a median distance of zero for every region. Finally, synod and proxy expenditures travel a median distance of between 38.6km in East Anglia and 51.1km in the North. This likely simply reflects the distance to the local bishop or archdeacon from the houses in each region.

Table 2.8: Median Distance of Expenditure Destination From House by Region (km)

	Transfer	Land	Synodals	Number
East Anglia	26.8	14.2	38.6	26
Thames Basin	19.9	3.9	50.4	30
South and Southwest	19.0	26.4	48.8	27
Midlands	30.5	31.3	40.4	38
The North	29.8	17.9	51.1	31

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

Breaking down the data by region provides some interesting insights into the monastic landscape across England. There are broad differences in the sizes of monastic houses and the distances covered by their economic networks, generally roughly correlated with each region's wealth and population density. These differences throw the overwhelming similarity of the income breakdown in each region into even sharper relief, with shares from each or the two major income sources varying by only about ten percent between the highest and lowest

regions. Once we move on to a breakdown by order, however, we start to see somewhat more variation.

2.7.2 Orders

The monastic landscape of England was overwhelmingly dominated, in both my sample and in reality, by the large monastic orders. The Benedictines had both the most numerous and by far the richest monastic houses, with eighteen of the twenty richest religious houses in England belonging to their order.

In numbers, they were followed by the Augustinians, who tended to have rather poorer but nearly as numerous houses. Together, these two giant orders made up nearly three-quarters of all monasteries in both my sample and in England as a whole.

The next-largest order, the Cistercians, have been singled out by economic and social historians for a number of reasons, particularly their emphasis on hard work, focus on settling in the "wilderness," and practice of taking on *conversi*, or lay brothers who worked and learned with the monks without joining the order themselves. These practices appear to have paid off, with Cistercian monasteries' median income being the second highest in the sample behind only the Carthusian order.

Rounding out the list are the smaller orders. The Premonstratensians, an austere sect with disproportionately many monasteries in the North, had middling incomes. The Carthusians, founded on ideas of seclusion and contemplation, had the richest houses in the country on average, with those in my sample having a median annual income over 40% higher than that of the next-richest order. The Gilbertine Order was the only religious order found only in England, and were therefore the only religious order permanently and completely destroyed by the Dissolution. Their houses drew a meager income only superior to the final order in the sample, the Franciscans. A group of interrelated orders, in England the Franciscans comprised the Friars Minor, the Observant Franciscans, both mendicant orders of men, and the Poor Clares, an order of nuns. Most friaries were so poor that they were left out

Table 2.9: Net Income by Order, (£)

	Mean	Std. Dev.	Min	Median	Max	Number
Augustinian	159.32	167.55	5.99	100.97	951.72	68
Benedictine	435.96	719.38	2.00	119.76	3,470.01	80
Carthusian	278.68	182.78	131.32	226.76	642.02	6
Cistercian	238.54	226.14	25.88	161.62	894.97	26
Franciscan	29.61	37.46	3.12	29.61	56.10	2
Gilbertine	52.23	71.67	10.38	35.00	212.17	7
Premonstratensian	109.88	73.56	26.41	98.46	242.29	11

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

of the *Valor* and therefore this sample, but Aylesbury Friary (with a net income of £3) and Bruisyard Abbey (a rather grand name for a house with an income of £56) were selected.

Small orders with no representation in the sample are the Carmelites, none of whose houses are recorded as owning any property, the Dominicans who possessed only one house with property, the Grandmontines with only tiny Grosmont Priory, and the Bridgettines with Syon Abbey, a very unique mixed-gender house not selected for this sample.

There are also some broad differences between religious orders with respect to income sources. The Augustinians, Benedictines, and Carthusians derived relatively less of their income from land than other orders—60%, 69%, and 64% respectively—leaning more heavily on income from tithes and, in the case of the Benedictines and Carthusians, transfers from other religious institutions. The Cistercians, along with the smaller orders of the Franciscans, Gilbertines, and Premonstratensians, all had land income shares in excess of 70%. While it is possible that the smaller orders are simply outliers, the greater share of land does corroborate other scholars' emphasis on the Cistercian focus on hard work and agricultural productivity.[76] Finally, the high proportion of "Unknown" income for Carthusian houses stems from one massive combined entry for Axholme Priory and a large annual grant from the King to the Charterhouse in London.

There are also large differences between orders in the distance to their possessions, re-

76. Thomas Barnebeck Andersen et al., "Pre-Reformation Roots of the Protestant Ethic," *The Economic Journal* 127 (604 2017): 1760.

Table 2.10: Mean Income by Category and Order, (£)

	Land	Tithe	Transfer	Unknown	Total
Augustinian	122.60	55.62	1.68	19.99	202.86
	(140.63)	(62.30)	(4.52)	(58.30)	(210.68)
Benedictine	367.80	79.91	12.63	33.73	507.07
	(671.42)	(119.64)	(22.69)	(96.25)	(846.69)
Carthusian	199.30	97.80	4.62	32.22	335.64
	(171.41)	(95.74)	(5.14)	(34.95)	(188.90)
Cistercian	257.02	49.37	1.24	5.50	322.44
	(262.30)	(66.60)	(2.03)	(9.14)	(298.01)
Franciscan	31.09	8.26	N/A	N/A	39.37
	(37.77)	(11.68)	N/A	N/A	(49.48)
Gilbertine	62.04	18.21	N/A	2.00	82.67
	(76.79)	(20.08)	N/A	(2.61)	(99.61)
Premonstratensian	99.45	30.07	0.08	7.88	138.65
	(73.85)	(27.31)	(0.24)	(11.80)	(88.14)

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

Table 2.11: Median Income Shares By Order

	Land	Tithe	Transfer	Unknown	Number
All Orders	0.703	0.206	0.000	0.001	154
Augustinian	0.601	0.270	0.000	0.000	54
Benedictine	0.695	0.155	0.012	0.001	59
Carthusian	0.641	0.270	0.014	0.092	6
Cistercian	0.772	0.130	0.000	0.002	20
Franciscan	0.889	0.111	0.000	0.000	2
Gilbertine	0.788	0.197	0.000	0.012	4
Premonstratensian	0.730	0.205	0.000	0.000	9

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

flecting the different role of each order in the economy. The rich and established Benedictines held both their land and tithes at a median distance of about 15 kilometers from their religious houses, easy to reach and return on foot within a day. Most other orders held their median land even closer, down to the Carthusians' 5.4 kilometers. The Cistercians buck the trend here, with the median possession 18.6 kilometers from its religious house, likely reflecting the Cistercian practice of setting up distant and isolated monastic farms known as

"granges."[77] Tithes also came from varying distances, from the tiny Franciscans' median of 0.6 kilometers to the Carthusians' incredible median of 88.8 kilometers. The larger orders of the Augustinians, Benedictines, and Cistercians drew tithes from a median of 10.9, 15.1, and 9.0 kilometers away respectively, less than the distance to their possessions in land in each case. Transfers, as we saw in the regional breakdown, tend to come from farther than either land or tithe income for most orders, with the Augustinians and Benedictines receiving their transfers from roughly twice the distance of their tithes. Once again, the Carthusians and Cistercians stand out, with Carthusian transfers crossing a median 79.6 kilometers and Cistercian transfers traveling only 8.6 kilometers. This reflects both the Cistercians' relative self-sufficiency and the Carthusians' close economic connections with other houses of their order, united by the observance of their unusually austere way of life.[78] The Franciscan and Gilbertine houses in the sample received no transfers, so they have no average distance value.

Differences between monastic orders may point toward different types of engagement with the local economy. The established and numerous, but generally relatively small Augustinian houses held their possessions very nearby, with land and tithe income generally no more than a few hours' walk from their houses. The larger and more prosperous Benedictines were similar but held possessions in all three categories about fifty percent farther away, likely due to their sheer size. Cistercian houses pulled land income from farther away than any other order, but received tithe and transfer income from very nearby, having a deep engagement with local religious institutions but more scattered temporal possessions. The Carthusian order is the largest outlier, with lands clustered very close to the religious house but tithes and transfers coming from extremely far away. The reasons for this are unclear, the tithes are very large but very few and very distant; almost all the transfers are pensions from faraway churches. The other small orders tend to be relatively localized, reflecting their small size.

77. R.A Donkin, "Cistercian Order and the settlement of northern England," *Geographical review* (New York) 59, no. 3 (1969): 408.
78. Knowles, *The tudor age*, 222.

Table 2.12: Median Distance of Income Source From House by Order (km)

	Land	Tithe	Transfer	Number
Augustinian	11.4	10.9	20.4	52
Benedictine	15.5	15.1	31.2	59
Carthusian	5.4	88.8	79.6	6
Cistercian	18.6	9.0	8.6	20
Franciscan	11.3	0.6	N/A	2
Gilbertine	8.7	9.4	N/A	4
Premonstratensian	10.8	5.4	10.8	9

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

Moving on to the expenditure breakdowns, there is a broad negative correlation between the size of a monastic order and its expenditure on land rents. The Augustinians and Benedictines paid out only 9.4% and 6.3% of their deductible expenditure in land rents, the mendicant Franciscans a whopping 67%, and all other orders between 12.7% and 18.4%. This may be an artifact of the process by which monastic houses acquired land, with the older and larger Augustinian and Benedictine monasteries receiving large and contiguous grants of land while other orders received their properties in smaller and more scattered chunks. As most land expenditure went to locations in which the religious house already owned land, it seems likely that this money was often spent to connect disconnected parcels and create larger contiguous properties.

Transfer expenditure was relatively similar in the three largest orders, with the Augustinians, Benedictines, and Cistercians spending 29.2%, 20.8%, and 28.1% of their deductible income on transfers to other religious institutions. The smaller orders were more variable, with the Franciscans spending only 8.4% on transfers (likely due to their mendicancy) while the Carthusians, Gilbertines, and Premonstratensians spent 45%, 45.8%, and 39.2% respectively. There seems to be a rough negative correlation between median house size and the percentage of deductible income spent on transfers, but this could also be influenced by the tighter interrelationship between institutions of smaller orders. Fees vary less than

other types of expenditure, ranging from 22.5% for Premonstratensians to 35.4% for the Benedictines. These figures are probably influenced by the share of income derived from landholdings, but there may be countervailing economies of scale in which an officer receiving the same fee is capable of managing a larger property. The almsgiving numbers paint a stark picture of most orders giving very few alms or none at all, with the most generous orders, the Benedictines and Premonstratensians, giving 4.6% and 4.9% of deductible income respectievly. Other orders gave 1.1% or less, but again these are only figures for alms given out of the foundation of a named benefactor. Finally, synods and proxies vary substantially, but are directly related to the share of income derived from tithes as they are dues to the local bishop and archdeacon for churches appropriated to the monastery.

Table 2.13: Mean Expenditure by Category and Order, (£)

	Land	Transfer	Alms	Fee	Total
Augustinian	4.87	13.59	2.85	8.55	32.44
	(7.70)	(16.87)	(5.62)	(8.35)	(29.83)
Benedictine	8.85	18.41	15.58	26.73	82.49
	(15.66)	(31.76)	(39.52)	(46.79)	(148.79)
Carthusian	11.84	23.56	8.93	7.05	52.52
	(18.96)	(12.73)	(18.92)	(4.41)	(32.42)
Cistercian	10.18	15.74	9.85	17.13	56.93
	(13.28)	(17.23)	(26.30)	(17.73)	(61.70)
Franciscan	4.38	1.84	0.05	5.17	11.63
	(4.41)	(2.60)	(0.07)	(7.31)	(14.66)
Gilbertine	0.89	3.15	0.56	3.03	7.72
	(0.68)	(3.01)	(1.12)	(3.80)	(7.10)
Premonstratensian	5.46	9.62	4.47	6.71	28.37
	(5.62)	(8.73)	(8.30)	(4.56)	(18.50)

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

2.7.3 Urban-Rural Differences

One of the main advantages of a georeferenced dataset is the ability to show the movement of money between different parts of the country and between urban and rural areas. While this picture is not as complete as it would be with the full dataset, we can still get some idea

Table 2.14: Median Expenditure Shares By Order

	Land	Transfer	Fee	Alms	Synodals	Unknown	Number
All Orders	0.095	0.283	0.302	0.022	0.016	-0.000	154
Augustinian	0.094	0.292	0.252	-0.000	0.043	-0.000	54
Benedictine	0.063	0.208	0.354	0.046	0.009	-0.000	59
Carthusian	0.184	0.450	0.225	0.011	0.003	0.012	6
Cistercian	0.144	0.281	0.328	0.005	-0.000	-0.000	20
Franciscan	0.670	0.084	0.235	0.002	0.009	-0.000	2
Gilbertine	0.127	0.458	0.361	-0.000	-0.000	-0.000	4
Premonstratensian	0.170	0.392	0.225	0.049	0.042	-0.000	9

Note: All data from the PRO edition of the *Valor Ecclesiasticus*.

Table 2.15: Median Distance of Expenditure Destination From House by Order (km)

	Transfer	Land	Synodals	Number
Augustinian	25.4	25.1	46.2	52
Benedictine	21.2	13.1	44.9	59
Carthusian	39.0	1.8	34.6	6
Cistercian	30.9	24.9	23.7	20
Franciscan	43.9	8.5	N/A	2
Gilbertine	57.2	23.7	74.5	4
Premonstratensian	17.9	16.0	29.8	9

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

of the net rural-urban transfer created by the monastic system in each region.

Using an updated version of the Bairoch city dataset developed by Eltjo Buringh, I created buffers of 1km and 5km surrounding the medieval center of each city in England with a population of at least 1,000 in the year 1550.[79] This allows the categorization of the source and destination of each line in the dataset into "urban" (<1km), "suburban" (1-5km), and "rural" (>5km) and the whole line into one of nine categories (urban-urban, urban-rural, suburban-urban, etc.) These lines can be aggregated, subtracting each category from its opposite, to get an idea of the role of religious houses in moving money between rural and urban areas. In addition, I calculated the percentage of the total georeferenced

79. Eltjo Buringh, "The Population of European Cities from 700 to 2000: Social and Economic History," *Research Data Journal for the Humanities and Social Sciences* 1, no. aop (2021): 1–18.

transfers comprised by each category. Keep in mind while reading this section that the net rural-urban transfers mentioned are drawn from a subset (georeferenced entries) of a subset (complete houses) of a subset (randomly selected houses). However, with only around sixteen percent of the annual value in sample unable to be georeferenced, these figures are likely to be relatively representative.

There are substantial regional differences in rural-urban net transfers, with large movements up the urbanization scale happening in the North and the Thames Basin, smaller movements in the same direction in the Midlands and East Anglia, and a tiny movement in the reverse direction in the South and Southwest.[80] In the North, a net total of £2,650 flowed through monasteries to more urban areas, with the vast majority flowing from rural to urban areas directly. This is likely driven by large urban houses like Durham Cathedral Priory and St Mary's Abbey in York which drew huge incomes from their rural land and tithe possessions. In the Thames Basin the figure was more than double that, with £6,295 headed up the urbanization scale. This figure is equally split between rural-urban and rural-suburban transfers, likely due to the giant Westminster Abbey and the relatively large Charterhouse, Bermondsey Abbey, and St Mary Graces, all in the suburbs of London.

Table 2.16: Net Rural-Urban-Suburban Transfers by Region (£)

	Rural-Urban	Rural-Suburban	Suburban-Urban
The North	2,031.86	73.67	544.88
Midlands	935.25	826.77	251.36
Thames Basin	3,166.83	3,080.16	48.26
East Anglia	730.95	28.09	144.02
South and Southwest	-23.79	-92.64	0.00

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN, city locations from Buringh.

When we look at rural-urban transfers broken down by religious order, we can see what is driving the flow of money toward the cities. Overwhelmingly, it is the large and established Benedictine order, pushing a net total of £11,167 from less to more urban areas. The huge

80. Note: regional designations are based on the location of the house, not each income/expenditure source.

Table 2.17: Net Rural-Urban-Suburban Transfer Share by Region

	Rural-Urban Share	Rural-Suburban Share	Suburban-Urban Share
The North	0.261	0.009	0.070
Midlands	0.092	0.082	0.025
Thames Basin	0.227	0.220	0.003
East Anglia	0.106	0.004	0.021
South and Southwest	-0.002	-0.008	0.000

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN, city locations from Buringh.

net transfers are not merely an artifact of the Benedictine order's size, however. Transfers to more urban areas make up 60.6% of the order's total income and expenditure, far more than any other order. The Augustinian order comes a distant second, moving £1,372 up the urbanization ladder, comprising about 12.6% of located transfers and mostly concentrated in rural-suburban movement. The Cistercian order created a small net outflow from urban to suburban and from suburban to rural areas. Again, this is likely due to the Cistercians' habit of settling in relatively sparsely populated areas, creating a lot of rural-rural transfers.

Table 2.18: Net Rural-Urban-Suburban Transfers by Order (£)

	Rural-Urban	Rural-Suburban	Suburban-Urban
Benedictine	6,548.44	2,948.64	1,669.72
Cistercian	9.01	-11.73	-303.50
Augustinian	292.55	756.67	30.38
Carthusian	-10.71	150.12	-413.25
Premonstratensian	18.57	72.34	5.18
Gilbertine	-19.88	0.00	0.00
Franciscan	3.12	0.00	0.00

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN, city locations from Buringh.

Again, it is worth remembering that this is a subset of a sample, and only includes entries for which georeferencing is possible. In addition, a portion of the money entering urban and suburban monasteries likely returned to rural areas each year in payment for food and other goods.

Table 2.19: Net Rural-Urban-Suburban Transfer Share by Order

	Rural-Urban Share	Rural-Suburban Share	Suburban-Urban Share
Benedictine	0.224	0.101	0.057
Cistercian	0.001	-0.002	-0.048
Augustinian	0.027	0.069	0.003
Carthusian	-0.006	0.078	-0.215
Premonstratensian	0.016	0.060	0.004
Gilbertine	-0.061	0.000	0.000
Franciscan	0.052	0.000	0.000

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN, city locations from Buringh.

2.7.4 Clustering of Possessions

The distances traveled by money entering or leaving each religious house can also provide important information on the integration of the monasteries into either local or regional economies. For each house, I have calculated the size of a circle containing a given fraction of the house's locatable income. These circles give an impression of the level of spatial clustering of the possessions of each house. I have not calculated the same figure for expenditure because, given the proportion of expenditure only labeled as going to individuals and therefore very difficult to locate, the figures will be much less representative.

The results (unsurprisingly) parallel those for median possession distance, but the 50% radii are substantially smaller, generally about one-half of the median possession distance. This indicates that the most valuable land and tithes tend to be closer to the monasteries, while smaller possessions and income sources lie farther away. The most localized region—likely because of its smaller houses—was East Anglia, in which the median house drew over half of its income from sources under 5 kilometers away. Even the regions with the most spread-out possessions, the Thames Basin and the North, the median pound came from a source only 7.92 kilometers away, less than two hours' walk in decent country.

The view from the 80th percentile is similar, with East Anglian houses holding possessions substantially closer than those in other regions. However, the Northern houses are now the

second most concentrated while those of the Midlands are the least. In the 90th and 100th percentiles, the houses of the Thames Basin are clearly distinguished from the others in the distance of their possessions, likely due to their proximity to political power and their size. The 100th percentile represents the median distance of the furthest possession of the houses in each region, and is correlated above all with the median income of houses in each region.

Table 2.20: Median Radius Containing X% of Income by Region

	50%	80%	90%	100%
East Anglia	3.51	15.02	28.02	51.82
Thames Basin	7.92	25.00	46.25	91.11
South and Southwest	6.54	21.39	30.92	77.72
Midlands	7.51	26.02	33.72	59.64
The North	7.92	21.11	40.02	60.48

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

Table 2.21: Median Radius Containing X% of Income by Order

	50%	80%	90%	100%
Augustinian	4.83	14.48	30.93	54.48
Benedictine	11.04	25.93	36.03	69.05
Carthusian	14.61	35.18	117.94	128.51
Cistercian	6.97	38.49	44.62	76.61
Franciscan	8.28	20.27	35.25	35.25
Gilbertine	6.16	12.75	12.75	27.37
Premonstratensian	7.62	19.71	38.10	60.94

Note: All data from the PRO edition of the *Valor Ecclesiasticus*, georeferences from GENUKI and GBPN.

When we look at the clustering of monastic possessions by order, we see many of the trends identified in the Orders section. The possessions of the Gilbertines are the most localized overall, but among the major orders the Augustinians clearly held their sources of income most closely. The Cistercian monasteries' most distant possessions were more spread out than those of the Benedictines and Augustinians, but the median pound came from a

lesser distance than that of the Benedictines, likely due to the greater size of Benedictine monasteries. The Carthusians, once again, have far more distant possessions than any other order.

2.7.5 Regressions

Having discussed broad regional, order, and urban-rural differences in the characteristics of individual houses, we can now move on to considering all variables together in the form of some basic OLS regressions. These regressions indicate correlation only and do not underlie any causal claims, but can give us crucial information on the monastic landscape. The four smaller orders (Carthusian, Franciscan, Gilbertine, and Premonstratensian) have been collapsed into one category as each has very few houses.

We will turn first to income shares, with the outcome variable being the share of monastic income comprised by a given category of income, shown in Table 2.22. We see no statistically significant variables aside from a six percentage-point-higher Benedictine income from transfers and a much higher (14.5 percentage points) reliance of Cistercians on land income, with the accompanying lower share of income from tithes described above. These results are in keeping with the characteristics of each order pointed out by other scholars. The Benedictines, as the richest and most established order, had deeper ties to the kinds of large religious institutions which tended to be the source of transfer income. The Cistercians, with their focus on settling in the "wilderness" and applying their labor to the land, drew much more of their income from that land.

Interestingly, there are few urban-rural, regional, and size differences in income sources. All of these variables have small non-significant coefficients, pointing again to the overall homogeneity of monastic income sources between regions. The only coefficient of any significance besides order variables is a slightly higher reliance on land among older monasteries, likely due to the longer period they had to acquire large properties before the enforcement of the Statutes of Mortmain.

Table 2.22: Income Share Regressions

	Land	Tithe	Transfer
ln(Net Income)	-0.014	0.001	-0.005
	(0.020)	(0.018)	(0.006)
Urban House	0.018	-0.047	0.064
	(0.093)	(0.058)	(0.088)
Suburban House	0.038	0.024	-0.006
	(0.062)	(0.066)	(0.021)
Age	0.052*	-0.016	-0.014
	(0.030)	(0.020)	(0.015)
Thames Basin	0.000	-0.022	0.025
	(0.063)	(0.051)	(0.033)
South and Southwest	0.009	-0.033	0.003
	(0.061)	(0.051)	(0.020)
Midlands	-0.078	0.072	0.002
	(0.055)	(0.050)	(0.015)
The North	0.010	0.022	-0.012
	(0.058)	(0.055)	(0.027)
Benedictine	-0.023	-0.050	0.061**
	(0.056)	(0.047)	(0.026)
Cistercian	0.145***	-0.108**	0.006
	(0.054)	(0.050)	(0.009)
Small Order	0.113*	-0.078	-0.009
	(0.058)	(0.051)	(0.010)
R-squared	0.095	0.088	0.125
R-squared Adj.	0.025	0.017	0.057

Standard errors in parentheses, * p<.1, ** p<.05, ***p<.01

Note: City location data from Buringh, all other data from the PRO edition of the *Valor Ecclesiasticus*.

When looking at regressions on the distance of income sources to their houses shown in Table 2.23, we see a few more statistically significant variables. For essentially mechanical reasons, larger houses tend to draw their land and tithe income from farther away than smaller ones, and we see tithes reaching houses over longer distances in the Midlands and the North. Once again the Cistercians show up as having more widely-scattered landholdings, perhaps reflecting their settlement in more marginal areas. Finally, the higher tithe distance of smaller houses is likely driven by the enormous distance between Carthusian houses and

Table 2.23: Median Distance of Income Source From House (km)

	Land	Tithe	Transfer
ln(Net Income)	2.339***	5.354***	3.552
	(0.890)	(2.050)	(5.945)
Urban House	2.320	-2.373	19.103
	(3.000)	(6.604)	(32.174)
Suburban House	2.966	-0.905	-11.656
	(3.822)	(7.074)	(15.758)
Age	-0.864	-5.055	-9.110
	(1.343)	(3.818)	(5.979)
Thames Basin	2.671	8.353	13.073
	(4.647)	(6.256)	(18.028)
South and Southwest	-1.201	5.812	17.212
	(2.417)	(3.902)	(15.445)
Midlands	-0.227	14.322***	9.202
	(2.350)	(5.341)	(10.997)
The North	1.999	10.998**	2.353
	(2.411)	(4.893)	(13.112)
Benedictine	2.001	5.291	9.969
	(1.715)	(4.295)	(10.977)
Cistercian	6.307**	2.197	-19.557
	(2.874)	(4.549)	(13.175)
Small Order	3.466	18.648*	21.554
	(5.732)	(9.801)	(20.624)
R-squared	0.135	0.263	0.232
R-squared Adj.	0.065	0.194	0.066

Standard errors in parentheses, * p<.1, ** p<.05, ***p<.01

Note: City location data from Buringh, all other data from the PRO edition of the *Valor Ecclesiasticus*.

the churches appropriated to them described above.

As with the purely descriptive statistics, there are larger differences in houses' expenditure shares, shown in Table 2.24. First, larger houses tended to spend more on alms, though again this could simply be down to their greater likelihood of receiving money from a named benefactor for perpetual alms. Suburban houses spent nearly ten percentage points less on fees for secular officials than their rural counterparts, likely due to the greater clustering of suburban possessions. Houses in all other regions spent more on fees and less on land than

Table 2.24: Expenditure Share Regressions

	Fee	Transfer	Alms	Land
ln(Net Income)	-0.001	0.023	0.020*	-0.019
	(0.020)	(0.021)	(0.010)	(0.018)
Urban House	0.003	-0.086	0.019	0.038
	(0.070)	(0.078)	(0.061)	(0.056)
Suburban House	-0.102*	0.001	0.052	0.051
	(0.062)	(0.077)	(0.050)	(0.051)
Age	-0.003	-0.020	0.016	-0.011
	(0.025)	(0.021)	(0.017)	(0.013)
Thames Basin	0.101**	0.047	-0.079*	-0.119*
	(0.050)	(0.069)	(0.041)	(0.064)
South and Southwest	0.164***	0.004	-0.036	-0.170***
	(0.060)	(0.069)	(0.043)	(0.059)
Midlands	0.085*	0.079	-0.003	-0.187***
	(0.046)	(0.070)	(0.046)	(0.058)
The North	0.100*	0.021	0.041	-0.250***
	(0.060)	(0.076)	(0.053)	(0.054)
Benedictine	0.095*	-0.027	0.007	-0.032
	(0.055)	(0.060)	(0.030)	(0.040)
Cistercian	0.045	-0.029	-0.010	0.031
	(0.057)	(0.070)	(0.038)	(0.041)
Small Order	-0.058	0.027	0.021	0.018
	(0.049)	(0.059)	(0.040)	(0.053)
R-squared	0.123	0.044	0.121	0.205
R-squared Adj.	0.055	-0.030	0.053	0.143

Standard errors in parentheses, * p<.1, ** p<.05, ***p<.01
Note: City location data from Buringh, all other data from the PRO edition of the *Valor Ecclesiasticus*.

those in East Anglia, with the greatest differences being a 16 percentage point increase in fees in the South and a 25 percentage point decrease in land expenditure in the North. Houses in the Thames Basin spent about 8 percentage points less on alms for named benefactors, but this could also reflect the greater wealth of the area. Interestingly, the Benedictines, independent of the size of their monasteries, spent roughly 9 more percentage points of their income on fees for secular officials.

Turning to Table 2.25, we see that urban and suburban houses, due to their position closer to major religious institutions, send transfers over much shorter distances than do

Table 2.25: Median Distance of Expenditure Destination From House (km)

	Transfer	Land	Synodals
ln(Net Income)	3.179	1.943	0.095
	(3.051)	(3.752)	(4.109)
Urban House	-34.025**	-6.335	23.652
	(14.547)	(23.420)	(28.877)
Suburban House	-29.879***	-23.764**	9.762
	(11.311)	(9.963)	(13.386)
Age	-5.193	-0.873	5.095
	(3.618)	(4.013)	(7.522)
Thames Basin	19.821*	6.724	52.733***
	(10.907)	(12.236)	(19.701)
South and Southwest	0.392	6.017	5.170
	(10.219)	(8.407)	(9.910)
Midlands	27.276***	30.950**	4.560
	(9.817)	(15.400)	(8.797)
The North	3.912	6.973	19.436
	(10.026)	(10.448)	(27.930)
Benedictine	17.956*	-0.025	-18.671
	(10.889)	(10.187)	(11.555)
Cistercian	10.843	2.120	-15.844
	(9.470)	(11.909)	(12.107)
Small Order	13.754	-6.216	17.032
	(9.481)	(12.871)	(26.707)
R-squared	0.175	0.108	0.301
R-squared Adj.	0.092	0.010	0.192

Standard errors in parentheses, * p<.1, ** p<.05, ***p<.01

Note: City location data from Buringh, all other data from the PRO edition of the *Valor Ecclesiasticus*.

their rural counterparts. Suburban houses also send land rents over much shorter distances than either urban or rural houses, interestingly running counter to the lack of difference in land *income* distance between the three categories. Houses in the Midlands sent both transfers and land rents over far greater distances than other regions. This, when combined with the tithe results above, makes the economic web of the Midlands houses far larger than those of any other region. The houses of small orders sent their transfers over a somewhat larger median distance, possibly a consequence of the increased distance between houses of

the same order.

2.8 Conclusion

The new dataset presented here offers a unique opportunity to study both the English monastic system and the Dissolution which destroyed it. This paper has found striking similarities in income sources across England despite the enormous social and economic differences between English regions. When combined with the stark differences in income sources between monastic orders, a picture emerges of sharply different collective cultures and management styles which were replicated by each order across England. The income share regressions add further weight to this point; no regional variables have statistically significant coefficients and the strongest predictor of the income mix of a given monastery is its order.

For expenditures, on the other hand, the primary predictors *are* regional, with Northern monasteries paying out large amounts in fees and alms, but very little in land rents while those in East Anglia did the opposite. These findings show that, while they saw to their own income according to the practices of their orders, monastic houses responded to local conditions through their spending.

Finally, perhaps the most important finding of this paper is the remarkably local nature of monastic economies, with houses in every region drawing a majority of their income from within a day's round-trip walk from the monastery. The same is true of nearly every order. Even the Carthusians, whose possessions are uniquely widely scattered, drew the majority of their income from under fifteen kilometers away. In this light, the Dissolution of the Monasteries appears not as the removal of distant extractive elites but as a tear in the social fabric of local communities.

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Chapter 3

Tenants in Revolt: The Dissolution of the Monasteries and the Pilgrimage of Grace

3.1 Introduction

Late in 1536, the most serious revolt in Henry VIII's reign broke out, beginning with a startlingly rapid uprising in Lincolnshire. As the King's commissioners advanced intent on dissolving Louth Park Abbey, tensions between the government and population reached a boiling point. A mix of gentry, secular clergy, and monks advancing both religious and economic demands quickly assembled a force of about 20,000 rebels to resist changes to their lives and religion. The rebellion was quickly dissolved under the threat of violent repression, but the Rising and the executions which followed helped spark a much more dangerous and widespread rebellion farther North.[1]

These rebels undertook a "Pilgrimage of Grace" beneath a banner depicting the Five Wounds of Christ, demanding an end to new taxes, the repeal of the Statute of Uses (a

1. Fletcher and MacCulloch, *Tudor rebellions*, 28.

law governing land rights), the reversal of Tudor religious innovations, and the restoration of the smaller monasteries suppressed by the King's commissioners.[2] The mix of religious and economic demands has created a long-running debate over the true motivations of the rebels that continues in modern historical writing. This paper uses a new dataset to provide the first econometric evidence in the debate between religious and economic causes of the rebellion.

3.2 Historical Background and Literature

The events at Louth Park Abbey were part of the Dissolution of the Monasteries, initiated after Henry VIII had separated England from the Catholic Church. Beginning in 1536, religious houses with under £200 in net income were "suppressed," with their monks pensioned off and their lands taken into the management of the Crown. Movable wealth was carted off to London, church bells were melted down to make cannons, and even the lead was stripped out of the roofs, leaving the skeletons of ruined but still standing monasteries dotting the English countryside.[3] This was profoundly disturbing to many in England, who saw monasteries as both important cornerstones of public religious life and institutions with a crucial social role.

After the spark at Louth, the rebellion rapidly spread northwest, jumping the Humber and tearing through Yorkshire into the Lake Counties.[4] Over fifty rebel musters took place across Northern England, with tens of thousands of rebels mustering, arming themselves, and joining into a number of huge hosts to put their demands to the King's representatives.[5] The tiny Royal army which met the main host outside Doncaster was far too small to offer any effective resistance to the massive rebel force, but the King's representatives were able to secure the rebel army's dispersal by promising amnesty and a fair hearing of their demands.[6]

2. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 154.
3. Woodward, *The dissolution of the monasteries*, 126.
4. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 176.
5. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 376.
6. Ibid., 386.

The rebels returned to their homes and villages, and the Crown immediately reneged on the promise of amnesty, arresting many of the rebellions leaders, subjecting many to interrogation and execution.[7] In the final analysis, the Pilgrimage accomplished very little, and may have even hastened the final destruction of monasticism in England by convincing the King that the "traitorouse monkes" and "naughtie religiouse persons"[8] were his implacable enemies and the cause of the rebellion.[9]

Historians who point to religious motivations for the Pilgrimage emphasize the lack of serious anticlericalism and anti-monasticism among a commons[10] which was not clamoring for the religious reforms initiated by the Crown.[11] Religious houses were also central players in the salvation of many ordinary people, with small houses in particular housing a large number of relics and pilgrimage sites for those too poor to make a major pilgrimage to Canterbury or the Continent.[12] Cistercian monasteries are singled out by historians as uniquely involved in the lives of ordinary people around them and a potential motivating factor for participation in the rebellion.[13] In addition, historians point toward the Carthusians[14] as strident opponents of the break with Rome and potential instigators of rebellion.[15]

One of the rebellion's leaders, Robert Aske, wrote at length on the positive social and economic role of the monasteries in the sparsely-populated areas of the North. He pointed to monastic hospitality on the long roads between Northern towns and monastic poor relief as essential functions in the poorer and more lightly-populated North.[16] Michael Bush, the

7. Fletcher and MacCulloch, *Tudor rebellions*, 38.
8. J. Clark, *The Dissolution of the Monasteries: A New History*, 285–6.
9. W, "The Dissolution of the Monasteries," 402.
10. The rebels used the word "commons" or "commonalty" as a collective singular noun to refer to themselves, the ordinary non-aristocratic people of England, a convention which I follow in this paper.
11. Ben R. McRee, "Traditional Religion," in *A Companion to Tudor Britain* (John Wiley & Sons, Ltd, 2004), 208, eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/9780470997109.ch13.
12. Heale, "Training in Superstition? Monasteries and Popular Religion in Late Medieval and Reformation England," 424–5.
13. Carter, "It would have pitied any heart to see: Destruction and Survival at Cistercian Monasteries in Northern England at the Dissolution," 83, 88.
14. A small and relatively conservative religious order originating in France and emphasizing seclusion and community life.
15. J. Clark, *The Dissolution of the Monasteries: A New History*, 267.
16. Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7*, 12.

author of one of the most comprehensive studies of the Pilgrims' motivations, argues for this view, seeing the negative economic effects of the Dissolution as the main motivation for rebellion.[17] These economic worries included popular fears that the North would be drained of coin when former monastic tenants instead sent their rents to the King.[18] Other authors emphasize the fear of monastic tenants potentially facing a change from a predictable institutional landlord to a potentially unpredictable individual.[19] In studies of Westminster Abbey, Barbara Harvey and other scholars have found that tenants and neighbors of monastic estates were some of the main sources of new novices joining the monastic life.[20] Monks retained ties to their families even after joining their religious houses, and monastic officials often used their positions to benefit family members, strengthening ties between monasteries and important local families.[21] These ties were put to use by some religious houses such as Furness and Holm Cultram Abbeys as they actively mobilized their tenants to join the rebellion.[22]

Other authors like Richard Hoyle downplay the role of the Dissolution, pointing out that the suppression of smaller houses had largely already been accomplished without incident by the time the Pilgrimage of Grace broke out. Hoyle sees the restoration of the monasteries as Aske's personal fixation rather than a factor motivating and mobilizing the commons.[23] In his view, the causes of the Pilgrimage can be found in the rumors racing up and down the North concerning new and arbitrary taxes, the pulling down of parish churches, and the seizure of church goods, the last of which was the most important.[24] New religious instructions promulgated immediately before the Pilgrimage added fuel to this fire, leaving out prayers to saints and prayers for deliverance of souls from Purgatory.[25]

17. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 17–18.
18. C. S. L Davies, "The Pilgrimage of Grace Reconsidered," *Past and present* (Oxford), no. 41 (1968): 60.
19. Joyce Youings, *The Dissolution of the Monasteries* (George Allen / Unwin Ltd, 1971), 20.
20. Harvey, *Living and Dying in England 1100-1540: The Monastic Experience: The Monastic Experience*, 75–6.
21. J. Clark, *The Dissolution of the Monasteries: A New History*, 64.
22. Davies, "The Pilgrimage of Grace Reconsidered," 64, 66.
23. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 48–50.
24. Ibid., 88–91.
25. Ibid., 86.

Another cause of rebellion may lie in the steep fiscal exactions of the newly-powerful Tudor state. Between 1509 and 1540, Henry VIII had pulled nearly twice as much from his country in taxes alone as his father had during his own unusually extractive reign.[26] A general lack of liquidity made early modern taxation very painful, often requiring the sale of personal assets.[27] Some scholars have noted the remarkable overlap between the areas of the Pilgrimage and traditional strongholds of tax resistance, particularly Richmondshire in North Yorkshire.[28] They point toward a deep continuity between the Pilgrimage and more traditional tax revolts, thereby de-emphasizing religion as a motivating factor.

Given the turbulence of the English Reformation and the uncertainty that surrounds any rebellion, the swirl of rumors and half-truths circulating through the North on the eve of the Pilgrimage form a crucial backdrop needed to understand the events of October 1536. Whispers about arbitrary taxation and deep changes to popular religion were racing across the North, made much more plausible by Royal changes to both the liturgy and the laws of property.[29] These rumors created the specter of a wholesale assault on religion at the parish level, with often-repeated rumors claiming that King and council intended to seize the gold and silver of parish churches and even tear them down.[30]

Finally, there are some authors who deny the possibility of "separating" religious and economic motivations, noting that the participants themselves would have seen no distinction between the proper ordering of the economy and the correct practices of the true faith, as both were simply expressions of the same divine will.[31] Thus, the plunder of the church and the plunder of the commons could be tied together to paint a picture of the Royal government upending the natural order of the kingdom for their own gain. Indeed, one of the primary goals of the rebels was to remove Thomas Cromwell, the perceived architect of

26. Fletcher and MacCulloch, *Tudor rebellions*, 27.
27. R W Hoyle, "Taxation and the Mid-Tudor Crisis," 656–8.
28. R. Hoyle, "Resistance and manipulation in early Tudor taxation: some evidence from the North," 174.
29. Fletcher and MacCulloch, *Tudor rebellions*, 28–9.
30. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 88–91.
31. Fletcher and MacCulloch, *Tudor rebellions*, 14.

the hated religious and fiscal changes, from the King's Council.[32] Religion was the language of *all* popular revolts during this period—even straightforwardly economic ones—which makes distinctions between religious and secular motivations even murkier.[33]

An episode which illustrates the complexity of rebel motivations which occurred in the Lake Counties is relayed by Scott Harrison, with rebels demanding a reduction in the tithes that went to support major monasteries[34] while the monks from some of those same monasteries were directly involved in rallying support for the rebels.[35] While it may be somewhat anachronistic, it is worth trying to sift out the *predictors*—and potentially the motivations—of rebellion rooted in taxation of the commons versus the assault on the church, and in particular to examine the effect of different channels between the Dissolution and the Pilgrimage of Grace.

3.3 Determinants of Revolt Literature Review

This paper can also add to the very large political science literature on the determinants of popular revolt. To do so, we first need to situate the Pilgrimage of Grace along the spectrum from civil disobedience to violent revolution. In her 1974 cross-national study, Diane Russell defines a *rebellion* as "a form of violent power struggle in which the overthrow of the regime is threatened by means that include violence," and successful *revolution* as occurring when "substantial social change follows a rebellion."[36] By this definition, the Pilgrimage sits somewhere just short of a rebellion. The rebels, as with most peasant revolts during the medieval and early modern period, did not aim at the overthrow of the King, but did seek the removal of important councilors and the reversal of major government policies.

As an episode of violent revolt, it is fruitful to view the Pilgrimage through the lens of

32. Michael L Bush, "'Up for the Commonweal': The Significance of Tax Grievances in the English Rebellions of 1536," 308, 312.
33. Wood, *Riot, rebellion and popular politics in Early Modern England*, 80.
34. Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7*, 59–60.
35. Ibid., 73.
36. Diana EH Russell, *Rebellion, revolution, and armed force: a comparative study of fifteen countries with special emphasis on Cuba and South Africa* (Academic Press Inc., 1974), 6.

the major theories of rebellion and civil violence found in the political science and political economy literature. Following the taxonomy laid out in the conclusion of James Rule's 1989 *Theories of Civil Violence*, violent episodes can be analyzed in five main ways: the individuals involved, mob and crowd dynamics, relative deprivation, breakdowns in government legitimacy, and struggles between groups.[37]

The individual view of civil violence focuses on the perceived costs and benefits for each individual to engage in violent action and is thus heavily influenced by game-theoretical models and rational choice analysis.[38] Weede and Muller take this view, focusing on an individual's potential for gain, cost of failure, and influence on outcomes as the key determinants of participation in rebellion. Their analysis predicts many elite rebellions but few genuinely popular revolts.[39] Granovetter adds some nuance to the individualist perspective through the application of a threshold model, in which potential participants in violent action will only join when a certain percentage of their fellows have begun engaging in violence.[40] Given a distribution of different thresholds and a structure of social connections that adds more "weight" to the participation of one's friends and family, this phenomenon leads to rapid and unpredictable conflagrations which are very sensitive to the dispositions and relationships of individuals.[41] While still writing in a game-theoretic mode, Goldstone critiques the focus on individuals, citing the role of pre-organized groups in mobilizing individuals for revolt.[42] In his view, the true actors in revolts and revolutions are groups which impose heavy costs for defection and provide strong incentives for conformity.

Combining the perspectives of Goldstone and Granovetter produces a very fruitful lens through which to view the *dynamics*, if not the *motivations* of the Pilgimage of Grace.

37. James B Rule, *Theories of civil violence* (Univ of California Press, 1989), 238–255.
38. Ibid., 238–241.
39. Erich Weede and Edward N Muller, "Rebellion, violence and revolution: A rational choice perspective," *Journal of peace research* 35, no. 1 (1998): 45–6.
40. Mark Granovetter, "Threshold models of collective behavior," *American journal of sociology* 83, no. 6 (1978): 1422.
41. Ibid., 1427–8, 1430.
42. Jack A Goldstone, "Is revolution individually rational? Groups and individuals in revolutionary collective action," *Rationality and Society* 6, no. 1 (1994): 141.

Treating each parish as a pre-organized group—one with far denser interpersonal ties than we see in most contemporary revolts—with a given threshold for rising based on the actions of its neighbors can help to explain the rapid spread of the rebellion across the entire North after the spark at Louth. Many parishes in the initial Lincolnshire Rising mustered in solidarity once they received news that nearby parishes had been raised.[43] As the rebellion spread to the Northwest, the main spark for local musters was the news that *other* parishes had begun mustering as well.[44] Threshold dynamics can help to explain a complex revolt which had no single overriding "ideology" tying all of the rebels together.[45]

A focus on the individuals involved in violence can also take a more psychological approach which may give more insight into the motivations of rebels. In their study of civil violence between 1948 and 1962, Feierabend and Feierabend point to the frustration of desires as a key cause of aggression in all cases, and the frustration of social desires as the cause of social aggression.[46] In their study, the rate of change in economic and social life is highly positively correlated with civil violence. Countries at the "end" of the modernization process see less violence, while those beginning or in the middle of the transition from traditional to modern societies see a great deal of it, with the key driver being the rate of social and economic change.[47] Indeed, authors like Polanyi have seen the primary role of conservative or paternalist action on the part of governments as an attempt to slow the rate of change and thereby reduce this frustration.[48] This framework can provide insight into the roots of the Pilgrimage, as peasants' desire for a predictable and orderly economic and religious life was frustrated by the rapid rate of Tudor fiscal and religious innovations.

Theories involving mob and crowd dynamics have been advanced by other scholars, and can be helpful in explaining some of the individual *actions* of the Pilgrims, but in my view

43. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 142.
44. Ibid., 176.
45. Ibid., 253–4.
46. Ivo K Feierabend and Rosalind L Feierabend, "Aggressive behaviors within polities, 1948-1962: a cross-national study," *Journal of Conflict Resolution* 10, no. 3 (1966): 250.
47. Ibid., 267.
48. Karl Polanyi, *The great transformation* (Boston: GowerBeacon Press, 1957), 37–39.

provide little assistance in explaining the larger dynamics or causes of the revolt. Theorists of mob dynamics point toward the "innovation" of new norms which permit behaviors far outside the bounds of everyday morality.[49] The innovation in norms may have enabled actions like those of the monks of Hexham, who greeted the King's commissioners drawn up for war,[50] or those of the commons across the North who threatened the persons and goods of the gentry to force them into leading the Pilgrimage.[51] However, the commission of previously forbidden acts is a definitional part of a revolt, so these theories are unlikely to shed much light on the causes of rebellion.

Other theorists point to deprivation as a crucial cause of revolt, with economic frustrations providing the motivation for violent action.[52] These theories suffer from the difficulty in defining a standard of living or degree of relative poverty which will reliably cause revolt, but empirical work by Kurer et. al. on post-Great Recession protests points toward the *level* of economic hardship reducing the propensity for revolt, but the *movement* toward greater hardship increasing it.[53] A similar phenomenon is put forward as the economic explanation for the Pilgrimage, with the introduction of new taxes creating an increase in economic hardship and motivating the revolt.[54] In addition, the economic effects of the Dissolution provide another potential increase in hardship for those dependent on the monasteries.[55]

A closely related body of work puts emphasis on breakdowns in legitimacy as crucial causes of violent revolts. Rule heavily criticizes these theories as nearly unfalsifiable and often circular (a rebellion necessarily involves at least some lack of government legitimacy for the population rebelling), but the religious element of the Pilgrimage may well be the cause of just such a sudden breakdown.[56] As mentioned above, the simultaneous increase

49. Rule, *Theories of civil violence*, 241–245.
50. J. Clark, *The Dissolution of the Monasteries: A New History*, 283.
51. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 222.
52. Rule, *Theories of civil violence*, 245–248.
53. Thomas Kurer et al., "Economic grievances and political protest," *European Journal of Political Research* 58, no. 3 (2019): 868.
54. Michael L Bush, "'Up for the Commonweal': The Significance of Tax Grievances in the English Rebellions of 1536," 304.
55. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 17–18.
56. Rule, *Theories of civil violence*, 248–250.

in the fiscal burden and the perceived assault on the Church led many to see the Royal government as upending the natural order and violating the obligations of a ruler to his people.[57] Given the very limited capacity of the early modern English state—particularly in the distant North—broad legitimacy and popular acquiescence was a necessary condition of stable government.[58]

Finally, another school of thought emphasizes struggles between groups within a polity as the primary cause of civil violence. Marxist approaches emphasize conflict between classes, while the intellectual descendants of Pareto focus on elites which have been excluded from power and their attempts to regain it.[59] Both of these factors are present to some degree within the Pilgrimage of Grace. In class terms, much of the commons correctly perceived the Dissolution of the Monasteries as primarily benefiting the gentry, the Crown, and the "new men" surrounding the King at the expense of both the religious and the local poor.[60] At the top of the social hierarchy, Northern nobles who had recently been snubbed by the King and his councilors stepped back and allowed the rebellion to proceed, and were often suspiciously enthusiastic once the commons had "forced" them to join the rebellion.[61]

3.4 Research Questions and Hypotheses

This paper seeks to provide econometric evidence to support or falsify a number of hypothesized causes of the Pilgrimage of Grace.

Authors like Richard Hoyle see the causes of the Pilgrimage in parish-level religious changes, increased taxes,[62] and rumors of more to come.[63] As rumors and views on parish religious changes are nearly impossible to detect quantitatively, an association between tax-

57. Fletcher and MacCulloch, *Tudor rebellions*, 10.
58. Wood, *Riot, rebellion and popular politics in Early Modern England*, 17.
59. Rule, *Theories of civil violence*, 250–255.
60. Wood, *Riot, rebellion and popular politics in Early Modern England*, 59.
61. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 129, 133.
62. R. Hoyle, "Resistance and manipulation in early Tudor taxation: some evidence from the North," 173–4.
63. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 17, 88–91.

ation and rebellion is the only testable implication of this view.

H_1: Measures of total taxation or increases in taxation will be positively and statistically significantly associated with rebellion.

If, on the other hand, authors like Michael Bush have the best explanation for the Pilgrimage, we should see monastic economic variables take on more significance, particularly in areas reliant on monks as landlords, sources of demand, or poor relief.[64]

H_2: Monastic landholding, alms, or net income will be positively and statistically significantly associated with rebellion.

The analysis in this paper seeks to confirm or disprove both of these hypotheses and add the first ever econometric evidence to the long-running historical debate over the Pilgrimage of Grace.

3.5 Data

3.5.1 The Rebellion

3.5.1.1 Rebel Musters

In the beginning of the Pilgrimage of Grace, rebels held small-scale local musters, often bringing together all the fighting-age men of a given area. These musters were the ground level of the revolt, often attracting so many willing participants that some had to be sent home for lack of supplies.[65] Figure 3.1 shows the distribution of rebel musters and seats of rebellious gentlemen across the North, running in a broad slash northwest from the initial confrontation outside Louth Park Abbey in October 1536, indicated by the red starburst.

In creating the dataset of rebel muster sites, I drew on maps in *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536* by M. L. Bush, the most comprehensive study of the participants of the Pilgrimage to date.[66] This study was based largely on the results of

64. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 18, 276.
65. Ibid., 58.
66. Ibid.

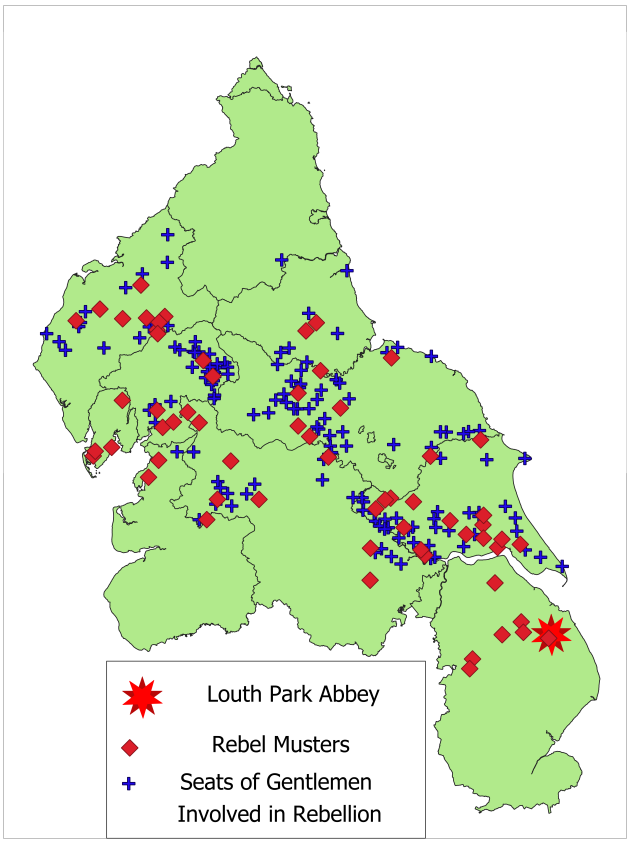

Figure 3.1: The Lincolnshire Rising and the Pilgrimage of Grace

the Royal investigation which took place after the rising. This investigation brought together testimony and documents from most of the primary actors on both sides of the rebellion and is the main source for most subsequent histories of the event.

This analysis only concerns the mustering sites of the Pilgrims, leading to obvious questions about the correlation between the sites of concentration and actual local support for the rebellions. It is certainly possible that rebels drawn from far away would muster at a given location (one potentially *not* surrounded by supporters of the rising) for strategic or practical reasons. However, testimonies from participants and witnesses often refer to the rebels returning to their homes at night, indicating that, at least for most rebels, the initial muster sites were likely very nearby.[67] In addition, men were often mustered and organized along the same lines as their parish militias, again pointing toward the local nature of the

67. R. W. (W. Hoyle, *The pilgrimage of grace and the politics of the 1530s*, 120.

initial musters.[68] A final piece of evidence pointing toward the local nature of the musters is their sheer density. With some musters less than 2 kilometers apart and most forming clusters at distances of 10-20 kilometers, many musters seem to have drawn on the population of a relatively small area. As very localized events involving a large proportion of the population, the presence of a rebel muster is thus a good indication that a given area was sympathetic to the aims of the Pilgrimage and ready to pick up arms in support of it.

Finally, I have divided the musters into "primary" and "non-primary" musters based on descriptions in Bush's work. Primary musters are the gatherings at which, according to Bush's account, local men first joined together and took up arms in revolt. Non-primary musters are those for which Bush's description does not appear to support this conclusion, and often took place along the rebel army's line of march rather than as an organic gathering of rebels. I cannot rule out new rebels joining the army at non-primary musters, but primary musters, as the places where local men crossed the line into rebellion, are a better indicator of local support.

3.5.1.2 Rebel Gentlemen

Bush's work also contains the names and county seats of rebel gentlemen, again based on documents and interrogations after the suppression of the rebellion. Many of these gentlemen had their own grievances against the Crown, and their energy and enthusiasm in working for the rebel cause after capture may indicate genuine sympathy with rebel aims.[69] However, the gentlemen involved in the rebellion almost unanimously claimed to have been forced to join under threat to their person or goods, generally the latter.[70] In my view, this also reflects local support for the rebellion, as the causal path runs from local support to gentlemen's involvement in the rebellion through threats to their houses and goods. The seats of rebel gentlemen therefore provide another, albeit rougher, indication of local support

68. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 30–1.
69. Ibid., 133.
70. Ibid., 193.

for the Pilgrims that contains both elements of elite grievance and popular enthusiasm.

3.5.2 The *Valor Ecclesiasticus*

In assessing the role of the Dissolution of the Monasteries in causing the Pilgrimage of Grace, the most crucial data concerns the monasteries themselves. Fortunately, the Crown undertook an extremely detailed survey of all Church property in England, called the *Valor Ecclesiasticus*, on the very eve of the Dissolution in 1535. This survey was conducted to provide a basis for taxation, and therefore sought to collect information on all income received by the monasteries, which tended to come from land, tithes, and transfers from other religious institutions. The expenditures recorded are more limited, with only specific types of outlays classified as deductible for tax purposes, including fees to secular officials, transfers to other religious institutions, and alms given in memory of named benefactors. This dataset combines this income and expenditure to produce a uniquely detailed picture of the English monastic system before the Dissolution.

Each monastery is listed in the *Valor*, with its income and expenditure broken down by type and location. Property during this period was generally referred to by the annual income it would yield rather than its purchase price, a convention followed in the *Valor*.[71] Each religious house is recorded with its sources of income broken down into an itemized list, generally beginning with the monastery's temporal possessions.[72] Each village in which the monastery owned land is listed along with the yearly proceeds in pounds, shillings, and pence.[73] The temporal section also includes any profits of woods, fisheries, mines, courts, etc. The spiritual income section includes any tithes from parish churches or transfers from other religious institutions sent to the monastery. As the *Valor* was collected for tax purposes, it (aspirationally) contains all monastic income, but only the portion of monastic expenditure which was deductible for tax purposes. These deductions included money paid

71. Purchase prices during this period were usually set at a given number of years' net income, often twenty.
72. "Temporal" possessions like land were distinguished from "spiritual" possessions like the right to collect tithe income.
73. This could be rents or proceeds from land farmed by the monks themselves.

out in land rent, transfers to other religious organizations, fees paid to stewards, bailiffs, and auditors, and alms *given perpetually from the foundation of a named benefactor.*[74] The survey is regarded as broadly accurate, particularly in recording land rents.[75] The amount of tithe and other spiritual income is somewhat less accurately reported, tending toward undervaluation but with very few outright omissions.[76]

As mentioned in Chapter 2.1, I have created a database which contains each entry in a sample of the *Valor*. To this dataset, I have added all entries from all houses in both the North of England and Lincolnshire. Each entry appears as a line consisting of the location of the religious house and the location of the counterparty in each "transaction," a value in pounds, shillings, and pence with sign indicating direction, and a series of dummies indicating the type of "transaction." Note that I use the word "transaction" to represent a single entry in the *Valor*, and therefore a specific amount of money sent or received over the course of an ordinary year. Any given entry may represent income from a number of nearby sources (e.g. multiple small parcels of land rented to tenants in the same town) or income received in a different number of individual installments, but they all represent an annual value of money or goods entering or exiting the monastic balance sheet. I have merged this data with an educational dataset from the National Archives containing information on the order, gender, and dissolution date of each house to create the final dataset. The dataset of transactions has been spatially joined with the shapefile of ancient parishes to create variables indicating the volume of money entering or leaving each parish due to each type of transaction. In addition, the location of individual monasteries has been spatially joined with the same parish file to create variables recording the presence of monasteries of specific orders and "small" (under £200 in net income per year) monasteries slated for dissolution.

In addressing the controversy over the motivations of participants in the Pilgrimage of

74. Hunter, *An introduction to the Valor Ecclesiasticus of King Henry VIII : with a map of England and Wales showing the distribution in dioceses*, 23–4.
75. Savine, *Oxford studies in social and legal history. Vol. 1, English monasteries on the eve of the dissolution*, 38.
76. Ibid., 48.

Grace, the monastic variables fall into two main categories. The first concerns purely religious motivations and the sheer fact of the Dissolution itself and includes variables like the presence of a monastic house and its net income (roughly proportional to its size and number of monks). The second category concerns monasteries as economic and social institutions, and includes variables like monastic land income, usually indicating rent paid by tenants on land owned by the monastery, tithe income paid by parishioners of churches "appropriated" to the monastery, and monastic alms expenditure, generally given to the poor at the site of the monastery itself. The significance or insignificance of these two sets of variables will provide valuable evidence on the potential motivations of those who took part in the Pilgrimage.

3.5.2.1 Land

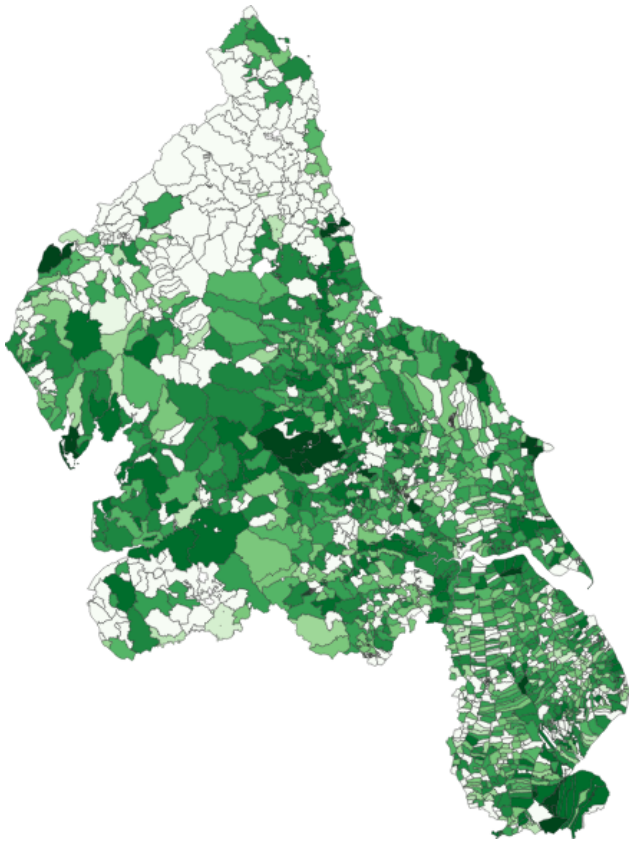

Figure 3.2: Monastic Land Income by Parish

The "land" variable represents income from the monastic demesne worked largely by

hired laborers, rent paid by tenants, and leases paid by larger farmers. Each of these three categories of land income represents a group of people in some way economically dependent on the monasteries and often with close personal connections to them. These are also the people who faced an uncertain future once monastic lands were turned over to the Crown or to private purchasers.

As can be seen in Figure 3.2, there is very little land income recorded in the *Valor* for Northumberland, and a region overlapping the border between the North and East Ridings of Yorkshire is substantially thinner than the regions surrounding it. This is due to some damage to the *Valor* itself, and will be covered in more detail below.

In the North, the median distance of a land income source from a monastic house was 18 kilometers, relatively close but difficult to travel and return in a single day on foot.[77] This likely overstates the distance to the median monastic tenant, as monasteries generally held larger parcels of land (or larger collections of parcels all listed in the same entry) closer to the house itself.

3.5.2.2 Tithes

The "tithe" variable represents income from churches "appropriated" to the monastery, an arrangement in which the monastery would collect a parish's tithes in exchange for staffing its church. In parishes very close to monasteries this job was often done by the monks themselves while vicars were generally hired for those further away.[78] Tithes *did* often come from somewhat farther away than land income at an average of 28 kilometers, leaving the providers of this form of monastic income a bit more distant from—and therefore less likely to have personal ties with—the monasteries they paid into. In addition, monasteries often purchased grain from their own tenants, effectively converting their rents from cash to in-kind and forging closer economic bonds.[79] This distance and the lack of back-and-forth created by

77. See Chapter 2.
78. Knowles, *The tudor age*, 50.
79. Threlfall-Holmes, *Monks and Markets : Durham Cathedral Priory 1460-1520.*, 139.

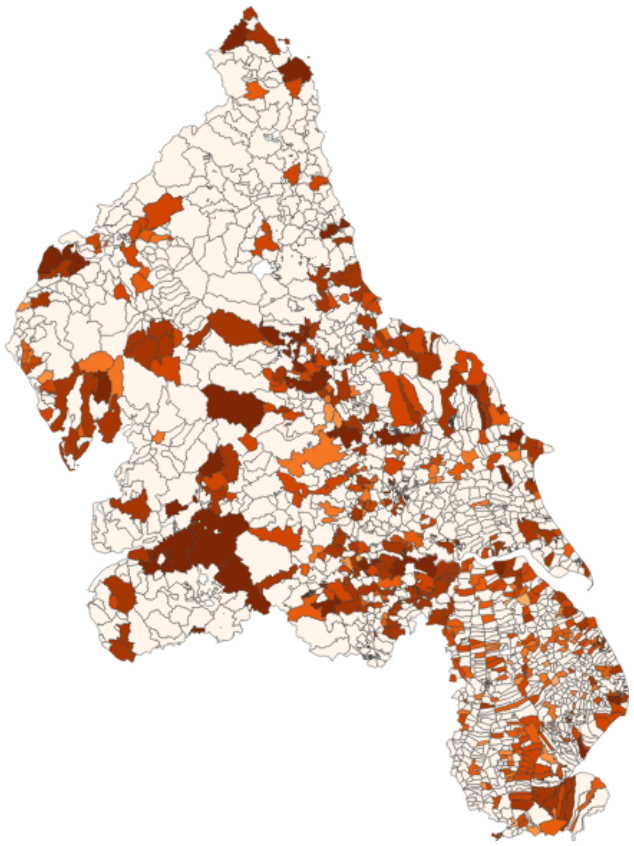

Figure 3.3: Monastic Tithe Income by Parish

the combination of rents and grain purchases described by the land income variable creates the impression of a more extractive relationship between the owners and payers of monastic tithes.[80] Indeed, other scholars point toward this extractive relationship as a motivator for the Pilgrimage, with Pilgrims in the Lake Counties in particular rising up *against* the tithes levied by the larger abbeys while their fellows rose up (potentially) against the Dissolution.[81]

3.5.2.3 Alms

Almsgiving was one of the primary functions of England's monasteries, second only to their redemptive role. Alms were often given in bread, beer, or coin, and were generally given within the grounds of the monasteries themselves. The loss of these alms was a direct material

80. Note that this "tithe" variable also includes a very small portion of glebe income. Glebe was the land around a parish church, and was appropriated to the monasteries with the parish churches themselves so has been included with the tithe income.

81. Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7*, 59–60.

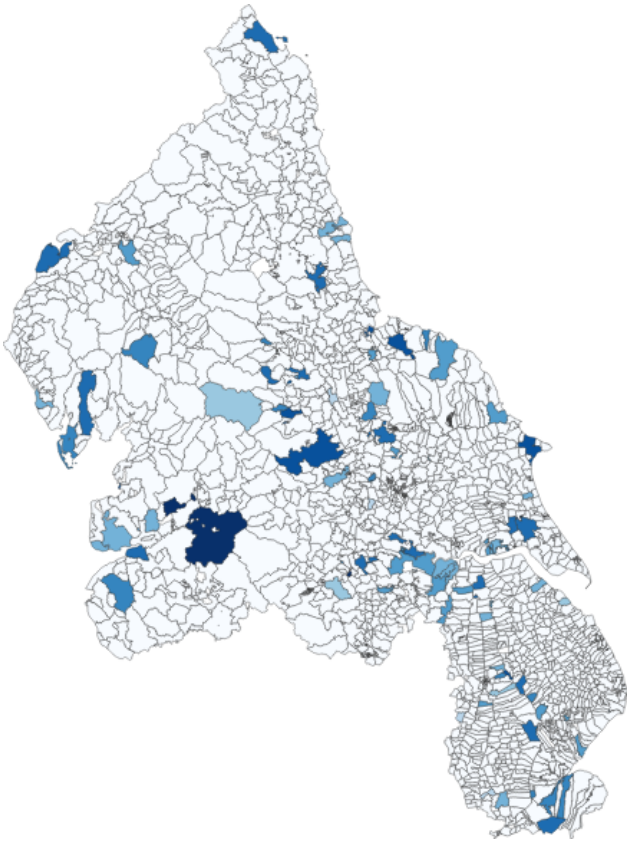

Figure 3.4: Monastic Almsgiving by Parish

consequence of the Dissolution that hit local paupers particularly hard, and a key potential motivation for the Pilgrimage as a whole.[82] Despite the central role of alms in both the popular image and stated mission of monasteries, the scale of monastic almsgiving was very small relative to monastic incomes if only the figures in the *Valor* are taken into account, coming in at around 2% of monastic expenditure across England. However, this seeming stinginess is likely due to a quirk of the *Valor*, which only records alms given perpetually from the donation of a named benefactor. A few entries in the *Valor* contain ordinary alms given by the monastery, but these are struck out with a marginal note reading "disallowed." In the few entries where this occurs, the total value of disallowed alms can run to over seven times that of those permitted. While there may be some correlation between alms given for named benefactors and total alms given (as larger monastic foundations would tend to have

82. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 18.

more of both), the ratios between allowed and disallowed alms vary greatly, indicating that alms figures recorded in the *Valor* are not a reliable guide to monastic charity before the Dissolution.

3.5.2.4 Monasteries and Their Income

A fourth key variable is the presence of monasteries and their net income. I have used net rather than gross income as the primary measure of monastic income. Net income figures are available for all houses while gross income is not, for reasons discussed below. The net income figures given by the National Archives' dataset comprise the gross income of each monastery less the costs of land rental, fees to secular officials, perpetual alms, transfers to other religious institutions, and corrodies paid out to individuals.[83]

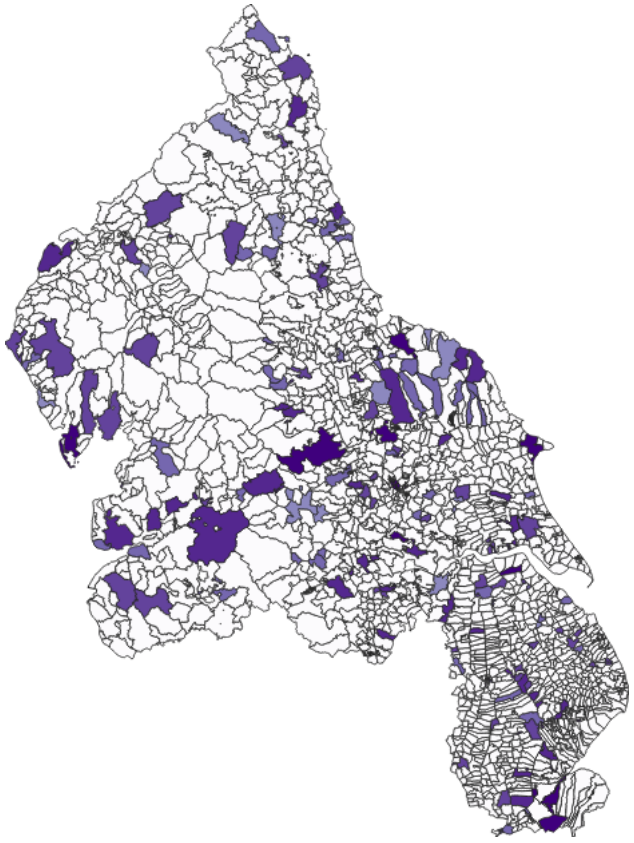

Figure 3.5: Recorded Net Flow Through Monastic System by Parish

83. Corrodies were essentially annuities which were paid out in kind, often purchased to provide material security for the purchaser in old age.

These expenses are already recorded in the dataset, but the Net Income figure represents monastic purchasing power above and beyond these figures, much of which would have flowed back into the local economy. The redirection of this purchasing power after the Dissolution could have been disastrous for towns that relied on—and in many cases had arisen in the first place because of—their local monasteries.

Despite the potential economic benefits of living near a monastery with a high net income, there could also be substantial drawbacks. Monasteries and their inhabitants were often powerful and controversial players in local politics, throwing their weight around at the expense of their secular neighbors. For example, the abbey at Bury St Edmunds had been protecting its own often violent staff from justice for over a decade before one of its secular officials murdered a man in 1539.[84] However, incidents of this kind were becoming increasingly rare as relations between the monks and secular society improved during the century leading up to the Dissolution.[85]

I have used variables indicating both the presence of a monastery and the net income of said monastery despite their substantial overlap because of the controversy in the literature over whether the Pilgrimage was motivated more by the *fact* of the assault on the monasteries or by the economic *effects* of that assault. Figure 3.5 shows these variables, with each shaded parish containing a religious house and darker parishes containing houses with a larger net income.

3.5.3 Other Data

In order to properly evaluate the relative importance of the Dissolution of the Monasteries, we also need information on underlying economic conditions in each parish. These conditions have been identified as potential drivers of revolt either in combination or in contrast with Dissolution-related motivations. In the first of the non-monastic economic variables, we have the population of towns in each parish based on a dataset compiled by Patrick Wallis

84. J. Clark, *The Dissolution of the Monasteries: A New History*, 99–100.
85. J. G. Clark, "Religion and politics in English monastic towns," 278–9.

and Charlie Udale. This dataset combines both the diocesan survey of 1563 (mostly for smaller towns) and the estimates of Jan De Vries (mostly larger towns). For towns with no population estimates in the Wallis-Udale dataset, I have substituted estimates from Eltjo Buringh, who has produced an updated version of the Bairoch urban population dataset.[86] This combined dataset comprises a large proportion of entire population of the North. As we will see below, switching between Wallis/Udale, Buringh, and combined population datasets changes the sign and significance of the population variable, but not that of the variables of interest. This largely indicates that different sizes of towns were more or less likely to see rebel musters, but does not cast doubt on the relevance of monastic variables to the rebellion.

The use of a population estimate from after the Pilgrimage of Grace may raise some eyebrows, but the rebellion itself was not particularly destructive of lives or capital and was suppressed through trickery and "politicking" rather than violence. No substantial violence or sustained campaign of repression occurred which would have affected the distribution of population in the decades following the rebellion. Due to these concerns, however, I have also conducted regressions using only Buringh's estimates of population in 1500, with much the same results.

For parish boundaries, I have used the shapefile of the ancient parishes of England and Wales circa 1851 created by the Cambridge Group for the History of Population and Social Structure. These boundaries changed somewhat between 1536 and 1851, but I have used a number of strategies to account for these changes, described below.

For the population and wealth of the countryside, I manually created shapefiles based on maps in "The Distribution of Taxable Population and Wealth in England During the Early Sixteenth Century" by John Sheail. These maps were created based on the returns of the 1524-5 lay subsidy, which was a tax levied on each man's household property, landed income, or wages, whichever was greatest. Men with below £2 of goods and £1 of land or

86. The original dataset is a set very widely-used population estimates from the 1988 article "The population of European cities, 800-1850" by Bairoch, Batou, and Chevre.

wage income were excluded. The rates were 2.5% on goods if valued at below £20 and 5% on landed income or goods valued at above £20. Wage incomes were theoretically also taxed at 5%, but in practice subsidy commissioners tended to impose a flat poll tax of 4 pence on wage-earners.[87] The goods tax accounted for a majority of taxpayers and a vast majority of value, making the subsidy returns a reasonably good proxy for the actual material wealth in a given parish.[88] Unlike many of the other post-1334 lay subsidies, those of 1524 and 1525 are regarded by scholars as relatively accurate.[89]

A mean figure per taxpayer can be calculated by dividing the tax revenue density (in shillings per square mile) by the taxpayer density (taxpayers per square mile) in each parish, where both are available. This figure papers over substantial differences in types of wealth and shows only sufficiently wealthy male heads of household. The subsidy rolls record 111,923 taxpayers in 1524-5,[90] less than 5% of an English population estimated at 2.35 million.[91] However, as parish registers do not begin until 1538 at the earliest, this figure is likely the best available measure of wealth at the parish level during this period.

The 1525 lay subsidy data is provided as a range, e.g. 0-1 taxpayers or 40-49 shillings per square mile. The highest revenue and taxpayer density brackets are "50 shillings and over" and "20 taxpayers and over," so the upper end of these ranges have been assigned to 100 shillings and 40 taxpayers. I have conducted analyses with the lower and upper limits, and with the mean of each range. As no choice in selecting these figures meaningfully alters the final results, I have reported the coefficients of the regressions containing the mean values.

Including this variable restricts the sample somewhat, as there are no returns for Cumberland, most of Westmorland, Northumberland, and Durham. I have dropped this variable for some of the final regression specifications to ensure that the exclusion of these regions

87. John Sheail, "The Distribution of Taxable Population and Wealth in England during the Early Sixteenth Century," *Transactions of the Institute of British Geographers*, 55 1972, 111–12.

88. Ibid., 112.

89. J F Hadwin, "The Medieval Lay Subsidies and Economic History," *The Economic History Review* 36 (2 1983): 202.

90. Sheail, "The Distribution of Taxable Population and Wealth in England during the Early Sixteenth Century," 115.

91. Broadberry, *British economic growth, 1270-1870*, 20.

has no effect on the coefficients of interest, but the other regressions are run without these counties.

I have also included the percentage change in the Lay Subsidy between the 1332 assessment and the 1525 assessment, drawn from Heldring, Robinson, and Vollmer.[92]

The shapefiles were created by overlaying each image on the Ancient Parishes shapefile and selecting the parishes in each shaded region on the map. In the vast majority of cases, the parish boundaries lined up perfectly, but where this was not the case I assigned each parish to the population or revenue bracket containing the majority of its area.

Finally, the terrain variables are drawn from the Atlas of Rural Settlement of England and Wales, and each parish is assigned the terrain type under its centroid. This puts each parish into the "Lowland," "Upland," or "Intermediate" category, and provides a very rough way to control for differences in attitudes and relationships to government in different settlement zones.

3.5.4 Limitations of the Data

This data, as with so much in the early modern period, has a number of flaws which should temper any strong conclusions drawn from this paper's analysis. These flaws can broadly be divided between damage to the original record, changes in parish boundaries between the sixteenth and nineteenth centuries, and potential errors in georeferencing early modern towns.

3.5.4.1 Damage to the *Valor*

One of the most serious limitations of this dataset is the extensive damage to the *Valor Ecclesiasticus* itself. Sections covering most of Northumberland and some of the North and East Ridings of Yorkshire have been lost and damaged. Both the records of the Royal commissioners and the original *Valor* have been lost and damaged, but net income figures

92. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," 2124.

survive through a "digest" version of the *Valor* called the *Liber Valorum*. The National Archives used the *Liber Valorum* figures to fill in net incomes where they were missing from the *Valor*. As can be seen in Figure 3.6, most of the monasteries missing line-item data are relatively small, but they are highly concentrated in two clusters covering most of Northumberland and spanning the border between the East and North Ridings of Yorkshire.

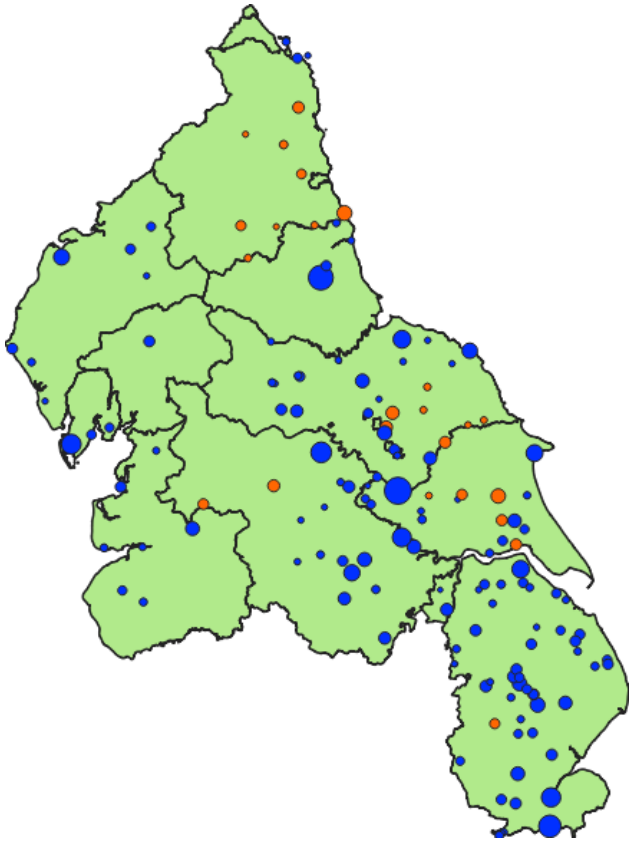

Figure 3.6: Map of Complete (Blue) and Incomplete (Orange) Houses

As each house tended to hold most of its possessions and draw most of its income from a relatively small area, a missing house will create a visible gap in any maps of the monastic variables taken from the *Valor*. These gaps can clearly be seen in the maps of these variables shown above, with most of Northumberland and some of Yorkshire having less recorded monastic land and tithe income than was likely the case in reality.

Despite the extent of the damage, it seems unlikely that damage to the *Valor Ecclesiasticus* would correlate with any monastic or economic variables of interest, or with the

prevalence of rebel musters. Nevertheless, to account for this problem, I have included a "less damage" version of each analysis which removes Northumberland. This created little change in effect sizes or significance. These specifications still leave the potential issue of houses with incomplete entries holding substantial property in other counties, but given the local nature of the average house's holdings this seems unlikely.

3.5.4.2 Parish Boundary Changes

My primary unit of analysis is the parish. It was the fundamental social unit of medieval English society and was the basis for organizing the Pilgrimage itself.[93] The mean parish in the North had an area of approximately six square kilometers and was the lowest ecclesiastical and civil administrative unit. Nearly everyone in a parish would have known everyone else, and during the Pilgrimage they generally took up arms or declined to do so as a unit. The boundaries of parishes changed somewhat in the roughly 300 years between the events of the Pilgrimage and 1851, so I have used a number of strategies to reduce the impact of specific parish boundary changes on the results.

I have included an inverse distance weighted specification for most of the relevant variables, dividing each value in the underlying dataset (e.g. the annual value of land owned by a monastery, the population of a given town, etc.) by the distance from that point to the edge of the parish in question. Each inverse-distance-weighted variable has a minimum cutoff distance of 7 miles or 11.2km (a conservative estimate of a day's walk and return), after which it is assigned a value of one to avoid near-infinite values at very small distances.[94] The maximum distance is set to 112km, though properties at distances greater than this would likely have very little influence on the inverse distance weighted variables. The reasons for including this specification are twofold. Most importantly, this construction dramatically reduces the impact of georeferencing errors or parish boundary changes. If a parcel of monastic land

93. Wood, *Riot, rebellion and popular politics in Early Modern England*, 51.

94. Rosemary Horrox and W Mark Ormrod, *A Social History of England, 1200–1500* (Cambridge University Press, 2006), 147.

is mistakenly assigned on the wrong side of a parish boundary or that boundary had shifted since the sixteenth century, only a small change in the inverse-distance-weighted variable would result. A second reason to use an inverse-distance-weighted specification is to capture the spillover effects which almost inevitably existed. Although parishes tended to revolt (or not) as units, the people in them were impacted by the views, actions, and circumstances of their neighbors outside the parish. These factors cannot be captured if each parish is treated in isolation, so inverse-distance-weighting the variables better reflects the influences of a parish's local area.

I have also generated grids of 1, 2, 5, 10, and 20 kilometers covering the North of England, then conducted a negative binomial regression on the number of rebel musters in each cell, with similar results to the parish regression. This does less to address georeferencing errors (though larger grid sizes will be more tolerant of small errors), but helps to eliminate the parish boundary problems discussed above.

3.5.4.3 Georeferencing Issues

Much like the boundaries of parishes, the names of some towns and villages have changed substantially in the nearly five hundred years since the Dissolution. In addition, many towns share names with close or distant neighbors in the same county, making georeferencing less reliable. As laid out in more detail in the previous chapter, significant care has been taken to select proper coordinates for each village, using multiple sources and following some heuristics to minimize error. Despite these efforts, some errors will inevitably slip through, placing income sources or expenditure destinations on the wrong side of parish boundaries and thus creating errors in the parish variables.

The two strategies for reducing the effect of parish boundary changes detailed above also help to solve any potential georeferencing issues by softening the potentially large effect of putting a point on the wrong side of a parish boundary.

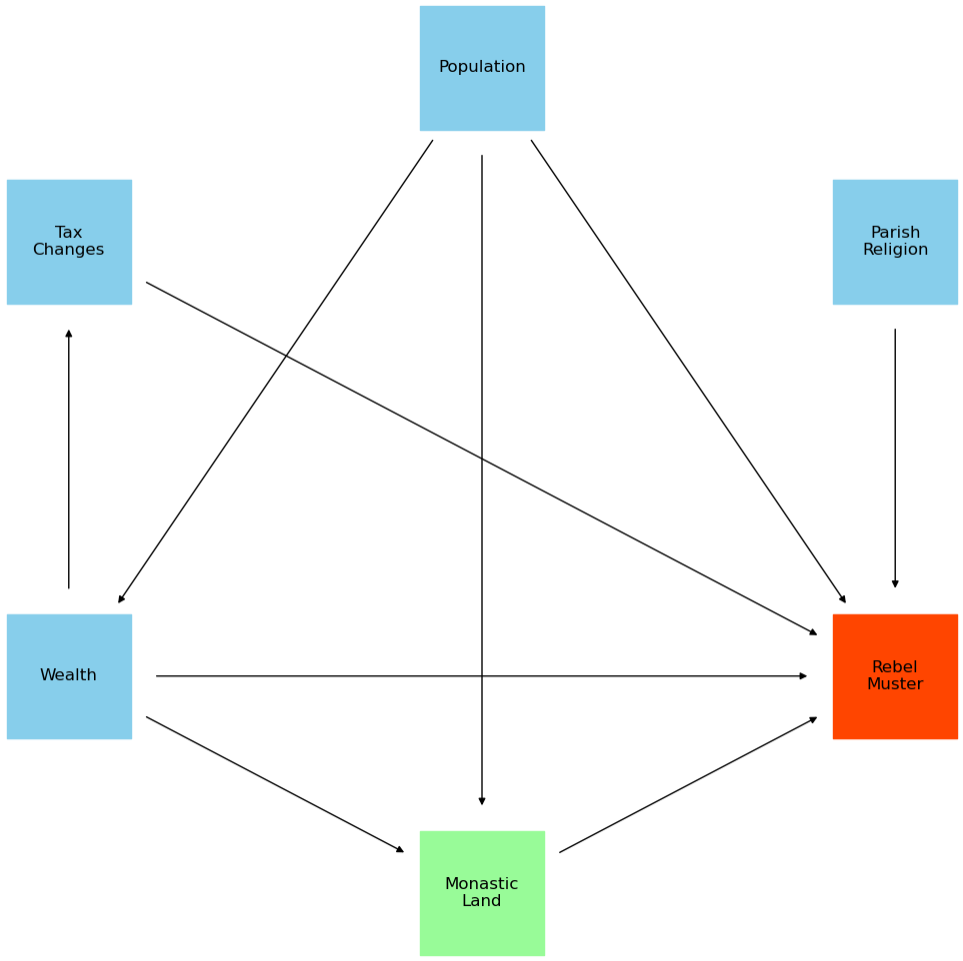

Figure 3.7: Causes of Rebellion DAG

3.6 Results

3.6.1 Directed Acyclic Graph and Causal Inference

In order to make explicit the potential causal connections between the variables I am investigating, I have constructed a directed acyclic graph (DAG) with causal arrows between the variables of interest, shown in Figure 3.7. This graph models only the connections between these variables in a given parish, and not in the North as a whole.

The key causal chain I will be investigating is the link between monastic land and my three measures of rebellion. In theory, and according to the simplified relationships in the DAG, the only variables required to create d-separation and isolate the controlled direct

effect of land are population and wealth, presented in Table 3.1

Table 3.1: DAG Regression Results

	Dependent variable:		
	Muster	Primary Muster	Rebel Seats
	logistic	*logistic*	*Poisson*
	(1)	(2)	(3)
ln(Monastic Land)	0.092**	0.135**	0.039
	(0.043)	(0.061)	(0.024)
ln(Population)	0.222***	0.254***	0.125***
	(0.042)	(0.054)	(0.027)
ln(Lay Subsidy Per Capita)	0.096	0.006	0.121*
	(0.122)	(0.178)	(0.067)
Constant	−3.853***	−4.786***	−2.465***
	(0.296)	(0.441)	(0.154)
Observations	1,033	1,033	1,033
Log Likelihood	-185.455	-112.689	-432.052

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita is drawn from Heldring, Robinson, and Vollmer (2021).

The results of this simplified model point toward land as a key predictor of rebellion at the parish level. In order to better account for potential causal effects not captured in the simple model above, all further regressions will contain many more variables.

3.6.2 Main Regression Specification

All of the regressions presented below follow the same basic form:

$$\begin{aligned} Rebellion_i = \beta_0 + \beta_1 MonasticLand_i + \beta_2 Tithe + \beta_3 Alms + \beta_4 MonasticIncome \\ + \beta_5 TaxLevel_i + \beta_6 TaxChange_i + \beta_7 Population_i + \beta_8 \mathbf{X}_i + \epsilon_i \end{aligned} \tag{3.1}$$

Rebellion is one of the three indicators of rebellion discussed above (muster, primary muster, or rebel gentleman), MonasticLand is monastic landownership, Tithe is the value of tithes

collected, Alms is the value of recorded almsgiving, MonasticIncome is the value of monastic income net of expenses, TaxLevel is the estimated lay subsidy per capita in 1525, TaxChange is the change in taxation between 1332 and 1525, Population is the population figure described above, and $\mathbf{X}$ is a vector of geographic covariates including x and y coordinates, terrain type, slope, elevation, and distance from the outbreak of the rebellion at Louth Park Abbey.

3.6.3 Logistic Regressions

I begin with a simple logistic regression of the rebel muster dummy on the value of monastic land in each parish, then add the other monastic variables, taxation and population, and geographic controls. The coefficient for monastic land ownership is consistently positive and statistically significant across all three measures of rebellion. The effect is also practically significant, with a doubling in the amount of monastic land in a parish associated with a roughly nine percentage point increase in the probability of a primary rebel muster. It is worth noting that the value of alms given is consistently positive, but only weakly significant, and decreasingly so as more variables are added. As mentioned above, the alms recorded in the *Valor* are only those given perpetually from the bequest of a named benefactor, so it is possible that the regularity of these alms had become a fixture in local communities or that these bequests indicate a tighter connection with local people, but the evidence is currently insufficient to draw any strong conclusions.

Note that N drops slightly when geographical variables are included, as certain rare values of the "terrain type" variable perfectly predict (a lack of) rebel musters in a given parish and have therefore been dropped from the analysis.

3.6.4 Survival Analysis

As the rebellion was a dynamic event that spread northwest over a matter of weeks as new parishes heard the news of the uprising, it may be more appropriate to use a survival analysis

Table 3.2: Logistic Regression Results - Rebel Musters

	Dependent variable:			
	Rebel Muster			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.133***	0.127***	0.087*	0.095*
	(0.042)	(0.047)	(0.048)	(0.050)
ln(Tithe)		−0.064	−0.080*	−0.091*
		(0.047)	(0.048)	(0.052)
ln(Alms)		0.158*	0.174*	0.143
		(0.096)	(0.103)	(0.121)
ln(Net Income)		−0.002	−0.016	−0.053
		(0.060)	(0.064)	(0.074)
Friary		1.007**	0.747	0.769
		(0.484)	(0.523)	(0.542)
ln(Lay Subsidy)			0.162	0.224
			(0.132)	(0.150)
Lay Subsidy Change			−0.917	−0.640
			(0.750)	(0.763)
ln(Population)			0.212***	0.171***
			(0.043)	(0.051)
Geographic Controls	*N*	*N*	*N*	*Y*
Observations	1,033	1,033	1,033	989
Log Likelihood	-197.649	-193.183	-181.014	-169.978

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, tithe is the value of tithes taken from the parish in pounds, alms are the amount of recorded alms distributed in the parish in pounds, net income is the calculated net income of any monastic house in the parish in pounds, friary is a dummy representing the presence of a friary based on a dataset from The National Archives, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita and lay subsidy change are drawn from Heldring, Robinson, and Vollmer (2021).

model rather than a simple cross-sectional logistic model. A Cox Proportional Hazard model can take into account the differing times at which different parishes were "exposed" to the potential for rebellion by hearing the news of risings farther south and east.

Using the combination of the Roman road network (still the core routes of the early modern road network) and a map of historical shipping routes shown in Figure 3.8, I estimated that news of the rising at Louth Park Abbey at an average of 50 kilometers per day via road

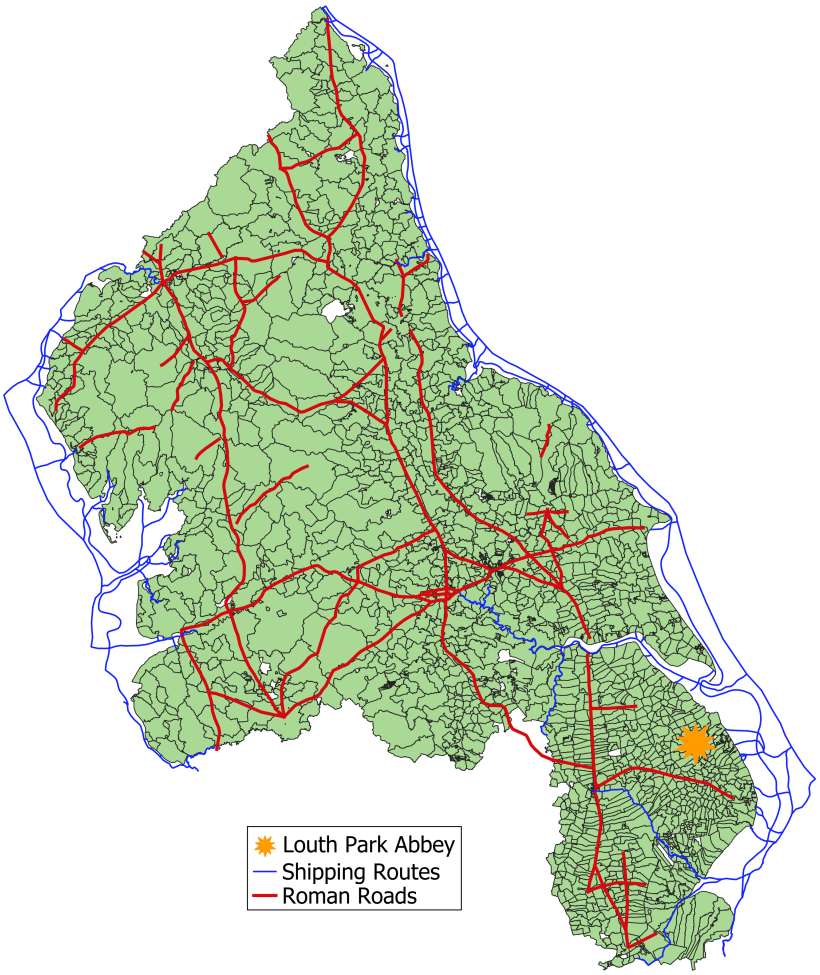

Figure 3.8: Shipping Routes and Roman Roads of Northern England

Table 3.3: Logistic Regression Results - Primary Musters

	Dependent variable:			
	Primary Muster			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.185***	0.182***	0.137**	0.135*
	(0.061)	(0.067)	(0.068)	(0.070)
ln(Tithe)		−0.040	−0.062	−0.062
		(0.058)	(0.060)	(0.062)
ln(Alms)		0.246*	0.280*	0.271
		(0.138)	(0.153)	(0.174)
ln(Net Income)		−0.105	−0.139	−0.219*
		(0.096)	(0.105)	(0.126)
Friary		0.939	0.454	0.343
		(0.650)	(0.709)	(0.727)
ln(Lay Subsidy)			0.098	0.085
			(0.193)	(0.214)
Lay Subsidy Change			−1.966*	−2.223*
			(1.159)	(1.334)
ln(Population)			0.250***	0.230***
			(0.055)	(0.065)
Geographic Controls	*N*	*N*	*N*	*Y*
Observations	1,033	1,033	1,033	989
Log Likelihood	-123.129	-120.723	-108.760	-104.192

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, tithe is the value of tithes taken from the parish in pounds, alms are the amount of recorded alms distributed in the parish in pounds, net income is the calculated net income of any monastic house in the parish in pounds, friary is a dummy representing the presence of a friary based on a dataset from The National Archives, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita and lay subsidy change are drawn from Heldring, Robinson, and Vollmer (2021).

and 80 kilometers per day via ship. Calculating "exposure" times for the centroid of each parish, I then constructed a "survival" variable by subtracting the "exposure" day from the day of the first primary muster. If the parish experiences no muster, I set the survival value to the difference (in days) between the end of the rebellion i.e. the confrontation at Doncaster and the dispersal of the rebel army. As with the logistic model, the value of monastic land in a parish is a statistically significant predictor of rebellion, indicating that parishes

Table 3.4: Logistic Regression Results - Seats of Rebel Gentlemen

	Dependent variable:			
	Rebel Seats			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.064***	0.069***	0.037	0.061**
	(0.023)	(0.026)	(0.027)	(0.028)
ln(Tithe)		0.009	0.004	−0.006
		(0.026)	(0.026)	(0.027)
ln(Alms)		0.003	−0.001	−0.114
		(0.078)	(0.080)	(0.111)
ln(Net Income)		−0.047	−0.049	−0.055
		(0.044)	(0.045)	(0.048)
Friary		−0.396	−0.667	−0.812
		(0.643)	(0.662)	(0.643)
ln(Lay Subsidy)			0.197***	0.276***
			(0.074)	(0.086)
Lay Subsidy Change			−1.430***	−1.509***
			(0.460)	(0.516)
ln(Population)			0.127***	0.122***
			(0.027)	(0.031)
Geographic Controls	*N*	*N*	*N*	*Y*
Observations	1,033	1,033	1,033	989
Log Likelihood	-441.993	-440.631	-423.830	-382.254

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, tithe is the value of tithes taken from the parish in pounds, alms are the amount of recorded alms distributed in the parish in pounds, net income is the calculated net income of any monastic house in the parish in pounds, friary is a dummy representing the presence of a friary based on a dataset from The National Archives, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita and lay subsidy change are drawn from Heldring, Robinson, and Vollmer (2021).

with more monastic land were more likely to rebel and did so sooner than parishes with less monastic land. The coefficient of .132 gives a hazard ratio of 1.14 ($e^{.132}$) for each increase of a factor of e in the value of monastic land in a parish. In more human terms, a doubling of monastic land in a parish results in a ten percent higher instantaneous risk of rebellion at any given point in time.

Table 3.5: Cox Proportional Hazards Model - Primary Musters

	Dependent variable:		
	Primary Muster Risk		
	(1)	(2)	(3)
ln(Land Owned)	0.182***	0.138**	0.132*
	(0.066)	(0.066)	(0.068)
ln(Tithe)	−0.038	−0.063	−0.063
	(0.056)	(0.057)	(0.060)
ln(Alms)	0.248*	0.317**	0.257
	(0.128)	(0.146)	(0.170)
ln(Monastic Net Income)	−0.105	−0.159	−0.198
	(0.091)	(0.105)	(0.121)
Friary	0.849	0.438	0.391
	(0.601)	(0.627)	(0.639)
ln(Lay Subsidy)		0.078	0.082
		(0.188)	(0.202)
Lay Subsidy Change		−2.196*	−2.682**
		(1.133)	(1.246)
ln(Population)		0.237***	0.229***
		(0.052)	(0.062)
Population	*N*	*Y*	*Y*
Geographic Controls	*N*	*N*	*Y*
Observations	989	989	989
R^2	0.016	0.041	0.045
Max. Possible R^2	0.323	0.323	0.323
Log Likelihood	-184.510	-172.165	-169.750

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, tithe is the value of tithes taken from the parish in pounds, alms are the amount of recorded alms distributed in the parish in pounds, net income is the calculated net income of any monastic house in the parish in pounds, friary is a dummy representing the presence of a friary based on a dataset from The National Archives, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita and lay subsidy change are drawn from Heldring, Robinson, and Vollmer (2021).

3.6.5 Propensity Score Matching

Because the distribution of monastic land is non-random and is likely due to factors that have some correlation with the likelihood of rebellion, I conducted both a propensity score matching (PSM) and inverse probability weighting analysis. PSM works by calculating

Table 3.6: Average Treatment Effect at Different Land Value Thresholds

	(1) £1	(2) £2	(3) £5	(4) £10	(5) £20
ATE	0.0101*	0.0137**	0.00475	0.0149	0.0303**
	(1.82)	(2.13)	(0.62)	(1.39)	(1.97)
Observations	1683	1683	1683	1683	1683

t statistics in parentheses, * p<0.1 * p<0.05 * p<0.01
Note: ATE calculated based on Equation 1 using propensity score matching.

the likelihood of receiving treatment given the other covariates in the regression called the "propensity score," then matching each "treated" observation with one or more observations with the same propensity score. This allows us to obtain the Average Treatment Effect (ATE), or the expected change in the outcome value based solely on the treatment itself. In this case, I have set thresholds at £1, £2, £5, £10, £20, with any value over the threshold as "treated." PSM will match observations based on how likely each parish would be to have more monastic land than the threshold, based on the parish's other features. Ideally, doing so will isolate the effect of certain amounts of monastic land independent of all other observable features of the parish.

The results of the PSM analysis show different levels of significance at different thresholds of monastic landownership, but all coefficients on the "Land Treatment" variable are positive.

An even more effective method of isolating the effect of monastic land involves inverse probability weighting (IPW). By conducting regressions of only the outcome variable on the variable of interest and weighting by the inverse of a continuous propensity score, we can achieve a similar effect to PSM specification while allowing for a continuous "treatment" variable. By weighting each observation by the inverse probability of the parish having its observed quantity of monastic land, we boost the influence of observations that "shouldn't" have that much monastic land given their other observable features, statistically imitating the conditions of randomized treatment assignment and further isolating the variable of interest. The results of this analysis are similar to those presented above, and are consistent

Table 3.7: Inverse-Probability-Weighted Logit and Survival Models

	Dependent variable:	
	Primary Muster Logit	Risk of Primary Muster Cox PH
	(1)	(2)
ln(Land Owned)	0.155***	0.154**
	(0.058)	(0.057)
Population	*Y*	*Y*
Geographic Controls	*Y*	*Y*
Observations	1,033	989
R^2		0.008
Max. Possible R^2		0.353
Log Likelihood	-134.774	-211.331

* p<0.1 * p<0.05 * p<0.01

Note: coefficients calculated based on Equation 1 using inverse probability weighted logistic and Cox Proportional Hazards regressions.

whether the model is a simple logistic regression or a Cox Proportional Hazard model like the one specified above.

Finally, in order to try to pry apart the effect of monastic land that may have provided employment from the effect of monastic land containing monastic tenants, I have conducted a regression that splits the land at the "site" of the monastery (recorded as such in the *Valor* from land farther afield. Monastic site land was far more likely to be demesne i.e. land that was not rented out to tenants but was farmed directly by wage-earning agricultural laborers, while land not directly connected to the site of the monastery drew a far greater share of its revenue from tenants. As shown in Table 3.8, a greater amount of off-site land in a parish is a very strong predictor of revolt. Interestingly, a greater value of monastic site land predicts a *lower* likelihood of revolt, potentially indicating a lack of sympathy with monasteries that dominated their local parishes using large numbers of hired laborers. More research will be needed to identify the causal channels more cleanly, but these results provide a strong indication that monastic tenants themselves are a key predictor of revolt.

Table 3.8: Primary Musters - Site vs Offsite Land

	Dependent variable:			
	Primary Muster			
	(1)	(2)	(3)	(4)
ln(Monastic Site Land)	−0.127	−0.360**	−0.376**	−0.439*
	(0.130)	(0.158)	(0.172)	(0.251)
ln(Offsite Land)	0.209***	0.192***	0.143**	0.134*
	(0.063)	(0.066)	(0.068)	(0.070)
ln(Tithe)		−0.071	−0.084	−0.077
		(0.065)	(0.067)	(0.068)
ln(Alms)		0.383**	0.406**	0.393*
		(0.158)	(0.179)	(0.210)
ln(Net Income)		−0.019	−0.054	−0.133
		(0.097)	(0.111)	(0.138)
Friary		0.946	0.446	0.334
		(0.647)	(0.721)	(0.737)
ln(Lay Subsidy)			0.101	0.073
			(0.193)	(0.215)
Lay Subsidy Change			−1.580	−1.903
			(1.166)	(1.352)
ln(Population)			0.255***	0.240***
			(0.056)	(0.066)
Geographic Controls	*N*	*N*	*N*	*Y*
Observations	1,033	1,033	1,033	989
Log Likelihood	-121.892	-116.549	-105.361	-101.655

* p<.1, ** p<.05, ***p<.01

Note: monastic land is the value of monastic land in the parish in pounds, tithe is the value of tithes taken from the parish in pounds, alms are the amount of recorded alms distributed in the parish in pounds, net income is the calculated net income of any monastic house in the parish in pounds, friary is a dummy representing the presence of a friary based on a dataset from The National Archives, population is the sum of town populations in a parish drawn from a combination of datasets, one from Eltjo Buringh and one from Patrick Wallis and Charlie Udale, lay subsidy per capita and lay subsidy change are drawn from Heldring, Robinson, and Vollmer (2021).

3.7 Discussion

The results are broadly consistent across specifications and largely support H_2, which emphasizes the economic dislocation caused by the Dissolution as a primary reason for the Pilgrimage. The final regression in particular points toward the potential disruption of the link between the monasteries and their tenants—and its replacement by the distant Crown

or an unknown secular landlord—as the crucial factor predicting revolt at the local level.

There are several reasons for the connection between monastic land ownership and rebellion. First—and in my view most likely—fear of turnover in tenancy during an era of high inflation and rising entry fines could be a powerful motivator for revolt. Monasteries were perceived as reliable and stable landlords who changed the terms of tenancy both slowly and infrequently, allowing the kind of stability so beloved by peasant families.[95] Much of the commons also feared the disruption to longstanding tenancy contracts which would likely take place if lands owned by the monasteries were seized.[96] In an era of increasing inflation, any landlord not consistently raising entry fines would likely be looked on with some affection.[97] In addition, monasteries provided further economic stability by being reliable purchasers of their tenants' grain and produce. There were public fears that, if the monasteries were dissolved, coinage paid in rent would be redirected to the Crown and permanently leave the Northern economy rather than returning to the commons.[98]

Second, the ties between monasteries and their tenants went far deeper than simple economic relationships. In the North, the median distance of a land income source from a monastic house was 18 kilometers, relatively close but difficult to travel and return in a single day on foot.[99] This likely overstates the distance to the median monastic tenant, as the average parcel of land decreases in size as distance to the monastic house increases. Tenants likely had substantial face-to-face contact with their monastic landlords, forming personal bonds that went beyond economic necessity. Moreover, tenants often had very close familial ties with their local monasteries. At Westminster Abbey, those who lived on or near monastic estates were a key source of novices for the monastery. While recruitment from the towns of London and Westminster had grown during the early modern period, the sons of tenants and neighbors still formed an important share of new monks by the time of the

95. J. Clark, *The Dissolution of the Monasteries: A New History*, 113–4.
96. M. L. Bush, *The Pilgrimage of Grace: A Study of the Rebel Armies of October 1536*, 276.
97. Harrison, *The Pilgrimage of Grace in the Lake Counties, 1536-7*, 47.
98. Davies, "The Pilgrimage of Grace Reconsidered," 60.
99. See Chapter 2.

Dissolution.[100] In addition, many families had long histories of sending sons to become monks in specific monasteries, lending these connections the weight of family tradition.[101] Once they had become monks, particularly if they attained higher ranks, these sons often used monastic resources to help family members outside the convent, creating powerful familial-economic ties between lay and religious society.[102] Indeed, the recruitment of young men from their own neighbors and estates and the thick network of local social relationships this produced may be one of the main reasons for the improvement in relations between monasteries and their nearby towns in the fifteenth and early sixteenth century.[103]

Finally, the monastic land value variable may simply be picking up some rural population density that is not fully captured by my measure of population in each parish. This seems somewhat unlikely, as the correlation between monastic land value and population as captured by the existing dataset is 0.14, but it is possible that the correlation between monastic land and population outside of towns and villages is far higher.

The work done thus far has established the robust correlation between monastic land and rebellion, so the focus of future analyses will be the mechanism behind this correlation.

3.8 Conclusion

The foregoing analyses have established the robust correlation between monastic land and the presence of rebel gentlemen or musters, particularly primary musters where local people took up arms in rebellion for the first time. In addition, monastic land located away from the religious house and therefore more likely to contain monastic tenants is a far better predictor than monastic land more generally. Taken together, these two results provide the first econometric evidence in the long-running debate over the causes of the Pilgrimage and bolster the case of scholars like Michael Bush who point to the economic impact of the

100. Harvey, *Living and Dying in England 1100-1540: The Monastic Experience: The Monastic Experience*, 75–6.
101. J. Clark, *The Dissolution of the Monasteries: A New History*, 61.
102. Ibid., 64.
103. J. G. Clark, "Religion and politics in English monastic towns," 278–9.

Dissolution as the key driver of the revolt. An assault on traditional religion, when combined with the threat of serious economic upheaval, provided a powerful spur that led common people to take up arms and march south to confront the Crown.

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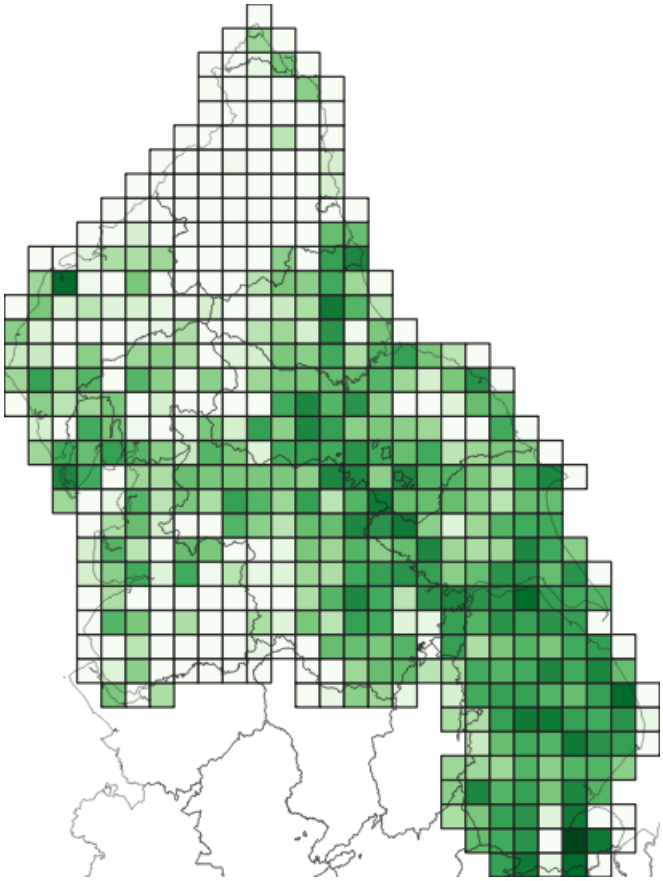
3.9 Paper 2 Appendix

3.9.1 Regressions on Grid Cells



Many parish boundaries changed somewhat in the three centuries between the Pilgrimage and the setting of their "historic boundaries" in 1851. To ensure that my results are robust to the changes in parish boundaries and to determine whether my results scale, I assigned the underlying *Valor* dataset to grid cells with sides of 2, 5, 10, and 20km using the same process as the parishes. I used the same variables as above, but switched to a Poisson regression as many cells contain more than one muster. These results are presented in Tables 3.9-3.11, bolstering the above results and showing that they scale to larger distances (i.e. monastic landownership provided some *motivation* for the rebellion rather than just being a convenient and symbolic place for rebels to muster).

Table 3.9: Grid Regression Results

	Dependent variable:			
	Rebel Muster			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.229***	0.144***	0.179***	0.225*
	(0.043)	(0.045)	(0.065)	(0.124)
ln(Tithe)	−0.062	−0.008	−0.028	−0.021
	(0.058)	(0.041)	(0.037)	(0.044)
ln(Alms)	0.153	0.189**	0.037	0.033
	(0.095)	(0.080)	(0.054)	(0.045)
ln(Net Income)	0.028	−0.058	0.050	0.038
	(0.058)	(0.049)	(0.037)	(0.040)
Friary	0.282	1.343***	1.042***	0.761***
	(0.601)	(0.410)	(0.346)	(0.275)
ln(Lay Subsidy)	0.123	0.220	0.404**	0.417**
	(0.143)	(0.148)	(0.174)	(0.184)
Lay Subsidy Change	−2.434***	−2.556***	−3.300***	−3.397***
	(0.898)	(0.968)	(1.168)	(1.276)
ln(Population)	0.289***	0.146***	0.038	0.095*
	(0.050)	(0.043)	(0.039)	(0.052)
mean_elev	−0.001	−0.0003	−0.001	−0.0002
	(0.002)	(0.002)	(0.002)	(0.003)
Geography	*Y*	*Y*	*Y*	*Y*
Observations	10,823	1,845	513	160
Log Likelihood	-320.626	-242.463	-178.069	-139.429

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3.10: Grid Regression Results

	Dependent variable:			
	Primary Muster			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.214***	0.139**	0.137*	0.170
	(0.062)	(0.063)	(0.082)	(0.145)
ln(Tithe)	−0.007	0.004	−0.036	0.033
	(0.078)	(0.060)	(0.053)	(0.063)
ln(Alms)	0.062	0.213*	0.050	−0.006
	(0.144)	(0.115)	(0.079)	(0.069)
ln(Net Income)	0.046	−0.074	0.037	−0.026
	(0.080)	(0.071)	(0.053)	(0.053)
Friary	−0.248	1.084*	1.030**	0.826**
	(0.919)	(0.592)	(0.474)	(0.397)
ln(Lay Subsidy)	−0.002	−0.026	0.320	0.553**
	(0.216)	(0.222)	(0.246)	(0.280)
Lay Subsidy Change	−3.003**	−2.773**	−4.234**	−6.904***
	(1.319)	(1.390)	(1.644)	(2.047)
ln(Population)	0.361***	0.194***	0.100*	0.160**
	(0.064)	(0.058)	(0.055)	(0.079)
mean_elev	0.002	0.002	0.001	0.001
	(0.003)	(0.003)	(0.003)	(0.004)
Geography	*Y*	*Y*	*Y*	*Y*
Observations	10,823	1,845	513	160
Log Likelihood	-176.267	-138.884	-113.330	-88.458

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3.11: Grid Regression Results

	Dependent variable:			
	Rebel Seats			
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.097***	0.076***	0.210***	0.313***
	(0.033)	(0.029)	(0.040)	(0.088)
ln(Tithe)	0.062	0.039	0.011	0.084**
	(0.041)	(0.027)	(0.024)	(0.035)
ln(Alms)	0.055	−0.008	0.050	0.032
	(0.109)	(0.063)	(0.043)	(0.036)
ln(Net Income)	0.004	0.014	−0.043	−0.025
	(0.067)	(0.036)	(0.028)	(0.026)
Friary	−14.124	−0.476	−0.149	−0.347
	(515.795)	(0.632)	(0.373)	(0.223)
ln(Lay Subsidy)	0.324***	0.440***	0.373***	0.314**
	(0.097)	(0.105)	(0.112)	(0.133)
Lay Subsidy Change	−2.282***	−3.641***	−4.040***	−4.298***
	(0.571)	(0.661)	(0.786)	(0.943)
ln(Population)	0.174***	0.077**	−0.005	0.035
	(0.053)	(0.037)	(0.029)	(0.031)
mean_elev	0.005***	0.004***	0.005***	0.007***
	(0.001)	(0.001)	(0.001)	(0.002)
Geography	*Y*	*Y*	*Y*	*Y*
Observations	10,823	1,845	513	160
Log Likelihood	-703.070	-471.239	-315.851	-194.158
Note:				*p<0.1; **p<0.05; ***p<0.01

3.9.2 Conley Standard Errors

The results are robust to potential spatial autocorrelation as far away as 200km (the distance from Doncaster to London). This is encouraging, and indicates that the relationships described above are unlikely to be due to spatial autocorrelation. These results are presented in Table 3.12.

Table 3.12: Conley Standard Errors

	Dependent variable:			
	20km	50km	100km	200km
	(1)	(2)	(3)	(4)
ln(Land Owned)	0.136*	0.136*	0.136*	0.136***
	(0.072)	(0.077)	(0.074)	(0.051)
ln(Tithe)	−0.060	−0.060	−0.060	−0.060*
	(0.055)	(0.041)	(0.042)	(0.033)
ln(Alms)	0.196	0.196	0.196	0.196*
	(0.227)	(0.212)	(0.159)	(0.111)
ln(Net Income)	−0.158	−0.158	−0.158	−0.158
	(0.177)	(0.172)	(0.137)	(0.100)
Friary	0.595	0.595	0.595	0.595*
	(0.665)	(0.658)	(0.460)	(0.339)
ln(Lay Subsidy)	0.105	0.105	0.105	0.105
	(0.255)	(0.222)	(0.168)	(0.128)
Lay Subsidy Change	−2.108*	−2.108**	−2.108**	−2.108***
	(1.253)	(1.052)	(0.919)	(0.736)
ln(Population)	0.242***	0.242***	0.242***	0.242***
	(0.058)	(0.054)	(0.054)	(0.036)
mean_elev	0.005	0.005*	0.005**	0.005***
	(0.004)	(0.003)	(0.002)	(0.002)
Population	*Y*	*Y*	*Y*	*Y*
Geographic Controls	*Y*	*Y*	*Y*	*Y*
Note:				*p<0.1; **p<0.05; ***p<0.01

3.9.3 Kelly Spatial Noise Test

Share of results of regressions on randomly-generated, spatially-autocorrelated primary muster patterns with p-values lower than main regression:

- Land: 13.6%
- Tithe: 29.8%
- Alms: 37.9%

- Friary: 68.8%
- Lay Subsidy: 68.5%

This result is less encouraging, potentially pointing to spatial autocorrelation patterns not captured by Conley standard errors as a driver of some results.

Chapter 4

Gaining Ground: How Monastic Land Buyers Secured Generational Wealth in Devon

4.1 Introduction

As one of the watershed events of the English Reformation, the 1536 Dissolution of the Monasteries saw the seizure of roughly half of all Church land in England in a mere four years and its resale into secular, private hands in the few decades that followed. Some scholars see the green shoots of the modern capitalist economy rising from the ashes of England's monasteries. With a huge quantity of ex-monastic lands providing a jolt to jump-start the land market, the commercialization of agriculture could begin in earnest. The reallocation of productive assets from religious hands to those of theoretically secular profit-maximizing landlords allowed the development of new farming techniques, greater agricultural productivity, and ultimately, the development of a capitalist agricultural system that would go on to feed the workers of the Industrial Revolution.

Another school of thought sees the Dissolution in class terms, with the Crown shuttering

institutions that employed half of England's clergy and subordinating the other half to the state, their newly-vacated lands allowing a more mercantile gentry class to seize greater political power. This revolution in rural class relations allowed the gentry to dominate the peasantry and direct the resources of the state toward their more capitalist-minded ends. Again, the coda of this story runs through agrarian to industrial capitalism, through the unique energy and attitude of the gentry class rather than through commercialization.

A final view, common among older economic historians and historians of monasticism itself, shows the Dissolution as a far grubbier affair; an opportunistic King and grasping councilors taking advantage of religious ferment to seize one of the country's greatest stores of wealth by destroying a centuries-old system of religious devotion. These historians are generally agnostic on any links between the Dissolution and the rise of capitalism, preferring to emphasize the role of opportunism in both the Royal government and in the local elites who rapidly snatched up the lands of monasteries their families had lived near for generations.

The county of Devon provides the perfect opportunity to test these views of the Dissolution. Using the unparalleled wealth of sources compiled by generations of historians, genealogists, and archivists, I have created a new dataset that will allow me to track the fortunes of monastic land purchasers and their descendants, as well as examine any structural economic change brought about by the Dissolution.

4.1.1 The Dissolution

The Dissolution of the English Monasteries was the largest single transfer of property in English history since the Norman Conquest in 1066. Between one sixth and one twentieth of all land in England was taken into Royal hands within the five years following 1536, then quickly sold in the succeeding decades.[1]

The monasteries of England were suppressed rapidly, with those with a net taxable income of below £200—around four hundred of England's eight hundred religious houses—dissolved

1. Woodward, *The dissolution of the monasteries*, 4.

by an act of Parliament in 1536.[2] Friaries, as mendicant orders, were initially exempted, and roughly 40% of smaller houses obtained Royal permission to continue operations temporarily, but they and the larger monasteries quickly succumbed to Royal pressure in the half-decade that followed.[3] The monks were pensioned off, the religious houses were pulled down or exposed to the elements by stripping the lead that bound their roofs together, and the land was transferred to the care of the newly-created Court of Augmentations. Originally intended to form part of the Crown's permanent estates, ex-monastic lands were rapidly sold off due to the fiscal pressures of war with Scotland and France or, on occasion, granted to court favorites.[4] Half of these lands had been sold by 1547 and three quarters were in private hands by 1558, representing a large and rapid net transfer of productive assets from religious to secular owners, with the Crown gaining a much-needed cash windfall during a budgetary crunch.[5] Taking a moderate estimate of 10% for the share of English farmland owned by the monasteries, the sale of half of this land by 1547 represents 0.5% of English farmland sold per year, the same share of UK farmland sold in 2024 *in ex-monastic land alone*.[6] This sudden and temporary deepening of the early modern English land market, in which the share of farmland sold briefly exceeded twenty-first century levels, forms the background for this study.

4.1.2 Research Questions

The possibilities opened up to the enterprising rich who purchased monastic land present a unique opportunity to answer two important questions. First, what did monastic land purchasers and their families gain through their purchase? Did they set their families up for centuries of higher wealth and status? This can give us some insight into the probable effects

2. Ibid., 59.
3. Ibid., 67–8, 107.
4. Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850*, 168.
5. Philip Edwards, *The making of the modern English state, 1460-1660* (Basingstoke : Palgrave, 2001), 164.
6. Savills UK, *Spotlight: The Farmland Market*, January 2025.

of other sudden bursts of economic opportunity or transfers of wealth. Second, what were the long-term economic effects of such a sudden deepening of the land market? Did it create durable changes in economic structure through commercialization or the empowerment of a more mercantile class of elites, or was this merely a reshuffle at the top of the wealth hierarchy without any broader structural changes? Deeper factor markets are often seen as a crucial element in the development of industrial capitalism, and the examination of the Dissolution can shed some light on their role in the pre-industrial period.[7]

4.1.3 The Land Market

Before we begin to investigate these questions, it's important to get a sense of the market these new lands were entering. The twenty-first century sale volume that briefly burst into the sixteenth-century through the cracks opened by the Dissolution hit a much more static and shallow land market that contained a number of serious frictions. Chief among these frictions was entail, a feature of English law which saw the current owners of estates as trustees for their heirs and prevented the piecemeal sale of lands contained in great estates.[8] This requirement, applied to between one- and two-thirds of all land in England, led to a serious thinning in the center of the land market, in which small parcels not covered by entail frequently went on the market, occasionally joined by the large estate of a formerly-wealthy family, but medium-size parcels were rarely available for purchase.[9] Another important friction which restricted the power of landowners to dispose of their property as they saw fit was copyhold. Named for the copy of the rental agreement recorded in manorial court rolls, copyhold was an unusually secure form of peasant tenure consisting of a fixed rent for the life of the tenant and often for their descendants.[10] Copyhold restricted landowners' ability to

7. Polanyi, *The great transformation*, 69.

8. Andrew R Buck, "Property, aristocracy and the reform of the land law in early nineteenth century England," *The Journal of Legal History* 16, no. 1 (1995): 69.

9. Avner Offer, "Farm tenure and land values in England, c. 1750-1950," *Economic History Review*, 1991, 9–10.

10. Mark Bailey, "The transformation of customary tenures in southern England, c. 1350 to c. 1500," *Agricultural History Review* 62, no. 2 (2014): 213.

sell their land, raise rents in an era of inflation and rising land values, or switch from rental to enclosure and direct farming with wage labor.[11] While this system seems on the whole to have benefited tenants at the expense of their landlords, its inflexibility and the practice of levying "entry fines"—lump sum payments demanded by the landlord upon the transfer of tenancy to the heir of the copyholder—meant that tenants themselves occasionally requested the switch to leasehold.[12] Taken together, these rigidities created a relatively shallow land market where the transfer of ownership was difficult and made the shock of post-Dissolution land sales all the greater.

One indication of the level of pent-up demand created by these land market frictions is the fact that, despite the enormous flood of land entering the English market after the Dissolution, parcels of ex-monastic land were consistently sold at or even above "twenty years' purchase," i.e. twenty times its rental value, the long-standing traditional price of land in the sixteenth century.[13] These lands temporarily filled the middle rungs of the land market, with most sales being either a single manor or a pair of manors, valued at under £20 total.[14]

The recipients of this land were a mixed bunch, from aristocrats adding to already-sizable estates to landless commoners who had become court favorites. By far the largest group of purchasers, however, was the gentry. As the group just below the great aristocratic families, the gentry were land-hungry but well-heeled and well-connected enough to take full advantage of the flood of new lands.[15] These lands overwhelmingly augmented existing estates rather than forming the foundations for new ones.[16] Some scholars even argue that, in percentage terms, *all* of the net land transfers during the Tudor and Stuart period went

11. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," 2105–2106.
12. Bailey, "The transformation of customary tenures in southern England, c. 1350 to c. 1500," 222.
13. Joyce Youings, *Devon Monastic Lands: Calendar of Particulars for Grants 1536-1558* [in eng], NED - New edition, vol. 1, Devon and Cornwall Record Society. New series (United Kingdom: Boydell & Brewer, 1955), xviii.
14. J. A. Youings, "The terms of the disposal of the Devon monastic lands, 1536-58," 31.
15. Tawney, "The Rise of the Gentry, 1558-1640," 16–17.
16. J. Youings, *Devon Monastic Lands: Calendar of Particulars for Grants 1536-1558*, xxviii.

to the gentry.[17] The gains in landownership made by the rising gentry class form the core of one key strand of literature on the Dissolution.

4.2 Literature Review

4.2.1 The Dissolution, the Gentry, and Agriculture

Historians writing on rural early modern England have drawn strong connections between the land transfer initiated by the Dissolution of the monasteries, the rise of the gentry as a powerful middling landlord class, and the "Agricultural Revolution" which took place in England in the three centuries leading up to the Industrial Revolution.[18] Many such scholars, writing in the footsteps of R.H. Tawney, have long seen the Dissolution as a key factor in the "Rise of the Gentry," the ambitious, mercantile, and proto-capitalistic class just beneath the great magnates. On this account, the "settlement of monastic estates into the hands of the most progressive element of rural society" then provided this rising class with the economic heft and political weight to remake English society in their improving and rationalizing image.[19] Later scholars examining the Dissolution have disputed the role of the Dissolution as a prime mover in the rise of the gentry, seeing the transfer of monastic lands into gentry hands as more of an accelerant than an ultimate cause of their growing power.[20] Gentry gains from the Dissolution have also been identified as a key factor in the shift from a balance between Crown, Church, and great magnates to a less-balanced political system that saw a Crown-gentry alliance face off against a now-outmatched peerage.[21] In exchange for their assistance pushing Royal power down to the parish level through their role as JPs and administrators of poor relief, the Crown allowed the gentry to reduce the security of peasant

17. Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850*, 168; and W G Hoskins, *The age of plunder : King Henry's England, 1500-1547*, 147.
18. Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850*, 6–8.
19. Tawney, "The Rise of the Gentry, 1558-1640," 26.
20. Woodward, *The dissolution of the monasteries*, 163.
21. Lachmann, *From manor to market : structural change in England, 1536-1640*, 23.

tenancies, enclose land, and create a market for the hire of landless labor.[22] Average farm size grew over the course of the sixteenth century, driven in part by gentry landowners adding monastic manors to their growing estates.[23] The process of farm engrossment, accelerated by larger landowners' greater access to capital, caused the gradual disappearance of yeoman farmers and their conversion to landless laborers.[24] I will refer to this broad outlook as the "gentry power thesis," which sees the growing economic weight of a uniquely capitalistic and improving class as a key driver toward greater agricultural productivity and the Dissolution as an inflection point in that process.

The most recent work in this tradition, and that upon which the present work touches most directly, is Heldring, Robinson, and Vollmer's *Long-Run Impact of the Dissolution of the English Monasteries*. They put forward a subtly different path from Dissolution to gentry power: monastic land had a far lower rate of copyhold tenure and was not covered by entail, enabling it to be more freely bought and sold. Without both of these frictions, monastic land enabled owners to reap the full benefit of investments in productivity and could settle into the more productive hands of the improving gentry class. In the authors' view, more "modern" landownership results in deeper markets for both land and labor, creating greater allocative efficiency, agricultural productivity and innovation, and ultimately industrialization.[25] A recent study on the post-Revolutionary dissolution of the French monasteries corroborates this view, finding that greater monastic land redistribution was associated with greater mechanization and use of hired labor, leading to an increase in agricultural productivity.[26] These results are corroborated by a broader study of the redistribution of Church lands in France, which finds that post-Revolution land reallocation led to a concentration in landownership,

22. Ibid., 101, 148.
23. Jane Whittle, *The Development of Agrarian Capitalism: Land and Labour in Norfolk 1440-1580* (Oxford University Press, May 2000), 108.
24. Robert C. Allen, *Enclosure and the Yeoman: The Agricultural Development of the South Midlands 1450-1850*, 102–4.
25. Heldring, Robinson, and Vollmer, "The Long-Run Impact of the Dissolution of the English Monasteries," 1.
26. Arnaud Deseau, "Land Reform and Productivity: Evidence from the Dissolution of the French Monasteries," *UCL-LIDAM Discussion Paper*, 2023, 4, 22.

leading to increased investment and greater productivity. This study also found, however, that while areas with large amounts of Church land got a "head start" in developing a modern land market, other areas gradually converged as their own land markets deepened over the course of the nineteenth century.[27] The mechanism linking greater concentration of land and greater economic development is outlined by Galor and Moav: when productivity is primarily driven by capital accumulation, concentrated landownership tends to facilitate investment and therefore growth. During the transition to industrial capitalism, however, innovation takes the driver's seat, human capital grows in importance, and inequality begins to throw sand in the gears of economic development.[28] Other studies of secularization have found similar results, with Cantoni, Dittmar, and Yuchtman finding that German states that converted to Protestantism, dissolved their monasteries, and asserted secular control over the Church caused a massive reallocation of both physical and human capital into more productive secular uses.[29] While similar to the gentry power thesis, the school of thought outlined above is far more focused on the release of resources previously sequestered in the "dead hand" of religious institutions and encumbered by archaic legal restrictions into private hands in the free market. I will refer to this view as the "commercialization thesis."

Both the commercialization and gentry power theses draw a causal arrow between the Dissolution and greater agricultural productivity—and often draw another arrow straight to industrialization. There has been a recent and more muted counterpunch to both of these views however, relying on an older historical literature to dispute the links between Dissolution, gentry, and productivity growth. Writing in 2020, Eric Jones disputes the idea that ex-monastic land was less legally encumbered than other real estate, pointing toward the profusion of litigation launched by its purchasers against their own tenants and

27. Theresa Finley, Raphaël Franck, and Noel D Johnson, "The effects of land redistribution: Evidence from the French Revolution," *The Journal of Law and Economics* 64, no. 2 (2021): 40.

28. Oded Galor and Omer Moav, "From physical to human capital accumulation: Inequality and the process of development," *The review of economic studies* 71, no. 4 (2004): 1021.

29. Cantoni, Dittmar, and Yuchtman, "Religious Competition and Reallocation: the Political Economy of Secularization in the Protestant Reformation," 2065, 2072, 2076.

neighbors.[30] He also challenges the idea that land was generally purchased for economic reasons, pointing to the gains in social status, public esteem, and private amenity as key motivations for monastic land purchase.[31] This view is in keeping with one strand of an older debate on the price of farmland which argues that land was a "positional asset," providing social status, political power, and respectability above and beyond its economic value.[32] Offer estimates that these amenities made up approximately one quarter of the value of land in eighteenth century England,[33] though in fairness Allen puts this premium down to the riskiness of mortgages.[34] Scholars of the English gentry also dispute the clean link between gentry control and productivity, pointing toward the extravagant expense of large country houses, paintings and expensive tchotchkes to fill those houses, and the direct conversion of productive agricultural land into parks and game preserves.[35] In his study of the Dissolution in the West Country, Bettey asserts that "fine country houses and elegant parklands" were particularly common in this region, both features that would act as a drag on agricultural productivity.[36] Mingay even points to old landed families and small tenant farmers as the key drivers of agricultural productivity,[37] Allen sets the locus of innovation firmly in the yeoman class,[38] and Overton more conservatively simply denies *any* firm link between landlord power, tenure systems, or farm size and agricultural productivity.[39]

A rhyming view comes from the literature on land reform, which generally finds minimal productivity increases when its gains go mostly to the already-wealthy. In a 2002 review of twentieth century episodes of land reform, Griffin et al. find that the keys to successful

30. Eric L Jones, *Barriers to Growth: English Economic Development from the Norman Conquest to Industrialisation* (Palgrave Macmillan, 2020), 21.
31. Ibid., 23–4.
32. Offer, "Farm tenure and land values in England, c. 1750-1950," 1.
33. Ibid., 2.
34. Robert C Allen, "The price of freehold land and the interest rate in the seventeenth and eighteenth centuries," *Economic History Review*, 1988, 34–5.
35. Mingay, *The Gentry: The rise and fall of a ruling class*, 148–53.
36. Bettey, *Suppression of the Monasteries in the West Country*, 146.
37. Mingay, *The Gentry: The rise and fall of a ruling class*, 57.
38. Robert C. Allen, *Enclosure and the Yeoman: The Agricultural Development of the South Midlands 1450-1850*, 18.
39. Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850*, 205.

productivity- and welfare-enhancing land reform are a large redistribution of land, a low ceiling on parcel size, subsidies for poor purchasers, and solid enforcement to prevent fraud and straw purchases by large landlords.[40] The sale of ex-monastic land certainly contained the first element, but made no attempt to implement the other three. The authors also identify "urban bias" and "landlord bias" (i.e. land reform that serves the needs of cities and benefits landlords rather than the rural poor) as factors that tend to negate any potential benefit of reform.[41] Again, post-Dissolution sales had both of these factors in spades, militating against any structural "modernization" effect of the Dissolution. In examining the aftermath of the Mexican Revolution, Melissa Dell shows that restrictions on the use and sale of redistributed land and the rise of clientelistic politics hampered economic development in regions where more land was redistributed; both factors are again present in the post-Dissolution context.[42] Other authors, while recognizing the benefits of a deeper market in land, still point toward small owner-operated farms as more efficient food producers due to far lower labor-monitoring costs.[43] In *How Asia Works*, author Joe Studwell provides another reason that small owner-operated farms outcompete those of large landlords in per-acre productivity: acquiring new land and loaning money at interest will almost always be more lucrative than investing in productivity enhancements, and require no special skill or knowledge.[44] In England, studies of medieval peasant agriculture have corroborated this view, with small peasant farms outperforming the demesne land of lords largely due to lower labor discipline costs and greater flexibility.[45] In the early modern period, the process of

40. Keith Griffin, Azizur Rahman Khan, and Amy Ickowitz, "Poverty and the Distribution of Land," *Journal of Agrarian change* 2, no. 3 (2002): 308–9.

41. Ibid., 315–6.

42. Melissa Dell, "Path dependence in development: Evidence from the Mexican Revolution," *Harvard University, mimeograph*, 2012, 19–20.

43. Klaus Deininger and Gershon Feder, "Land institutions and land markets," *Handbook of agricultural economics* 1 (2001): 304–5.

44. Joe Studwell, *How Asia works: Success and failure in the world's most dynamic region* (Open Road+ Grove/Atlantic, 2018), 20.

45. Janken Myrdal and Alexandra Sapoznik, "Technology, labour, and productivity potential in peasant agriculture: England, c. 1000 to 1348," *Agricultural History Review* 65, no. 2 (2017): 210–11; and Alexandra Sapoznik, "The productivity of peasant agriculture: Oakington, Cambridgeshire, 1360–99," *The Economic History Review* 66, no. 2 (2013): 539–40, eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1468-0289.2011.00654.x.

farm engrossment by landlords likely increased labor productivity in agriculture as marginal workers were simply not hired, but did little to improve crop yields per acre.[46] With peasant movement constrained by the Poor Relief Act of 1662,[47] a study by Robert Allen finds that the new excess of landless laborers were largely released into idleness rather than into proto-industry or trade.[48] Taken together, this literature disputes the link between Dissolution and productivity and I will refer to it as the "null hypothesis" hereafter.

4.2.2 Long-Term Social Mobility

This paper also touches on a rich literature related to social mobility and inequality in the pre-industrial world. One view, most forcefully articulated by Gregory Clark and Neil Cummins, sees social mobility as remarkably low, even in periods of great economic and political upheaval.[49] Income and wealth inequality are quite high from the medieval period to the present, and are virtually immune to policy interventions.[50] The prevailing view in the field, however, is that the advent of industrialization *did* launch a new era of social mobility. In Norway, the transition to an industrial economy created a continual fall in income elasticity during the entire transition to a modern economy.[51] A recent paper from Italy seems to corroborate this view, examining the outcomes of Florentines in 1427 and their pseudo-descendants, identified by surname, in 2011. They find an elasticity of wealth of roughly 0.02 and an elasticity of income of roughly 0.04, a small but measurable transmission of status over nearly six hundred years of tumultuous political and economic history in the region.[52] When combined with other studies that find a relatively low rate of inter-

46. Overton, *Agricultural revolution in England : the transformation of the agrarian economy, 1500-1850*, 128, 205.
47. Ibid., 187.
48. Robert C. Allen, *Enclosure and the Yeoman: The Agricultural Development of the South Midlands 1450-1850*, 310–11.
49. Gregory Clark and Neil Cummins, "Surnames and social mobility in England, 1170–2012," 2014, 533.
50. Ibid., 529.
51. Jørgen Modalsli, "Intergenerational mobility in Norway, 1865–2011," *The Scandinavian Journal of Economics* 119, no. 1 (2017): 15.
52. Guglielmo Barone and Sauro Mocetti, "Intergenerational mobility in the very long run: Florence 1427–2011," *The Review of Economic Studies* 88, no. 4 (2021): 6.

generational wealth transmission in modern Italy, the authors estimate that pre-industrial intergenerational wealth elasticity was extraordinarily high, between 0.8 and 0.9.[53]

In keeping with research on the industrial transition, research on social mobility in the twentieth and twenty-first centuries tend to find much more fluidity than studies on the pre-industrial world, though with some stickiness remaining in the top and bottom deciles.[54] Chetty's seminal study of US social mobility finds widely varying rates of mobility between "commuter zones," all of which more closely resemble the mobility of the Industrial Revolution than that of the pre-industrial era.[55] Solon's review of the mobility literature in 2018 comes to a similar conclusion, both casting doubt on the simple generation-to-generation model favored by Clark and showing relatively high mobility in the modern era. Because this paper examines the pre-industrial era—as mentioned above, by 1830 Devon's woolen industry had reached its peak more than a century before and had been in continual decline since then—both strands of social mobility literature would suggest a high degree of persistence and the transmission of economic advantages through many generations.

However, studies that directly examine large wealth shocks throw a wrench in this supposition, finding little lasting impact on the socioeconomic status of future generations. Bleakley and Ferrie examine an 1832 land lottery in the US South that roughly doubled the wealth of the average recipient, leaving them richer by roughly the amount of the award even eighteen years later.[56] They find that, despite this enormous windfall, there were no detectable educational or socioeconomic impacts even on the recipients' own children.[57] Another study investigates the massive wealth shock that hit the US South after the Civil War: the total liquidation of all wealth in slaves. While families with more slaves were poorer relative to their non-slaveholding counterparts in 1870, they had nearly recovered by 1900

53. Barone and Mocetti, "Intergenerational mobility in the very long run: Florence 1427–2011," 21.

54. Raj Chetty et al., "Where is the land of opportunity? The geography of intergenerational mobility in the United States," *The quarterly journal of economics* 129, no. 4 (2014): 1555.

55. Ibid., 1592.

56. Hoyt Bleakley and Joseph P Ferrie, *Up from poverty? The 1832 Cherokee Land Lottery and the long-run distribution of wealth*, technical report (National Bureau of Economic Research, 2013), 20.

57. Hoyt Bleakley and Joseph Ferrie, "Shocking behavior: Random wealth in antebellum Georgia and human capital across generations," *The quarterly journal of economics* 131, no. 3 (2016): 1492–3.

and were indistinguishable by 1940.[58] The non-impact of such massive wealth shocks point toward other underlying factors as key drivers of wealth and status, but it is crucial to note that both of these events took place well into the industrial era in a country in which landownership was far less tightly tied to political power. In addition, these studies examine random wealth shocks rather than the conversion of one type of asset into another. We may therefore be cautiously optimistic about the prospect of tracing the long-term effects of post-Dissolution land sales through multiple generations.

4.3 Why Devon?

Before moving on to describing my data sources, I should explain why they all come from Devon. This is a case of "looking where the light is." Devon benefits from an extraordinary wealth of taxation and other data, largely compiled by the South West Heritage Trust, Devon and Cornwall Record Society, and Friends of Devon's Archives. While most other counties have some of the types of sources outlined above, none to my knowledge have nearly the same wealth of sources in forms so amenable to automated processing. However, Devon's unusual economic history may present some barriers to external validity.

Devon is a rather unique county in English economic history. Poor and sparsely populated until the thirteenth and fourteenth centuries, its constellation of towns and cities were mostly founded in the century and a half leading up to 1350.[59] Its economy was largely based on livestock, particularly the dairy and woollen industries, but this was leavened by acres of orchards and arable farming.[60] In the fifteenth and sixteenth centuries, this diverse agricultural economy produced such prosperity that Devon went from one of England's least to one of its most populous counties.[61] Cities like Exeter, Barnstaple, Plymouth, and Dartmouth waxed and waned with the Continental wool trade and serviced England's most impor-

58. Philipp Ager, Leah Boustan, and Katherine Eriksson, "The intergenerational effects of a large wealth shock: white southerners after the Civil War," *American Economic Review* 111, no. 11 (2021): 3768.
59. WG Hoskins, *Devon* (Phillimore / Co Ltd, 2015), 58.
60. Ibid., 93–4.
61. Ibid., 169.

tant offshore fisheries.[62] While Devon was at the epicenter of the English wool trade in the eighteenth century, the combined impact of the Napoleonic Wars and the mechanized cotton mills of Lancashire had largely strangled the industry by the mid-nineteenth century.[63] While the unique features of Devon's economy should put a note of caution into any strong and broad conclusions drawn from the results in this paper, its fundamental features are similar to other English counties in the pre-industrial era: the vast majority of wealth was drawn from agriculture and the predominant path to political power and economic stability was landownership.

4.4 Data

4.4.1 Core Data: The *Calendar of Particulars*

The purchasers of monastic lands were recorded by the Court of Augmentations, along with (usually) the type, area, and value of the lands, as well as advowsons[64] and tithe[65] rights being transferred, and the final sale price. These documents were collected by Joyce Youings and published together in *Devon Monastic Lands: Calendar of Particulars for Grants 1536-1558* in 1955. I have created a dataset from this source containing the names of purchasers, assets purchased, value, and, based on biographies available online or their presence in my taxation documents, a dummy variable indicating whether or not they were Devonians. While the names of purchasers are always recorded, the value of land purchased is often missing, so I have largely made use of the names without trying to distinguish between purchasers of estates of different sizes. The *Calendar* is the source of the list of recipient surnames that form the "treatment group" in the analysis that follows.

62. W. Hoskins, *Devon*, 60, 216.
63. Ibid., 128.
64. The right to nominate someone to a vacant benefice, often sold or used as a tool of political patronage.
65. A portion of agricultural production set aside for the maintenance of the Church, traditionally 10%. Many tithes had long since been "appropriated" by monasteries who took on the duty of staffing parish churches.

For some regression specifications, I have used the value of land purchased as a measure of "treatment intensity." Following common practice in the 16th century, I have set the value of each grant to twenty times its annual rental income.

4.4.2 Core Data: Taxation Records

Lay Subsidies

After a nearly two-century hiatus in national assessments of individual wealth,[66] the substance of the English population was recorded in the lay subsidy of 1524/5. This tax was assessed on annual income from land (if £1 or greater), value of movable goods (if £2 or greater), or yearly wage income (if £2 or greater).[67] In practice, this meant that the vast majority of the population was assessed on their goods, as being assessed on land would require an estate with a capital value of twenty times the family's wealth in goods. The subsidies of 1543-5 and 1581 have similar thresholds, with cutoffs of £1 on land, £1 on goods[68] and £1 on land, £3 on goods respectively.[69]

These sources present a number of problems, chief among them the fact that they conceal a great deal of wealth by design. Because the threshold for land, in capital value terms, was twenty times higher than that on goods, most of each household's true wealth is left unrecorded by the lay subsidies. However, the 1524 subsidy records a small number of households which were assessed on both land and goods, then taxed on the higher value. Based on these 26 entries, the average ratio between goods and land was 1.47. These entries were likely assessed twice because the goods and land values were similar, but they are the best indicator of the relationship between wealth in goods and land available to me. While I have used un-adjusted figures for the regressions in the main paper, I have conducted a robustness check, adjusting land values upwards by a factor of 1.47. The results are stronger

66. The last tax assessment containing individual valuations was conducted in 1332. In the intervening centuries, these valuations were used to assess tax at the town and parish level, but no individual wealth is recorded.

67. T.L. Stoate, ed., *Devon Lay Subsidies, 1524-1527* (Bernard D. Welchman, 2004), iv.

68. T.L. Stoate, ed., *Devon Lay Subsidy Rolls, 1543-1545* (Bernard D. Welchman, 2003), i.

69. T.L. Stoate, ed., *Devon Taxes, 1581-1660* (Bernard D. Welchman, 2003), i.

for 1581 but much the same for later years, and are presented in the Appendix.

Additionally, the 1581 subsidy is substantially different from the other two. There was a marked shift toward taxing land in this subsidy, likely driven by the higher goods taxation threshold. Nearly four times as many household heads are assessed on their land in 1581 as in 1524 and 1543. 1581 also saw the mysterious virtual disappearance of assessments on goods over £20. It is unlikely this was due to richer households being taxed on their land, as the number if household heads taxed on land is virtually identical for each tax bracket above £3. These two factors result in a far lower mean wealth levels than that recorded in 1524 and 1543. Finally, the 1581 subsidy records far fewer households than those of 1524 and 1543, even when restricted to parishes captured in all three. These issues make the 1581 assessment a weaker source, but as these taxation records are the best cross-sectional measures of wealth available, they will form the core of this study.

1674 Hearth Tax

The Hearth Tax was introduced by Charles II in 1662 to fill the fiscal gap left by the deal between King and Parliament that firmly limited the King's income. It was assessed with the belief that the number of hearths possessed by a given household was roughly proportional to that household's physical size, and therefore to its wealth, with each hearth warming two to three rooms.[70] I make the same assumption for much of the analysis that follows.

The lay subsidies and Hearth Tax returns were all digitized using the same machine learning process, shown in Figure 4.1 below. First, a page segmentation model was trained to pick out parish headings, columns, and extra text, then each column was split into lines. Each segmentation model was fine-tuned on ground truth data[71] generated for each tax assessment, but previous models were used as a starting point on subsequent assessments to accelerate training. Once lines were isolated, they were read by three different OCR programs which use different internal architectures, in the hope that the errors made by each would be different from the others. In the case of disagreement between OCR readers (around 2%

70. T.L. Stoate, ed., *Devon Hearth Tax 1674* (Bernard D. Welchman, 2003), iii.
71. Manually-created data known to be correct.

of lines), the line and the three readings were sent to Google's Gemini API[72] in order to referee between possible text strings. Finally, names, titles, valuations, and valuation types were extracted from the text strings using regular expressions. The result is a dataset of over 90,000 individual tax records spanning about 150 years.

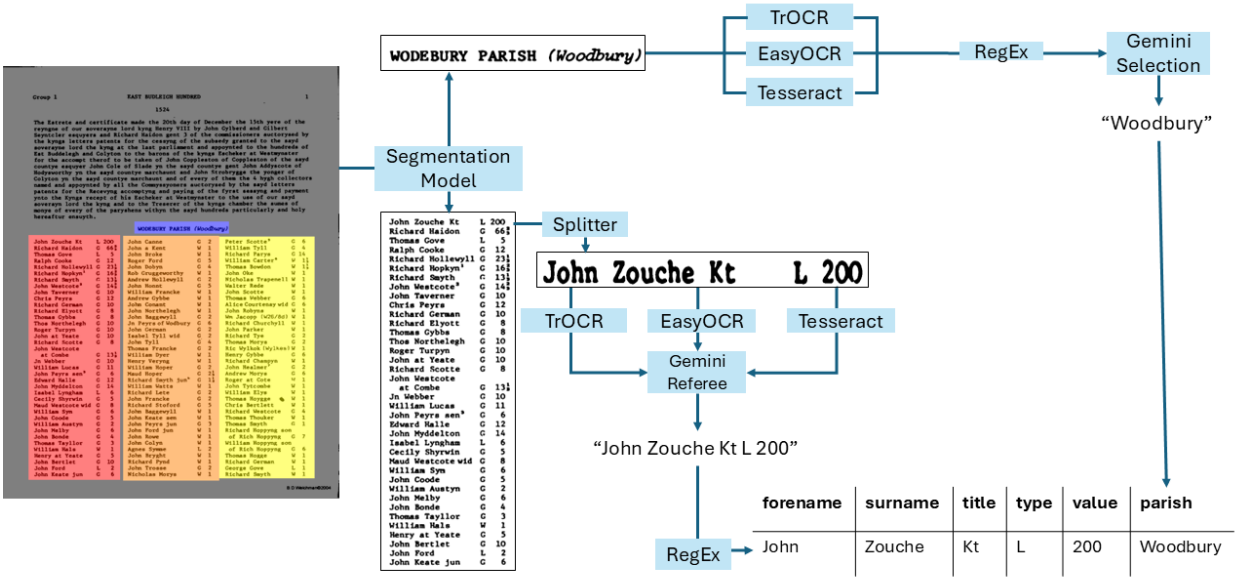


Figure 4.1: Lay Subsidy and Hearth Tax Digitizaiton Pipeline

Tithe Commutation Maps

Following the Dissolution of the Monasteries, tithes which had previously been collected by the monks as ecclesiastical landlords passed into the hands of their secular successors. In the three centuries that followed, it became increasingly absurd for secular landlords to collect one tenth of all crops, eggs, fish, and all sorts of other agricultural products produced on their land, so many but by no means all tithes in kind were commuted into monetary payments. In 1836, exactly three hundred years after the Dissolution began, Parliament passed an Act commuting the remainder of in-kind tithes into monetary payments called "corn rent." The corn rent was calculated based on the type of crop, area under cultivation, and the average

72. A large-language model with image-processing capabilities.

sale price of a given crop, which required a comprehensive survey of tithed land, its owners, and its uses in England. This data has been compiled by the Devon County Council and the Devon Heritage Centre and provided free to the public.

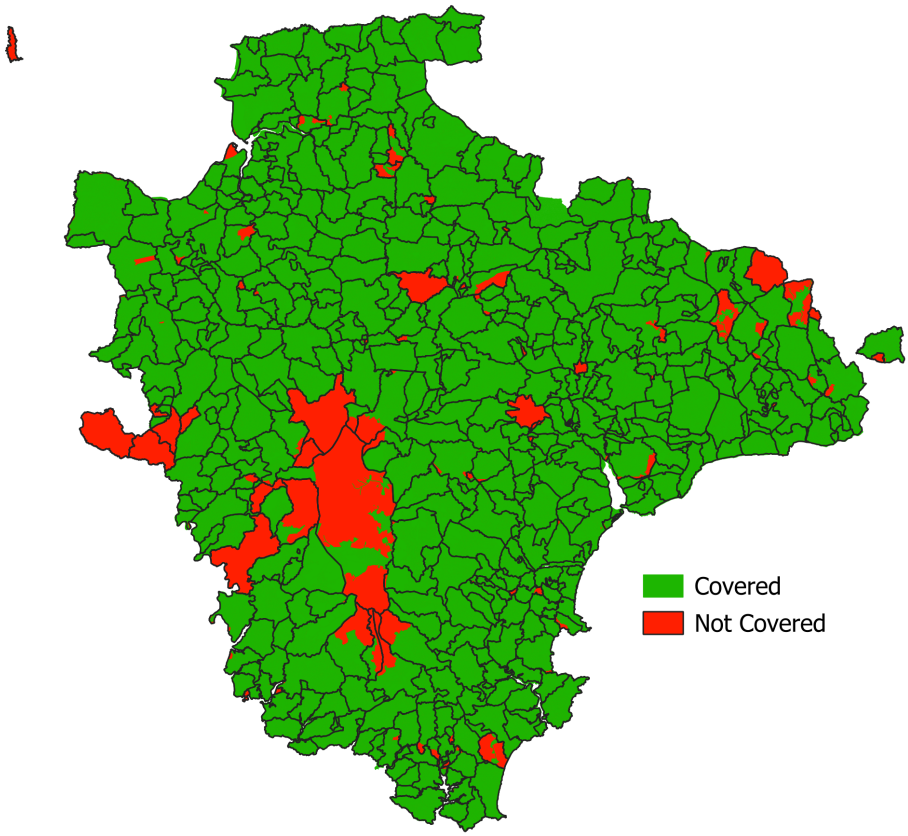


Figure 4.2: Tithe Commutation Map Coverage

Approximately 93% of Devon is covered by the tithe commutation maps, with the vast majority of unrecorded land lying on Dartmoor, only very sparsely since the late Neolithic. Note: the lower total area figure given in the summary statistics is due to the lack of a landowner listed on rivers, roads, common land, waste, and a few "disputed" parcels.

Table 4.1: Summary Statistics: Taxation Records

	1524, £	1543, £	1581, £	1674, Hearths	1830s-40s, Acres
Mean	6.09	8.46	4.34	2.16	103.49
Median	3.00	5.00	3.00	1.00	7.06
SD	12.81	13.19	3.93	2.18	443.41
Sum	91616	103855	39887	45800	1084869
Count	15047	12276	9201	21178	10483

Note: Values for 1524, 1543, and 1581 given in pounds, drawn from Devon Lay Subsidies compiled by T.L. Stoate. Values for 1674 given in hearths, drawn from Devon Hearth Tax compiled by T.L. Stoate. Values for 1830s-40s given in acres of land owned, drawn from Tithe Commutation Maps digitized by the South West Heritage Trust.

The *Valor Ecclesiasticus*

For figures on the distribution of monastic land, I drew on a survey of all Church land in England conducted in 1535, the year before the Dissolution began. Using the Public Record Office version typeset in the nineteenth century, I entered each item of expenditure and income for every monastery in Devon, then georeferenced all sources and destinations.[73] I then spatially joined these points to a shapefile of the ancient parishes of Devon (sourced from CAMPOP) to give each parish a monastic-land value, shown in Figure 4.3

4.4.3 Additional Data: Status-Loaded Name Lists

The remainder of the data used in this paper mostly takes the form of lists of names compiled by genealogists. I have selected "status-loaded" lists, i.e. lists in which the presence of an individual's name provides some indication of their social and economic status. These lists will provide some additional insight into the social and economic fortunes of families following the Dissolution.

Prerogative Court of Canterbury Wills

73. John Caley and John Hunter, eds., *Valor Ecclesiasticus temp. Henr. VIII: auctoritate regia institutus*, vol. I-V (Record Commission, 1810-1825).

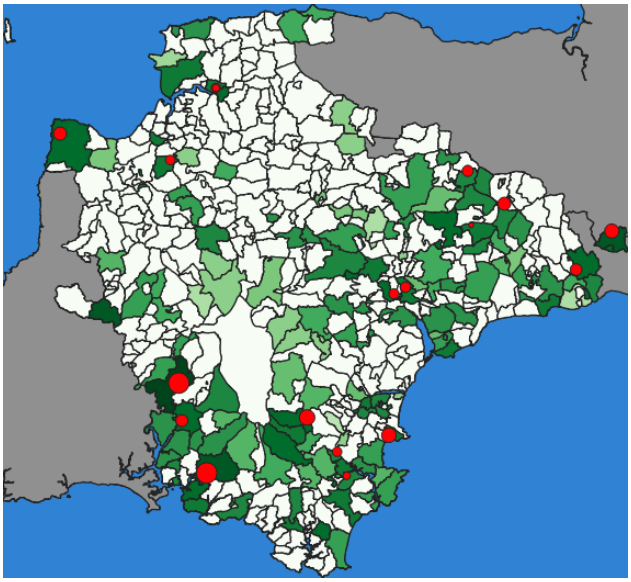


Figure 4.3: Monasteries and Their Land in Devon

While most of the local wills of Devon were destroyed by the bombing of Exeter in 1942, those of Devon's elite were preserved by a quirk of the English probate system. Testators with property valued at £5 located in multiple dioceses were required to register their wills at Canterbury rather than locally. As all of Devon was contained within the diocese of Exeter, presence on this list indicates a far higher degree of wealth and far more diverse landholdings than the average household head. A dataset of names and dates for these wills is provided by the National Archives through the UK Data Service, and I have selected only the names of testators registered within Devon for my analysis.

Freeholders' Lists

Yearly freeholders' lists record the names of every man who met the £10 landholding requirement to serve on a jury from 1711 to 1799. In 1730, eligibility was broadened to include tenants paying more than £20 in rent annually. Presence on these lists indicates that an individual has at least the status of a moderately prosperous yeoman farmer and is a full member of the local political community. This data provides a very broad and long-term view into the upper echelon of Devon society.

Other "Status-Loaded" Lists of Names

I have used a number of other lists of names provided on the GENUKI (Genealogy of the UK and Ireland) website that may indicate the status of their bearers. For lists that indicate higher status, I have a list of all names on monumental brass graves and tombs in Devon, all licensed victuallers (pub owners) in North Shebbear and Hartland from 1651 to 1858, and all Devonians with London bank accounts. A list of all Devonians filing for bankruptcy between 1800 and 1843 is a more mixed indicator (previously-rich enough to file for bankruptcy, currently failing in business). Finally, there are negative status indicators, like a list of all indictments for serious crimes at Devon Quarter Sessions from 1745 to 1782 and a full survey of the inhabitants of Devon's workhouses in 1861.

These lists of names provide a keyhole view into the prevalence of recipient and control surnames in widely varying parts of society and some of them are frequent enough to give us some idea of the dynamics of status and wealth over time.

4.5 Methodology

4.5.1 Surnames

Sources containing both surnames and measures of wealth and status provide a unique opportunity for the economic historian to trace family outcomes over the course of many generations. Passed down like most property during the period, directly from father to son, they allow us to examine the reverberating impact of economic shocks through family lines without resorting to full family reconstructions. However, English surnames present a serious problem to the computerized methods used in economic history, as their spellings could vary wildly even when verifiably referring to the same person. Traditional surname linking methods such as Jaro-Winkler edit distance (number of character-changes required to transform one name into another) or Soundex (a phonetic coding algorithm), while often effective on modern names, struggle mightily when applied to the distant past, with now-defunct forms like "-legh" (-leigh/-ly/-lie) throwing a wrench into both algorithms.

To solve this problem, I have processed all of the indexes of the lay subsidies, linking together any surnames that are treated as interchangeable. This process was conducted for each lay subsidy, then any overlapping groups were joined together, e.g. "Aclond" and "Aglond" are interchangeable in 1524 and "Aclond" and "Acland" are interchangeable in 1543, so all three names are treated as interchangeable. Because the lay subsidies take place in the first 50 years after the Dissolution and I would like to link surnames over the course of three centuries, I repeated the same process with *The Oxford Dictionary of Family Names in Britain and Ireland*, extracting all names of English, Celtic, French, or Norman origin[74] along with all of their variations listed in the dictionary. These surname-groups were then joined with those from the subsidy indexes to form my master surname groups.

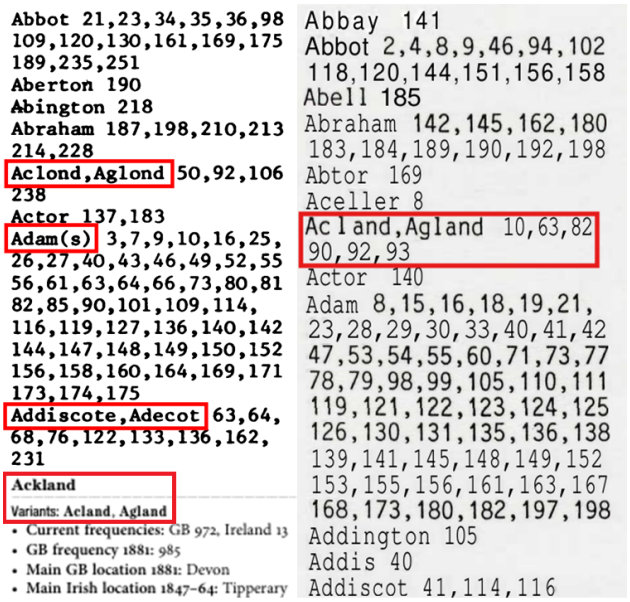


Figure 4.4: Interchangeable Surnames in 1524 Subsidy, 1543 Subsidy, and Dictionary

Each master surname group is assigned a unique ID, which will form the unit of analysis for most of the rest of the paper. When processing surnames from the documents, exact matches are assigned their surname-group's ID, names which match both the Soundex and Metaphone codes of one of the group's members are assigned that group's ID, and if both

74. This was done to prevent absurd chains like "Hinge" → "Hing" → "Ying" → "Yan" → "Gan" → "McGann" → "McGahan" → "McKaughan" and so on, connecting every single surname in the British Isles by way of inconsistently-Anglicized Chinese surnames.

of these failed, I used a neural network to classify surnames by group. I trained this cross-encoder neural network to recognize when two surnames were variations of each other using tens of thousands of pairs of names drawn from my master surname data. The network was 97% accurate when classifying out-of sample name pairs, so if a name was not linked to a surname-group by the network, I created a new surname-group with the singleton surname.

My hope is that this method is more appropriate to the variable spelling of the early modern era than either edit-distance string comparisons or phonetic algorithms like Soundex, both of which would miss the "Addiscote"-"Adecot" connection in Figure 4.4. The ID numbers assigned to each surname are used in place of the surnames themselves in all the analysis that follows.

4.5.2 Treatment and Control Groups

Once surname IDs are assigned, one key problem remains: we have our "treatment" group already, but monastic land purchasers were systematically different from the average taxpayer. They were better connected, wealthier, and tended to have at least some local knowledge about the properties they were purchasing.[75] While the first is difficult if not impossible to measure, the latter two can be used to construct a control group. The results of a logistic regression show that the primary variables predicting the purchase of monastic land are the wealth of the richest surname bearer in 1524, the average wealth (also in 1524) of parishes in which surname-group members lived, the amount of monastic land in parishes in which surname-group members lived, and the prevalence of each surname in the Prerogative Court of Canterbury Wills before the start of the Dissolution in 1536. I use these variables, in conjunction with the prevalence and total wealth of each surname group in 1524 (thus ensuring the same average wealth as well) to select a unique nearest-neighbor match for each "treated" surname ID. I have only selected the closest match for each surname for analysis with my status-loaded name lists, as this analysis is more impressionistic. Due to the

75. J. Youings, *Devon Monastic Lands: Calendar of Particulars for Grants 1536-1558*, xx–xv.

Table 4.2: Predictors of Monastic Land Purchase

Group	Treatment	Control
ln(Total Value 1524)	3.866	3.835
ln(Count 1524)	2.489	2.519
ln(Surname Maximum Wealth 1524)	2.846	2.810
Share of PCC Wills Pre-1536	0.001	0.001
ln(Parish Average Value 1524)	1.789	1.779
ln(Parish Monastic Land Value)	7.224	7.330

Note: total value, count, surname maximum wealth, and parish average value drawn from 1524 Lay Subsidy compiled by T. L. Stoate, Prerogative Court of Canterbury Wills data from The National Archives, monastic land value drawn from the Public Record Office edition of the *Valor Ecclesiasticus*.

very small treatment group, I have selected four unique matches for use in the matching regressions.

4.5.3 Methodological Issues With Surname Groups

In this paper, I will be using what the literature refers to as a "grouped estimator," taking figures derived from an entire surname group rather than using individual data. This method is similar to that used by Clark and Cummins, but is not without criticism. In proposing their alternative measure of intergenerational mobility based on the informational content of surnames (ICS), Güell et al. point out that estimates based on surname groups will tend to overestimate the degree of intergenerational persistence because the surname itself contains information on ethnicity, religion, and a host of other status-relevant traits.[76] In a more recent paper, Santavirta and Stuhler sound many notes of caution about the use of grouped estimators to estimate social mobility. The grouped estimator is systematically biased upward with surname frequency and sample size, as the status of common surnames

76. Maia Güell, José V Rodríguez Mora, and Christopher I Telmer, "The informational content of surnames, the evolution of intergenerational mobility, and assortative mating," *The Review of Economic Studies* 82, no. 2 (2015): 696–7.

tends to move much more slowly than that of rare ones.[77] In addition, the grouped estimator tends to be larger when parents and children are captured in the same sample and lower when they are not, as unrelated surname bearers and distant relatives make up a larger share of the total.[78] Finally, the grouping estimator can produce overestimates of persistence under conditions of regional inequality and low geographic mobility, as surnames absorb the effect of the region in which they are most commonly found.[79]

While these critiques make any effort to back out point estimates of mobility from my results inadvisable, I believe my methodology neatly sidesteps most of these issues. First, I have restricted the surnames under study to those of English, French, Welsh, Cornish, and Norman, minimizing the potential ethnic information contained in surnames. Second and far more importantly, all analysis compares only "treated" surnames to their closest matches on the dimensions specified above, particularly frequency. Thus the degree of bias in the rate of persistence due to surname frequency and sample size should be near-identical between the two groups. Both sets of surnames are subject to the same temporal issues, and a battery of geographic controls will help keep the effects of regional inequalities from leaking into the regression coefficients. By selecting a set of control surname-groups suffering from near-identical bias and only relying on comparisons between treatment and control, I hope to avoid most of the pitfalls inherent in the surname and social mobility literature.

4.6 Three Centuries of Family Wealth

To get a broad sense of the paths up and down the wealth and status hierarchy traveled by monastic land purchasers and their closest non-purchasing counterparts, we'll start with Figure 4.5, which shows the share of Prerogative Court of Canterbury wills made up by the treatment and control groups. As stated above, presence on this list indicates that a

77. Torsten Santavirta and Jan Stuhler, "Name-based estimators of intergenerational mobility," *The Economic Journal* 134, no. 663 (2024): 4.
78. Ibid., 12.
79. Ibid., 28–9.

testator owned a significant amount of property spread widely across the countryside. While the period before the Dissolution contains far fewer entries, the trend immediately following the period of intense post-Dissolution sales is clear: a doubling in the representation of the treated group and a steady or falling fraction of the control group. The advantage gained by the treated group quickly fell off but the descendants of monastic land purchasers continued to enjoy higher status than descendants of equally-wealthy families without monastic land purchases well into the nineteenth century. This effect is consistent across different surname-grouping methods, the results of which are presented in the Appendix.

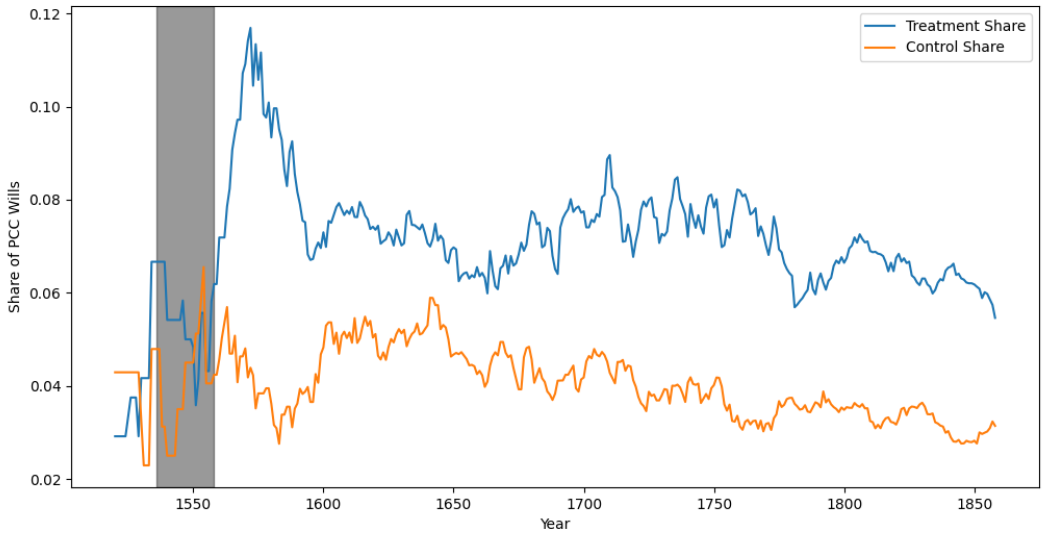


Figure 4.5: Treatment and Control Share of PCC Wills

Moving on to a slightly less selective set of lists, Figure 4.6 shows the share of treated and control surname groups among those owning enough property to qualify for jury duty in Devon during the eighteenth century. Hovering around a ratio of 3:2 or 4:3, we see a similar over-representation as that seen among the Prerogative Court of Canterbury wills during the same period. There is also little sign of convergence, indicating that the status gains from the Dissolution were durable even into the eighteenth century.

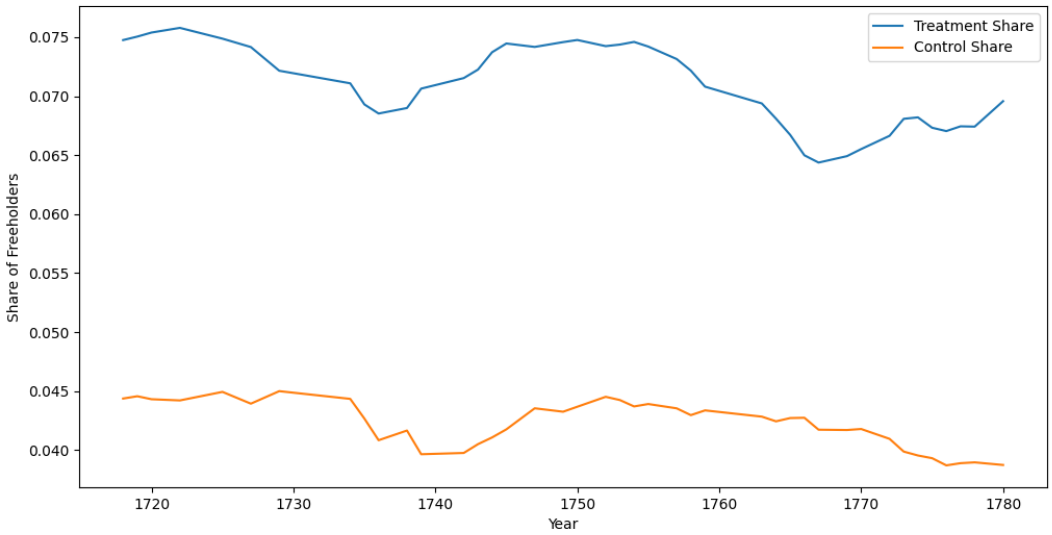


Figure 4.6: Treatment and Control Share of Freeholders' Lists

This status advantage can also be seen outside the rural landowning class, as a set of victuallers' lists from North Shebbear and Hartland, in Devon's northwest corner, show. Figure 4.7 presents the highest-frequency portion of this data, and shows a large but gradually-declining over-representation among pub owners in the area. Again, while the data is noisier than both the wills and freeholders' lists, the ratio ranges between around 2:1 and 4:3 during the mid-eighteenth century.

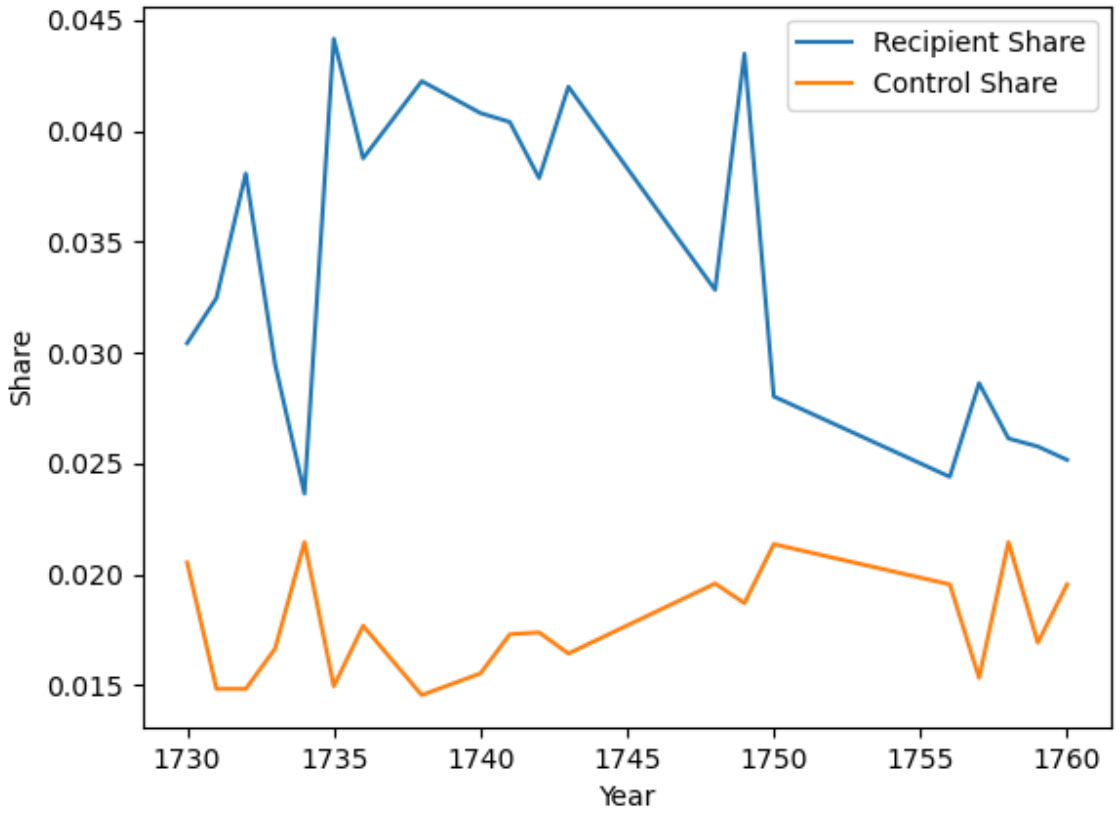


Figure 4.7: Share of Recipient vs Control Surnames in Victuallers Lists

The consistency with which the surname-groups of monastic land purchasers are over-represented raises an obvious question: are the descendants (and pseudo-descendants) of monastic land purchasers genuinely better off or are there just more of them? As indicated in Table 4.3, the answer is likely both. In the top section we see a consistent over-representation of the treatment group among positive status indicators, with a ratio consistently over 1.6. The bankrupts' lists in the middle section are somewhat more ambiguous, as they indicate financial distress but sufficient assets and connections to proceed with bankruptcy, and here the results are less clear but still show some over-representation. Finally, in indictments and workhouse lists we still find more members of the treatment surname group but at a lower ratio than those found in higher-status lists. The results so far paint a picture of *both* higher average status and demographic expansion of treated surname groups, consistent with the an essentially Malthusian relationship between wealth and fertility.

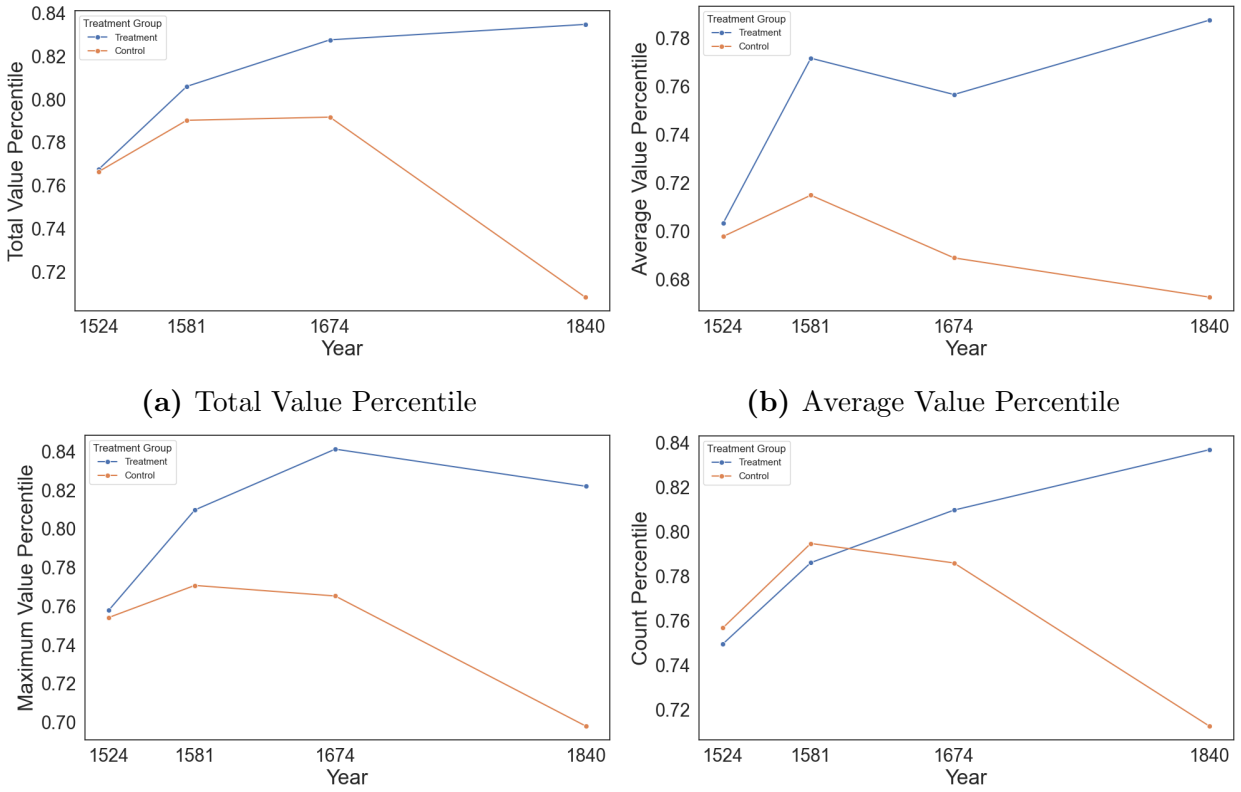
Table 4.3: Treatment and Control Surnames on Status-Loaded Lists

Indicator	Treatment	Control	Ratio	P-Value
Monumental Brasses	1.77%	1.08%	1.65	0.013*
Victuallers 1651-1828	5.23%	3.26%	1.61	0.000***
Freeholders List 1713-1780	5.39%	2.89%	1.87	0.002**
PCC Wills 1558-1858	5.07%	2.28%	2.22	0.000***
Bank Returns 1845-1880	3.75%	1.99%	1.88	0.000***
Bankrupts List 1800-1820	3.82%	3.24%	1.18	0.268
Bankrupts List 1820-1843	3.85%	1.54%	2.50	0.341
Indictments 1745-1782	4.52%	2.90%	1.56	0.103
Workhouse List 1861	2.48%	2.23%	1.11	0.012*

Note: PCC Wills list from The National Archives, Freeholders Lists from Friends of Devon's Archives, all other lists from GENUKI.

Moving on from the impressionistic picture painted by the status-loaded lists, we can turn to tax assessments for direct measures of wealth across time. Digging into the much denser and richer taxation data, we find much the same story. Figure 4.8 presents four measures of family "success" in a pre-industrial economy, all of which point to a persistent advantage for purchasers of monastic land and their (pseudo-)descendants. Figure 4.8a indicates the percentile ranking of the total recorded wealth of the average treated and non-treated surname group: while both start around the 76th percentile, by 1840 the control group has dropped below the 72nd and the treated has climbed beyond the 82nd. Total value is, in my view, the best measure of overall family success, as both material wealth and a large number of well-off descendants were important goals of household heads during this period. For the average condition of those (pseudo-)descendants, Figure 4.8b shows a similar divergence from the control group, with those in the treatment group sitting about ten percentage points higher in the wealth distribution. For maximum value, I simply rank surname groups by the wealth of their richest member in any given tax assessment in the hope of capturing more directly the lineage of those who purchased monastic land. Figure 4.8a presents this data, and indeed we see a stronger effect when only considering the richest

household of the family at any given time. Finally, the count data in Figure 4.8d shows a very stark divergence between treatment and control groups, with the treatment group far more numerous among taxpayers by the 1840s.



(a) Total Value Percentile

(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.8: Measures of Surname-Group Outcomes Across Tax Assessments

A couple notes of caution here. First, recall that, due to the sources available, the types of wealth here are changing, going from land or goods in 1524 and 1581 to hearths in 1674 and back to land only in the 1830s and 40s. In a pre-industrial economy all three are heavily correlated, but a final outcome variable that measures landownership *only* is bound to overstate the advantage gained by the descendants of those who converted other assets into land. Second, in producing these plots, the wealth of surname-groups whose numbers fell to zero has been set to zero. This more accurately reflects the success of monastic land purchasers relative to all families extant in Devon in 1524, but not their place in the wealth distribution during any specific tax assessment. The graphs with memberless surname groups

removed have been presented in the Appendix, and show some convergence in the outcomes of treatment and control groups between the sixteenth and nineteenth century, but with a significant status increment remaining even in 1840.

Regressions

To paraphrase Deuteronomy, the scholar does not conclude on graphs alone. Isolating the effect of monastic land purchases on the fortunes of surname-groups requires disposing of other geographical and economic factors that could have propelled the purchasers to the top of the wealth and status hierarchy with or without the Dissolution. In this case I will be estimating the average treatment effect (ATE): the average amount that the average surname-group's outcome of interest (e.g. total family wealth in 1840) would change solely due to monastic land purchases. To estimate this quantity, I have conducted two main types of regressions: matching and targeted maximum likelihood estimation. In the first, I group each surname group containing a monastic land purchaser with its four nearest neighbors on the variables discussed above, dropping all unmatched observations. I then run the regression:

$$Outcome_{i,t} = \beta_0 + \beta_1 Treatment_i + \beta_2 X_{i,t-1} + \beta_3 G_i + \epsilon_{i,t} \tag{4.1}$$

where Treatment is our treatment dummy, $X_{i,t-1}$ is a vector of the geographical characteristics and economic conditions of the parishes of average members of the surname group during the previous period, and G_i is a match-group dummy. Because all unmatched observations have been removed from the dataset, the match-group dummy ensures that each treatment surname group is compared only to its most similar untreated groups. By using the match-group dummy and controlling for each group's average geographic characteristics, I hope to isolate the impact of monastic land purchases. Figure 4.9 shows the estimated effect of monastic land purchases on total surname-group wealth percentile in 1581, 1674, and the 1840s—a consistent status increment of over five percentage points during the entire period. Once again, this analysis was conducted treating disappearing families as having

zero wealth; removing them results in a more quickly fading status advantage that is still strong in 1674 but has largely disappeared by the nineteenth century. These results and the regression tables for this analysis are presented in the Appendix.

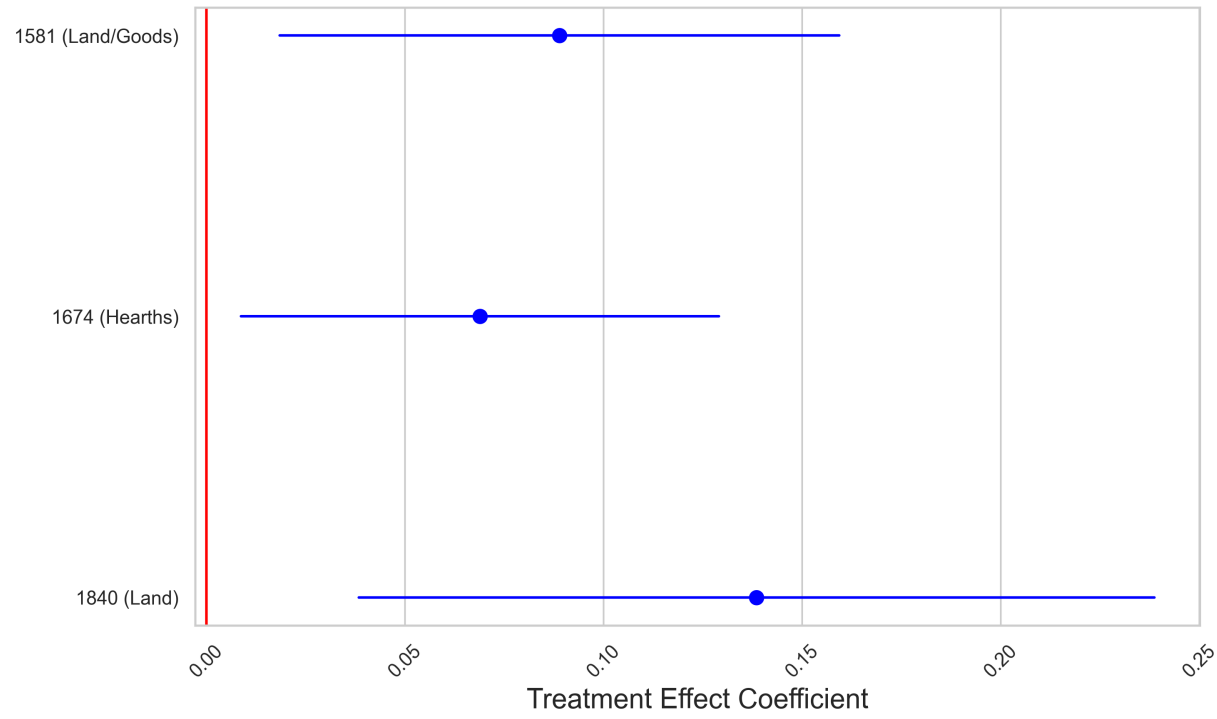


Figure 4.9: Total Value Percentile - Matching Estimator

To obtain another estimate of the effect of monastic land purchases on wealth and status over the long term, I switch to a doubly-robust targeted maximum likelihood estimator (TMLE), most commonly used in epidemiology,[80] that first calculates a "naive" ATE, the the average difference between the predicted outcome variable for each observation if treated and the predicted outcome if untreated, i.e.

$$\hat{ATE} = \frac{1}{N}\sum_{i=1}^{N}(\hat{E}[Y_i|Treat_i = 1, \mathbf{X}_i] - \hat{E}[Y_i|Treat_i = 0, \mathbf{X}_i] \tag{4.2}$$

Then TMLE estimates the probability of treatment based on the six predictors outlined

80. Megan S. Schuler and Sherri Rose, "Targeted Maximum Likelihood Estimation for Causal Inference in Observational Studies," *American Journal of Epidemiology* 185, no. 1 (January 2017): 65, eprint: https://academic.oup.com/aje/article-pdf/185/1/65/9105214/kww165.pdf.

above:

$$\begin{aligned} Treat_i = \beta_0 &+ \beta_1 ln(TotVal1524_i) + \beta_2 ln(Count1524_i) \\ &+ \beta_3 ln(MaxVal1524_i) + \beta_4 WillShare_i \\ &+ \beta_5 \ln(ParishAvgVal1524_i) + \beta_6 \ln(ParishMonasticLand_i) + \epsilon_i \end{aligned} \tag{4.3}$$

TotVal1524 is the total assessed wealth of the surname group in 1524, Count1524 is the total number of surname-group taxpayers in 1524, MaxVal1524 is the wealth of the surname-group's richest member in 1524, WillShare is the share of PCC wills made up by surname-group members, ParishAvgVal1524 is the average wealth among surname-group members' fellow parish taxpayers in 1524, and ParishMonasticLand is the value of monastic land in the average surname-group member's parish.

TMLE next uses these probabilities to create a "clever covariate" to adjust estimates of the average treatment effect generated through OLS:

$$H(Treat, \mathbf{X}) = \frac{\mathbb{I}(Treat = 1)}{Pr(Treat = 1|\mathbf{X})} - \frac{\mathbb{I}(Treat = 0)}{Pr(Treat = 0|\mathbf{X})} \tag{4.4}$$

$\mathbb{I}(Treat = 1)$ is an indicator function that takes a value of 1 if $Treat = 1$ and 0 if $Treat = 0$ and $Pr(Treat = 1|\mathbf{X})$ is the estimated probability of treatment based on Equation 4.3.

TMLE then estimates the fluctuation parameter ϵ, which tells us how much to adjust our "naive" ATE estimate, using the equation:

$$logit(E[Y|Treat, \mathbf{X}] = logit(\hat{E}[Y|Treat, \mathbf{X}] + \epsilon H(Treat, \mathbf{X}) \tag{4.5}$$

TMLE finds ϵ by running the regression:

$$E[Y|Treat, \mathbf{X}] = expit(logit(\hat{E}[Y|Treat, \mathbf{X}] + \epsilon H(Treat, \mathbf{X})) \tag{4.6}$$

This step is crucial, and tells TMLE how to use the clever covariate to adjust the "naive" ATE estimate to bring it closer to the true average treatment effect.

The algorithm uses the value of ϵ to compute the updated expected outcomes of all observations under treatment:

$$\hat{E}^{\star}[Y|Treat = 1, \mathbf{X}] = expit(logit(\hat{E}[Y|Treat = 1, \mathbf{X}] + \epsilon H(Treat = 1, \mathbf{X})) \tag{4.7}$$

and under no treatment:

$$\hat{E}^{\star}[Y|Treat = 0, \mathbf{X}] = expit(logit(\hat{E}[Y|Treat = 0, \mathbf{X}] + \epsilon H(Treat = 0, \mathbf{X})) \tag{4.8}$$

Subtracting 4.8 from 4.7 gives our updated and more accurate ATE:

$$\hat{ATE}_{TMLE} = \frac{1}{N} \sum_{i=1}^{N} \hat{E}^{\star}[Y_i|Treat_i = 1, \mathbf{X}_i] - \hat{E}^{\star}[Y_i|Treat_i = 0, \mathbf{X}_i] \tag{4.9}$$

The combination of the "naive" ATE estimate and the adjustment with the clever covariate ensures robust estimation if either the model of treatment assignment *or* the outcome regression is specified correctly.[81]

Figure 4.10 presents these results, which show, if anything, a stronger effect than the matching estimator. Interestingly, unlike the matching estimator, these results change very little when surname groups with no wealth or members are removed, likely due to the inverse probability weighting that gives much more emphasis to low-propensity-score treated groups and high-propensity-score untreated groups. Taken together, these results show a striking advantage gained by the purchasers of monastic land and their pseudo-descendants. Their economic weight—and accompanying social and political power—in Devon was far higher

81. Schuler and Rose, "Targeted Maximum Likelihood Estimation for Causal Inference in Observational Studies."

than it would have been in the absence of the Dissolution.

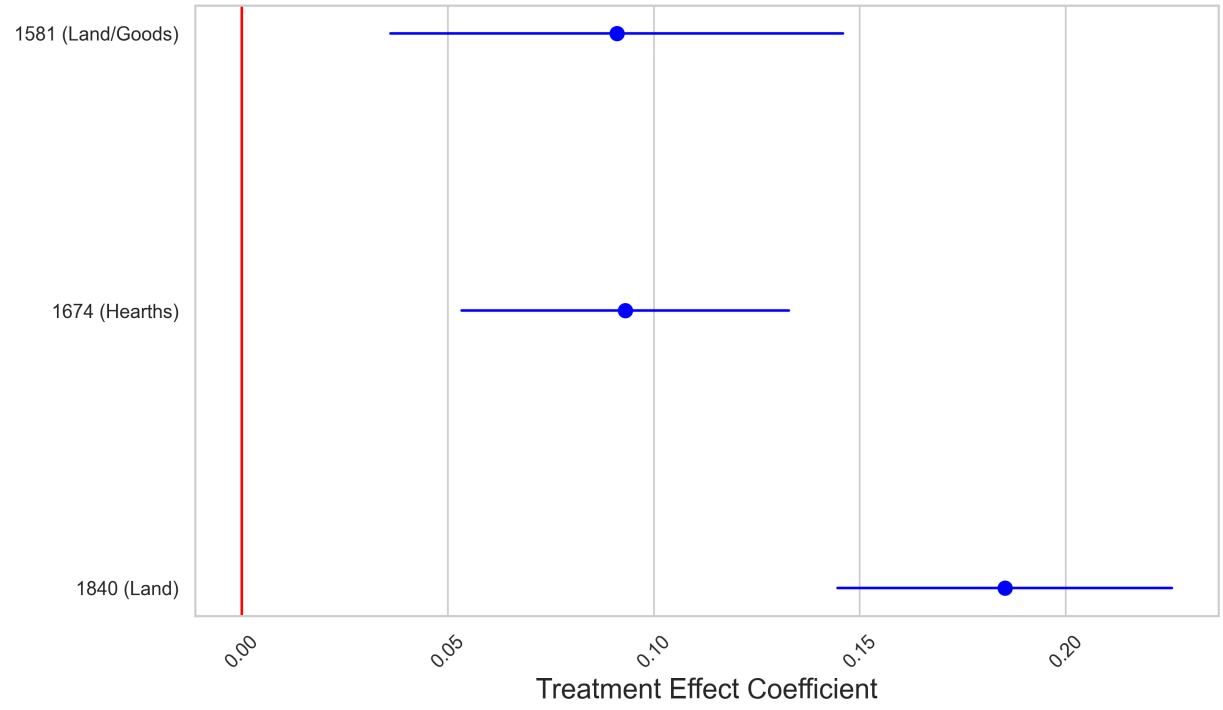
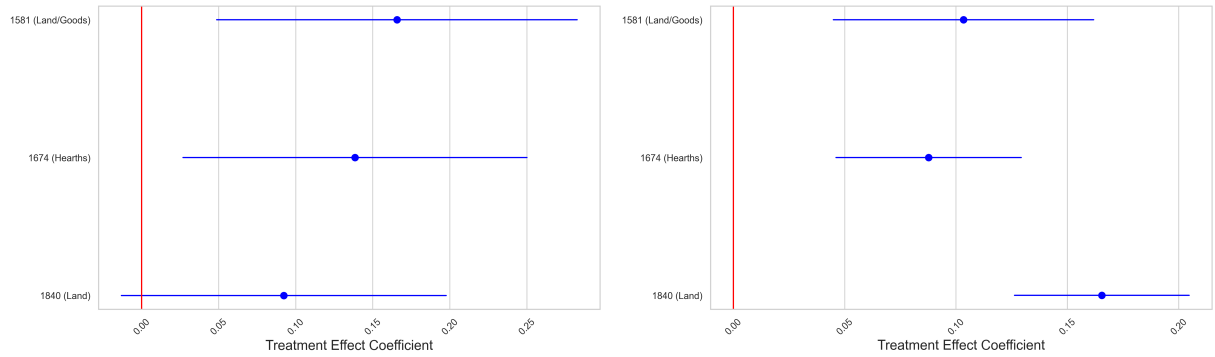


Figure 4.10: Total Value Percentile - TMLE Estimator

Figures 4.11a and 4.11b show the effect of post-Dissolution land purchases on the fortunes of the average member of a treated surname group, using the methodology described above. Again, we see a strong advantage gained by surname-groups whose members purchased monastic land, with their pseudo-descendants sitting around ten percentage points higher in the wealth distribution even centuries after the Dissolution. A similar advantage in today's UK individual wealth distribution would represent over £220,000 gained from sitting at the 76th rather than the 66th percentile, or £146,000 from being at the 63rd rather than 53rd.[82]

The effects found above are even stronger when we look at the ranking of the richest member of each surname group, more likely to be the direct descendant of a monastic land purchaser. As shown in Figures 4.12a and 4.12b, the richest members of treatment surname groups could expect to sit around fifteen percentage points higher in the wealth rankings,

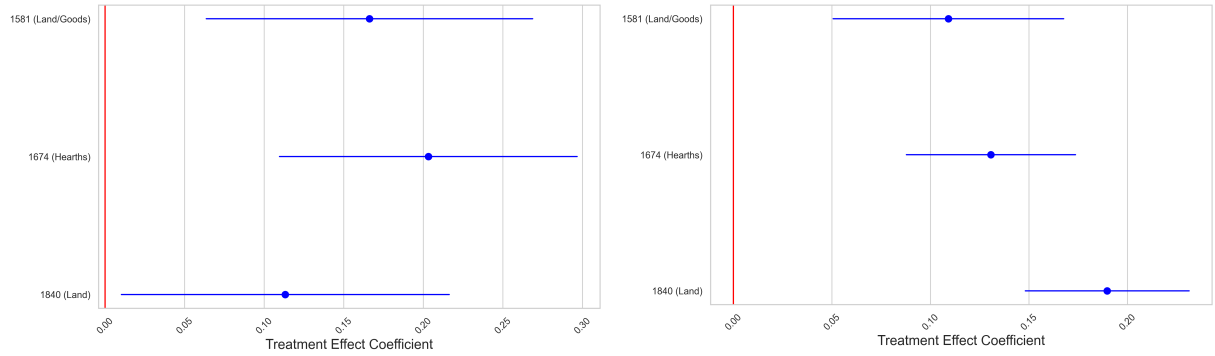
82. The end position of the average member of a treated group varies depending on how zero-valued surname groups are treated, as explained above.



(a) Matching Estimator **(b)** TMLE Estimator

Figure 4.11: Average Value Percentile ATE Estimates

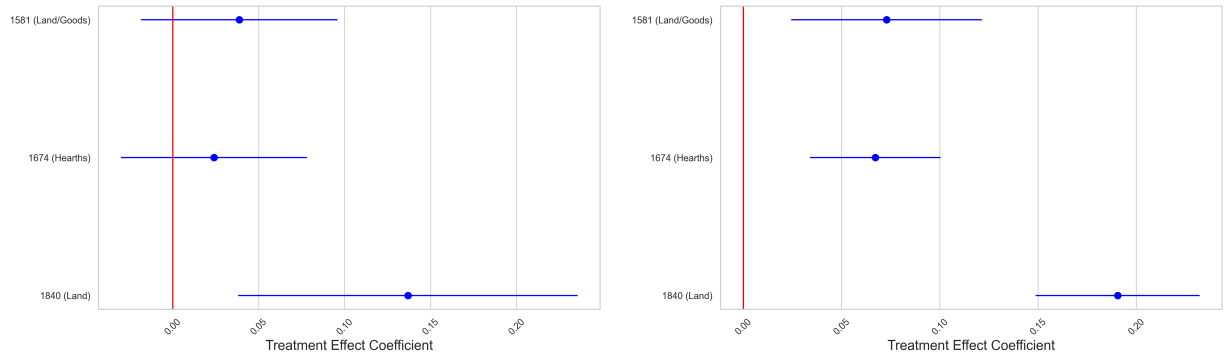
even into the nineteenth century. The fact that these effects are stronger than those obtained for average wealth adds additional credibility to the whole exercise; monastic land purchasers tended to be the richest men in their surname-group and the main branch of any given family is more likely than any other single branch to be the richest a century in the future.



(a) Matching Estimator **(b)** TMLE Estimator

Figure 4.12: Maximum Value Percentile ATE Estimates

Finally, I again find that treated surname groups gained in numbers as well as wealth. Figures 4.13a and 4.13b show a substantial numerical advantage secured by monastic land purchasers which continued into the nineteenth century. The combination of increased average wealth and increased numbers is exactly what we would expect to see among more economically successful families in a broadly Malthusian era, so it is encouraging to see an effect here as well.



(a) Matching Estimator **(b)** TMLE Estimator

Figure 4.13: Count Percentile ATE Estimates

The persistence of the effects presented above, with status gains still visible three centuries after the Dissolution, is in keeping with the broad sweep of the social mobility literature which sees the pre-industrial wealth distribution as extraordinarily sticky, even through political upheavals. As stated above, I make no attempt at providing point estimates of intergenerational wealth elasticity, but the long shadow of monastic land purchases reaffirms the very high estimates produced by other authors. Where these results run counter to the existing literature is in the persistence of a temporary "shock." While differences in the nature of the shock may play a part—monastic wealth was intentionally purchased at great expense while the wealth shocks examined by others were essentially random gains or losses of wealth—a more likely explanation is found in the far less open political and economic system of early modern England compared to that of the nineteenth-century United States.

The persistence of status gains from monastic land purchases raises a deeper question: why *would* the exchange of non-land wealth for wealth in land produce such a strong and persistent status effect? Simply put, it is the exchange of a depreciating asset for an appreciating one near the beginning of a long-term explosion in land prices. Land prices rose approximately 200% over the course of the sixteenth century alone, while repeated debasements ground down the value of English coinage.[83] As population grew and silver flooded into Europe from South German and New World mines, land became an increasingly attractive

83. Whittle, *The Development of Agrarian Capitalism: Land and Labour in Norfolk 1440-1580*, 74.

asset class and a source of stability in turbulent economic times. Land was also attached to political power, opening up the possibility of political rents flowing to families bearing the surnames of the original monastic land purchasers.

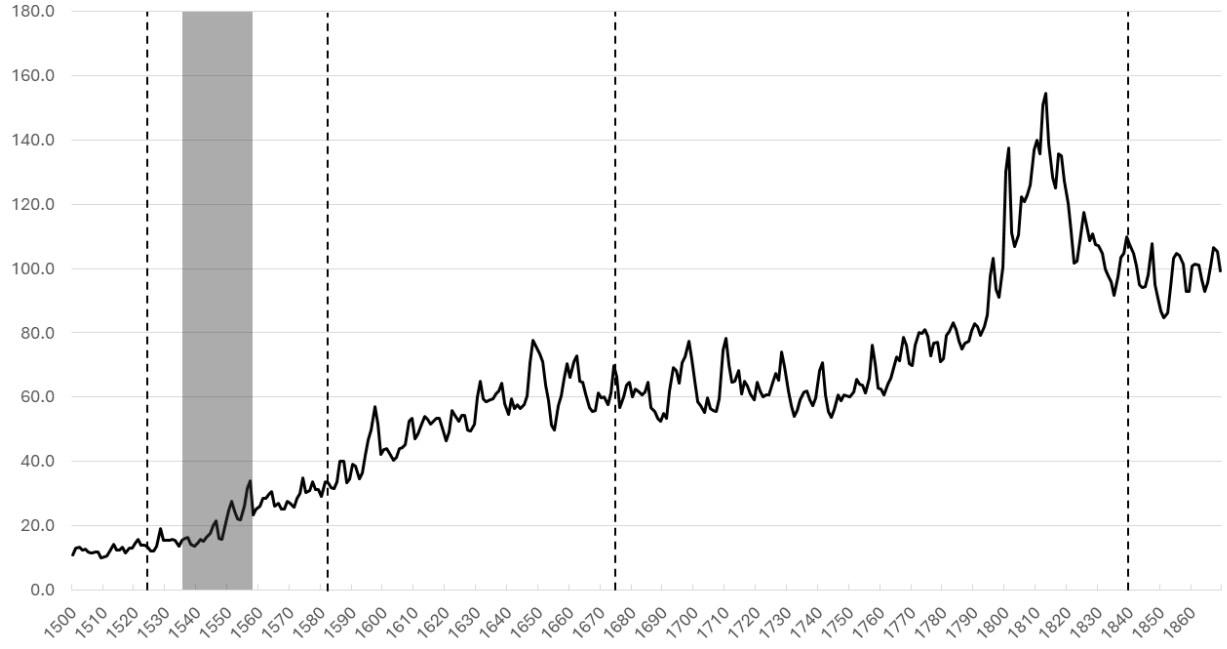


Figure 4.14: Price Index 1500-1870, Data from Clark (2009)

Figures 4.14 and 4.15—with vertical lines representing the years for which I have collected taxation data and the shaded area representing the "treatment" period of monastic land purchases—provide the lion's share of the explanation for the large status gains made by monastic land purchasers. The price index shown in Figure 4.14, largely reflecting the cost of agricultural products, roughly doubled between 1524 and 1581, nearly doubled again by 1674, and increased by over two-thirds again by the 1840s.[84] Those prices were one of the main drivers behind the trend in real rents shown in Figure 4.15, with approximately a 50% increase between the treatment period and 1581, then a doubling by 1674, capped off by another roughly 50% rise into the 1840s.[85] The monastic land purchasers could not have known at the time, but they were investing heavily in an asset class that would go on to

84. Gregory Clark, "The macroeconomic aggregates for England," *Research in Economic History*, 2009,
85. Gregory Clark, "Land rental values and the agrarian economy: England and Wales, 1500–1914," *European Review of Economic History* 6, no. 3 (2002): 41.

Figure 4.15: Real Rents 1500-1910, from Clark (2002)

have a three-century bull run before the Grain Invasion of the 1870s sent the price tumbling back down. According to Mingay, even relatively incompetent gentry families could hardly avoid being buoyed by rising rents and agricultural prices, and family disasters tended to come through aggressive litigation or excessive borrowing to buy political office.[86] While land values are not the whole story behind the rise of monastic land purchasers, the huge growth in land rents no doubt provided a powerful motor of upward mobility.

The rest of that story likely consists of a number of other contributing factors that should temper our confidence in the sheer size of the effects presented here. Factors like underlying competence (inherited culturally, environmentally, or genetically), political connections, and economic networks no doubt influenced the decision and ability to purchase monastic land. These factors are necessarily unobservable to me and could have created substantial differences in economic outcomes between treated and untreated groups even in the absence of monastic land purchases. However, the strength of the effects when focusing specifically on

86. Mingay, *The Gentry: The rise and fall of a ruling class*, 41, 56.

land in the 1840s—where the effects are often larger than those from previous assessments—points toward at least a residual effect of the land itself. In my view, the growing capital and rental value of land, when combined with the relative decline in the value of other asset classes and the possible unobserved human capital advantages passed down through families, is sufficient to explain the presence of a substantial wealth advantage even three centuries on from the Dissolution.

4.7 Just a Reshuffle at the Top?

The foregoing analysis should give us reasonable confidence that the families of monastic land purchasers did indeed maintain higher status for centuries following the Dissolution. My second research question concerns the consequences of this colossal redistribution of wealth, with most of the literature leading us to expect some detectable changes in economic structure. To investigate these changes, I have regressed the sectoral shares of employment from the 1831 census (agriculture, industry, and other) on both the value of monastic land and the prevalence of recipient and non-recipient surnames at both the parish and hundred level.

$$\begin{aligned} Outcome_i = \beta_0 + \beta_1 MonasticLandShare + \beta_2 TreatmentSurnameShare_i \\ + \beta_3 ControlSurnameShare_i + \beta_4 X_i + \epsilon_i \end{aligned} \tag{4.10}$$

In this regression, $Outcome_i$ is the outcome of interest (sectoral employment shares or measures of social mobility) for parish or hundred[87] i in the early nineteenth century. $MonasticLandShare_i$ is the value of monastic land in parish or hundred i at the time of the Dissolution divided by monastic land plus total assessed secular wealth in 1524, $TreatmentSurnameShare_i$ is the share of taxed residents in parish or hundred i that shared a surname ID with the recipients of monastic land in 1524, and $ControlSurnameShare_i$ is

87. The administrative unit between parish and county.

the same measure for our control group. Finally, X_i is a vector of time-invariant controls like distance to market towns, distance to coal fields, terrain ruggedness, wheat suitability, and parish/hundred area.

If the gentry themselves are the key drivers of structural economic change, the presence of monastic land purchasers, as members of the newly-ascendant and uniquely capitalistic gentry class, should predict a lower share of workers in agriculture and a higher share in industry, while the presence of the control group should have no effect. On the other hand, if only commercialization is important and monastic land itself is the crucial spur to commercialization, only the presence of monastic land should predict greater industrial or commercial employment. Finally, if neither of the above variables is statistically significant, this would be solid evidence against both the gentry power and commercialization theses.

Table 4.4: Economic Structure Regressions - Parish Level

	Industry Share	Agriculture Share	Other Share
Monastic Land Share	0.0549	-0.1445	0.0896*
	(0.0648)	(0.0980)	(0.0466)
Treatment Surname Share 1524	-0.1181	0.3685	-0.2504
	(0.1530)	(0.2505)	(0.1570)
Control Surname Share 1524	0.1227	-0.2770	0.1543
	(0.1794)	(0.3123)	(0.2614)
Mean Slope	-0.0014	0.0033	-0.0018
	(0.0040)	(0.0067)	(0.0043)
Wheat Suitability	-0.0008	0.0021**	-0.0013**
	(0.0005)	(0.0009)	(0.0006)
Area	0.0000	-0.0000	0.0000*
	(0.0000)	(0.0000)	(0.0000)
Lay Subsidy p.c. 1524	0.0003	-0.0006***	0.0004**
	(0.0002)	(0.0002)	(0.0002)
Dist to Market	-0.0066**	0.0137***	-0.0071***
	(0.0026)	(0.0044)	(0.0027)
Constant	0.2509***	0.5180***	0.2311***
	(0.0405)	(0.0694)	(0.0450)
R-squared	0.0679	0.1265	0.0955
R-squared Adj.	0.0453	0.1053	0.0736
N	340	340	340

* p<.1, ** p<.05, ***p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524, recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021), and area is calculated based on the parish shapefile.

At the parish level, the only variable of interest that seems to have an effect on future economic structure is the share of ex-monastic land. Interestingly, this variable does not predict a higher share in industry, but does predict greater employment outside of agriculture or industry (likely in commerce, law, and related fields) The coefficient is moderately economically significant, with a 10 percentage point increase in the share of monastic land in a given parish resulting in a 0.9 percentage point increase in the share of "other" employment. Neither the share of residents who share a recipient or control surname is significant. The R-squared is quite low here, indicating that the factors influencing sectoral employment at

such a local level may be more idiosyncratic than our control variables can capture.

To get a better estimate of the effect of monastic land on future economic structure, we can use an inverse probability weighted (IPW) model. First, I run a regression predicting the share of monastic land in a parish using all the covariates from the original regression:

$$\begin{aligned} MonasticLandShare_i = \beta_0 + \beta_1 RecipientSurnameShare_i \\ + \beta_2 ControlSurnameShare_i + \beta_3 X_i + \epsilon_i \end{aligned} \tag{4.11}$$

Then, I run a simple OLS regression of our outcome (sectoral employment share) on monastic land share, weighting by the inverse probability of observing the true value of monastic land in each parish given the other covariates. Essentially, this process emphasizes observations with an "unexpected" share of monastic land given all of their other features, helping to isolate the independent effect of monastic land.

Table 4.5: Inverse-Probability-Weighted Regressions - Parish Level

	Industry	Agriculture	Other
Monastic Land Share	-0.164^{**}	-1.234^{***}	0.098
	(0.076)	(0.127)	(0.091)
Geographic Controls	Y	Y	Y
Observations	338	338	338

* p<.1, ** p<.05, *** p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524. Variables used to generate propensity scores: recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021) and averaged by area, and area is calculated based on the parish shapefile.

The results are broadly similar to the original regression, with less agricultural and more tertiary employment (though the second is not statistically significant in this specification), but the IPW regression has more monastic land being associated with less industrial employment rather than more. In keeping with the OLS results above, replacing monastic land share with either treated surname share or control surname share produces no statistically significant results.

Table 4.6: Economic Structure Regressions - Hundred Level

	Industry Share	Agriculture Share	Other Share
Monastic Land Share	-0.29	0.17	0.12
	(0.20)	(0.75)	(0.83)
Treatment Surname Share 1524	-0.14	2.41	-2.28
	(0.92)	(1.64)	(1.68)
Control Surname Share 1524	-0.35	0.31	0.04
	(0.99)	(2.92)	(2.57)
Mean Slope	-0.01	-0.02	0.03
	(0.01)	(0.03)	(0.02)
Wheat Suitability	-0.00*	0.00	-0.00
	(0.00)	(0.00)	(0.00)
Area	0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)
Lay Subsidy p.c. 1524	-0.00	0.00***	-0.00**
	(0.00)	(0.00)	(0.00)
Dist to Market	-0.03***	0.07***	-0.03*
	(0.01)	(0.02)	(0.02)
Constant	0.55***	-0.06	0.51**
	(0.13)	(0.29)	(0.21)
R-squared	0.58	0.56	0.46
R-squared Adj.	0.42	0.40	0.26
N	31	31	31

* p<.1, ** p<.05, ***p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524, recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021), and area is calculated based on the parish shapefile.

Zooming out to the hundred level, we see that these results do not seem to scale up consistently. The effect on the share of "other" employment is now statistically insignificant,

while the sign of the coefficient has flipped for both industry and agriculture. With a sample size of 32, the statistical power of this regression is low but the R-squared is far higher than that of the parish regression, indicating that the control variables at least are capturing some of the relevant factors related to variation in sectoral employment.

Table 4.7: Inverse-Probability-Weighted Regressions - Hundred Level

	Industry	Agriculture	Other
Monastic Land Share	0.043	−0.185	0.054
	(0.210)	(0.308)	(0.262)
Geographic Controls	*Y*	*Y*	*Y*
Observations	31	31	31

* p<.1, ** p<.05, *** p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524. Variables used to generate propensity scores: recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021) and averaged by area, and area is calculated based on the parish shapefile.

Using the IPW model described above also does not produce any statistically significant results. The signs of each coefficient *are* what we would expect given an increase in productivity from ex-monastic land, with a decrease in agriculture and a movement into industry and other employment, but the effects are small and statistically insignificant, so no firm conclusions can be drawn. As above, IPW regressions were repeated using treatment and control shares of surnames as treatment variables, and produced no significant results.

Each of these analyses was repeated using data on recipients and the control group for the years 1524, 1543, 1581, 1674, and the 1840s tithe data, as well as using the share of parish

or hundred wealth controlled by each surname group. The results are broadly similar: some effect from monastic land at the parish level, noisy and conflicting effects at the hundred level. Recipient and control surname shares and wealth shares were not significant in any specification.

The results above militate strongly against the gentry power thesis, as we see no effects from either the purchasers of monastic land or their equally-wealthy non-purchasers. The increase in tertiary sector employment provides some evidence for the commercialization thesis, but only at the parish level as the results from the hundred level are inconclusive. This could indicate that large parcels of ex-monastic land proved to be attractive places to site non-agricultural industrial or commercial ventures, that local communities took advantage of ex-monastic building materials to construct buildings of their own, or that more commercialized land enabled greater agricultural production that was not used to support concentrations of non-agricultural workers in the same hundred. Mingay provides one interesting possibility, as he records that parcels of monastic land containing ruined monastic buildings were particularly attractive to gentry wishing to construct new country homes or renovate old ones nearby.[88] A country home and its surrounding parks or game preserves will mechanically reduce agricultural employment and increase tertiary sector employment (i.e. servants and staff) in a localized area while providing demand for agricultural production elsewhere. It is possible that such a mechanism explains the conflict between parish- and hundred-level results, but more analysis will be needed to sift out a plausible explanation for these findings. The null hypothesis advanced by scholars like Jones and earlier historians seems to explain these results well, but there are still signs of life in the commercialization thesis in Devon.

Finally, I have examined the effects on social mobility and over the three centuries following the Dissolution using the equation:

88. Mingay, *The Gentry: The rise and fall of a ruling class*, 45.

$$corr(Y_{t,h}, Y_{t-1,h}) = \beta_0 + \beta_1 \,\text{MonasticLandShare}_h + \beta_2 \,\text{TreatmentSurnameShare1581}_h + \beta_3 \,\text{ControlSurnameShare1581}_h + \beta_4 \,\text{MeanSlope}_h + \beta_5 \,\text{WheatSuitability}_h + \beta_6 \,\text{Area}_h + \beta_7 \,\text{LaySubsidyPC1524}_h + \beta_8 \,\text{DistToMarket}_h + \varepsilon_h \tag{4.12}$$

Here, the outcome is the correlation in a surname-group outcome (average wealth percentile, total wealth percentile, maximum surname wealth percentile) between two tax assessments at times t and t-1 *in each hundred h*.

The commercialization thesis would predict greater social mobility due to the presence of monastic land itself, while the gentry power thesis would predict greater mobility from the presence of treatment surname bearers as members of gentry families. The null hypothesis, as usual, would predict non-significance for both variables of interest. As wealth ranks and distribution at the parish level are extremely noisy, I have focused this analysis on the next administrative level: the hundred. Table 4.8 reports the results of a regression on the correlation of a surname's rank in the average wealth distribution within each hundred between two tax assessments. The regression equation is still Equation 4.10, with the correlation between surname ranks in two different years as the outcome variable.

Table 4.8: Regressions on Correlation in Average Surname-Group Value Percentile by Hundred

	1524-1581	1581-1674	1674-1840	1524-1840	1581-1840
Monastic Land Share	0.63	4.74	2.49	1.49	0.31
	(5.02)	(4.31)	(3.73)	(3.20)	(4.07)
Treatment Surname Share 1581	0.25	1.30	0.58	-0.38	-2.27
	(1.80)	(2.90)	(1.80)	(1.97)	(4.47)
Control Surname Share 1581	-4.63**	-0.25	-0.50	0.54	2.80
	(2.28)	(3.12)	(2.00)	(1.74)	(4.15)
Mean Slope	-0.05*	-0.01	-0.02	-0.02	0.02
	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)
Wheat Suitability	0.00	-0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Area	-0.00	-0.00	-0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Lay Subsidy p.c. 1524	-0.00	0.00	0.00	0.00*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dist to Market	-0.00	0.02	0.01	0.01	-0.03
	(0.03)	(0.02)	(0.03)	(0.02)	(0.06)
Constant	0.45***	0.02	0.11	-0.07	0.06
	(0.10)	(0.16)	(0.11)	(0.08)	(0.22)
R-squared	0.37	0.10	0.23	0.46	0.14
R-squared Adj.	0.16	-0.26	-0.07	0.27	-0.16
N	32	29	29	32	32

* p<.1, ** p<.05, ***p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524, recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021), and area is calculated based on the parish shapefile.

Interestingly, the only significant variable of interest is the share of surnames belonging to the *control* group. These are associated with a significantly lower correlation between wealth ranks in the first period. This pattern is repeated (albeit more noisily, and without statistical significance) in the regression on hundred-level correlation in total wealth ranks reported in Table 4.9 below.

Table 4.9: Regressions on Correlation in Total Surname-Group Wealth by Hundred

	1524-1581	1581-1674	1674-1840	1524-1840	1581-1840
Monastic Land Share	2.59	1.83	-3.31	3.53	-0.57
	(4.31)	(4.74)	(4.49)	(4.53)	(5.80)
Treatment Surname Share 1581	2.19	0.82	0.36	-1.25	-1.98
	(2.31)	(3.92)	(2.44)	(2.72)	(2.95)
Control Surname Share 1581	-3.83	0.31	1.15	3.00	4.71
	(2.38)	(3.49)	(2.44)	(2.16)	(3.11)
Mean Slope	-0.06***	0.02	-0.02	-0.01	0.01
	(0.02)	(0.03)	(0.02)	(0.03)	(0.03)
Wheat Suitability	0.00	-0.00	0.00	0.00	0.00
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Area	-0.00	-0.00	0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Lay Subsidy p.c. 1524	-0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dist to Market	-0.00	-0.00	0.03	0.00	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Constant	0.56***	0.09	-0.02	0.01	0.08
	(0.16)	(0.15)	(0.11)	(0.14)	(0.16)
R-squared	0.50	0.16	0.34	0.39	0.32
R-squared Adj.	0.32	-0.17	0.07	0.18	0.08
N	32	29	29	32	32

* p<.1, ** p<.05, ***p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524, recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021), and area is calculated based on the parish shapefile.

Again we see substantially lower short-term stickiness when our control group (relatively wealthy elites who did not purchase monastic land) were more prevalent, though the estimate is noisier and therefore statistically insignificant. Finally, the pattern remains when looking at the correlation between wealth ranks of the richest member of the surname group in each hundred, the results of which are presented in Table 4.10

Table 4.10: Regressions on Correlation in Max. Surname-Group Wealth Percentile by Hundred

	1524-1581	1581-1674	1674-1840	1524-1840	1581-1840
Monastic Land Share	1.54	8.43	-1.51	2.12	1.75
	(4.88)	(6.43)	(3.77)	(4.08)	(5.92)
Treatment Surname Share 1581	2.07	1.01	0.40	-0.83	-1.59
	(2.08)	(4.08)	(1.95)	(2.10)	(3.53)
Control Surname Share 1581	-4.23*	-1.11	1.55	2.81	3.94
	(2.35)	(4.01)	(2.14)	(1.93)	(3.42)
Mean Slope	-0.06**	-0.00	-0.01	-0.01	0.02
	(0.03)	(0.04)	(0.02)	(0.02)	(0.03)
Wheat Suitability	0.00	-0.01	0.00	0.00	0.00
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Area	-0.00	-0.00	0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Lay Subsidy p.c. 1524	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dist to Market	-0.00	0.01	0.02	0.00	-0.04
	(0.04)	(0.03)	(0.03)	(0.02)	(0.05)
Constant	0.50***	0.16	-0.04	-0.01	0.11
	(0.15)	(0.19)	(0.11)	(0.10)	(0.16)
R-squared	0.42	0.22	0.35	0.45	0.19
R-squared Adj.	0.22	-0.09	0.09	0.26	-0.10
N	32	29	29	32	32

* p<.1, ** p<.05, ***p<.01

Note: monastic land share is monastic land in 1535 divided by the sum of monastic land in 1535 and total assessed secular wealth in 1524, recipient and control surname shares are the share of total taxpayers with a surname belonging to a treatment or control group, mean slope, wheat suitability, lay subsidy per capita, and distance to market are drawn from Heldring, Robinson, and Vollmer (2021), and area is calculated based on the parish shapefile.

These results could indicate a relative decline of elites who chose not to convert their material wealth into land, but further studies of specific points in the wealth distribution will be required to confirm or disconfirm this suspicion. Interestingly, these results run slightly against the results for economic structure, which pointed toward monastic land itself as the only relevant determinant of future sectoral employment. In the mobility regressions, monastic land share has a generally *positive* (though non-significant) coefficient, possibly indicating a slight increase in wealth stickiness with more monastic land.

Taken together, the results of the economic analysis don't provide particularly strong

evidence for either the gentry power or commercialization theses. There is some evidence for the role of commercialization at the parish level and, as Devon was a maritime county and relatively late to industrialize, we might expect to see economic advancement take the form of greater commercial employment. However, the failure of these results to scale up to the hundred level should throw a bit of cold water on this interpretation. If the effect remained strong, but simply became noisier, leading to non-significance, that might be expected, but we see the effect decrease to almost zero. The failure of the parish-level results to scale to the hundred level indicate that the real winner here is the null hypothesis: while the sale of lands after the Dissolution set some families up for relatively higher status even centuries after the fact, neither monastic lands nor their purchasers seem to have any detectable and consistent effect on later economic structure.

4.8 Conclusion

This paper has shown strong and consistent benefits accruing to the descendants and families of those who seized the opportunity provided by the Dissolution of the English Monasteries and purchased ex-monastic land. Buoyed by the massive rise in land values and the glacial pace of social mobility identified in other studies of pre-industrial England, this windfall was still benefiting the descendants of its recipients three centuries later. The economic impacts of the Dissolution seem to be far more mixed. While there is some indication that ex-monastic land was associated with higher tertiary-sector employment in 1830, these effects are not visible at the hundred level and potentially explicable by the presence of country homes rather than broader structural change. The results presented here provide little evidence for views that trace a line from the Dissolution to greater productivity and sectoral shifts in employment, whether through the land itself or through its recipients.

A new view of the Dissolution emerges when we examine the results of each research question side by side. Rather than the expropriation of old religious elites to fuel the rise

of a uniquely dynamic social class or the breaking of the institutional logjam holding back the commercialization of the countryside, the Dissolution appears much shabbier: the opportunistic seizure of religious assets that destroyed a thousand-year-old religious tradition, produced a windfall for the Crown and generational wealth for individual families, but created no revolutionary change in the economy as a whole.

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4.9 Paper 3 Appendix

4.9.1 Regression Tables

Table 4.11: Total Value Results

	1581	1674	1840
Treatment	0.0889**	0.0689**	0.1385***
	(0.0360)	(0.0307)	(0.0511)
ln(Parish Monastic Land)	0.0158	0.0022	0.0141
	(0.0306)	(0.0371)	(0.0450)
ln(Previous Parish Avg Value)	-0.0999	0.0220	0.5655*
	(0.3075)	(0.1418)	(0.3354)
Previous Parish Pop Density	-0.0000	0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0000)
Parish Distance to River	0.0054	0.0249	-0.0059
	(0.0130)	(0.0159)	(0.0207)
Parish Distance to Market	-0.0078	-0.0041	0.0207
	(0.0102)	(0.0086)	(0.0131)
Constant	0.9544	0.7477**	-0.1329
	(0.5818)	(0.3738)	(0.5407)
Match-Group Dummies	Y	Y	Y
R-squared	0.7939	0.7904	0.6098
R-squared Adj.	0.7334	0.7281	0.4953
N	195	193	195

* p<.1, ** p<.05, ***p<.01

Note: Treatment is a dummy indicating the purchase of monastic land by a member of the surname group. Parish monastic land is the average value of monastic land in a surname-group member's parish. Previous parish average value is the average value of taxpayer wealth in a surname-group member's parish in the previous tax assessment. Previous parish population density is the number of taxpayers divided by parish area in the average surname-group member's parish. Parish distance to river and market are drawn from Heldring, Robinson, and Vollmer (2021) and are averaged across surname-group members. Match-group dummies are a set of dummies indicating each treatment observation and its four closest matches based on the predictors outlined above.

Table 4.12: Average Value Results

	1581	1674	1840
Treatment	0.1657***	0.1384**	0.0922*
	(0.0597)	(0.0569)	(0.0538)
ln(Parish Monastic Land)	-0.0745	-0.0395	0.0473
	(0.0616)	(0.0627)	(0.0549)
ln(Previous Parish Avg Value)	0.0113	0.1571	0.7435*
	(0.4528)	(0.3146)	(0.4027)
Previous Parish Pop Density	-0.0001	0.0001	-0.0000
	(0.0001)	(0.0001)	(0.0001)
Parish Distance to River	0.0087	0.0609*	0.0009
	(0.0273)	(0.0359)	(0.0287)
Parish Distance to Market	-0.0145	-0.0112	0.0250
	(0.0197)	(0.0185)	(0.0164)
Constant	1.1633	0.4629	-0.7158
	(0.9064)	(0.7702)	(0.6564)
Match-Group Dummies	Y	Y	Y
R-squared	0.4215	0.2831	0.4458
R-squared Adj.	0.2518	0.0700	0.2832
N	195	193	195

* p<.1, ** p<.05, ***p<.01

Note: Treatment is a dummy indicating the purchase of monastic land by a member of the surname group. Parish monastic land is the average value of monastic land in a surname-group member's parish. Previous parish average value is the average value of taxpayer wealth in a surname-group member's parish in the previous tax assessment. Previous parish population density is the number of taxpayers divided by parish area in the average surname-group member's parish. Parish distance to river and market are drawn from Heldring, Robinson, and Vollmer (2021) and are averaged across surname-group members. Match-group dummies are a set of dummies indicating each treatment observation and its four closest matches based on the predictors outlined above.

Table 4.13: Maximum Value Results

	1581	1674	1840
Treatment	0.1662***	0.2032***	0.1133**
	(0.0523)	(0.0477)	(0.0526)
ln(Parish Monastic Land)	-0.0457	-0.0110	0.0338
	(0.0444)	(0.0458)	(0.0446)
ln(Previous Parish Avg Value)	-0.0110	0.1133	0.6521*
	(0.3715)	(0.2163)	(0.3734)
Previous Parish Pop Density	-0.0001	0.0002	-0.0001
	(0.0001)	(0.0001)	(0.0001)
Parish Distance to River	0.0056	0.0333	-0.0064
	(0.0174)	(0.0257)	(0.0235)
Parish Distance to Market	-0.0100	0.0004	0.0246*
	(0.0146)	(0.0125)	(0.0143)
Constant	1.1630	0.5834	-0.4600
	(0.7565)	(0.5324)	(0.5813)
Match-Group Dummies	Y	Y	Y
R-squared	0.6065	0.5720	0.5463
R-squared Adj.	0.4910	0.4448	0.4132
N	195	193	195

* p<.1, ** p<.05, ***p<.01

Note: Treatment is a dummy indicating the purchase of monastic land by a member of the surname group. Parish monastic land is the average value of monastic land in a surname-group member's parish. Previous parish average value is the average value of taxpayer wealth in a surname-group member's parish in the previous tax assessment. Previous parish population density is the number of taxpayers divided by parish area in the average surname-group member's parish. Parish distance to river and market are drawn from Heldring, Robinson, and Vollmer (2021) and are averaged across surname-group members. Match-group dummies are a set of dummies indicating each treatment observation and its four closest matches based on the predictors outlined above.

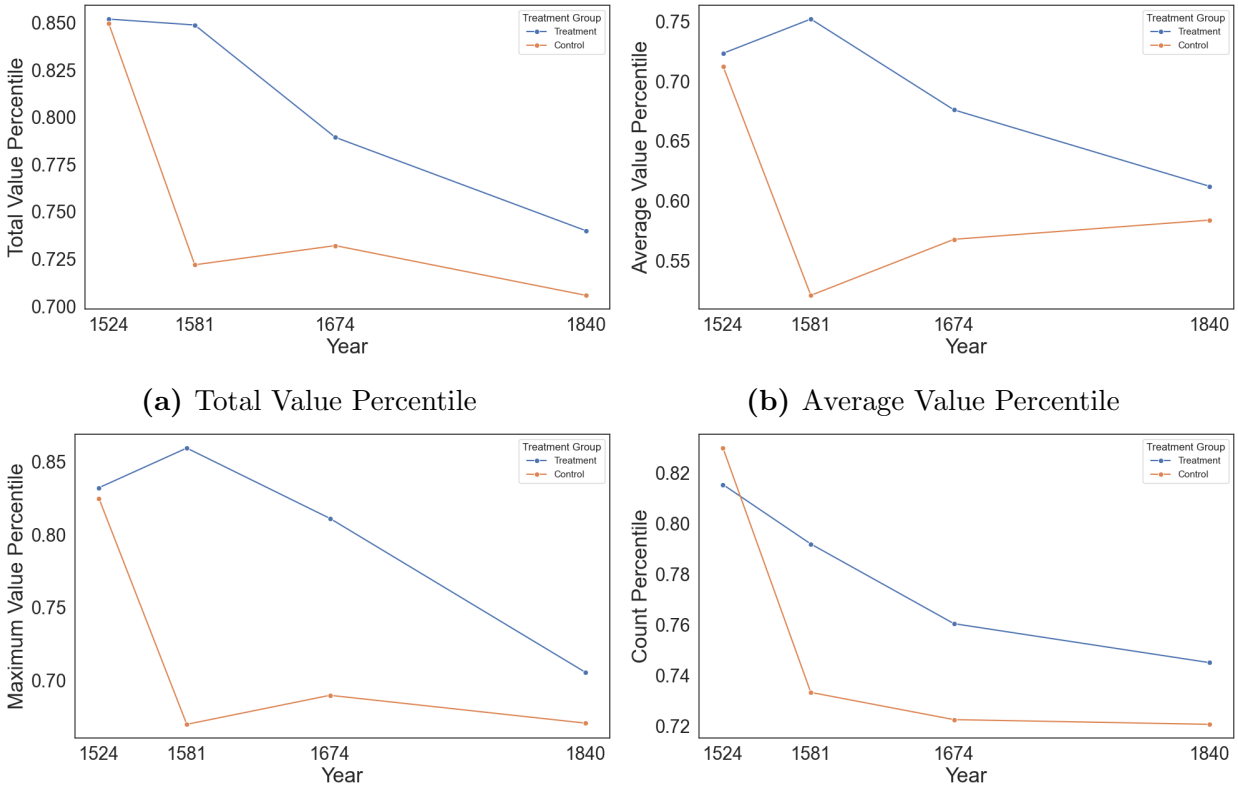
Table 4.14: Count Results

	1581	1674	1840
Treatment	0.0387	0.0240	0.1368***
	(0.0290)	(0.0275)	(0.0502)
ln(Parish Monastic Land)	0.0256	0.0232	0.0098
	(0.0263)	(0.0332)	(0.0450)
ln(Previous Parish Avg Value)	-0.0339	0.0071	0.4874
	(0.2837)	(0.1154)	(0.3251)
Previous Parish Pop Density	0.0000	0.0001	-0.0001
	(0.0000)	(0.0001)	(0.0000)
Parish Distance to River	0.0055	0.0169	-0.0065
	(0.0119)	(0.0132)	(0.0200)
Parish Distance to Market	-0.0062	-0.0033	0.0200
	(0.0093)	(0.0078)	(0.0126)
Constant	0.7665	0.6346**	0.0124
	(0.5398)	(0.3171)	(0.5325)
Match-Group Dummies	Y	Y	Y
R-squared	0.8363	0.8345	0.6255
R-squared Adj.	0.7882	0.7853	0.5157
N	195	193	195

* p<.1, ** p<.05, ***p<.01

Note: Treatment is a dummy indicating the purchase of monastic land by a member of the surname group. Parish monastic land is the average value of monastic land in a surname-group member's parish. Previous parish average value is the average value of taxpayer wealth in a surname-group member's parish in the previous tax assessment. Previous parish population density is the number of taxpayers divided by parish area in the average surname-group member's parish. Parish distance to river and market are drawn from Heldring, Robinson, and Vollmer (2021) and are averaged across surname-group members. Match-group dummies are a set of dummies indicating each treatment observation and its four closest matches based on the predictors outlined above.

4.9.2 Robustness Checks and Alternative Specifications



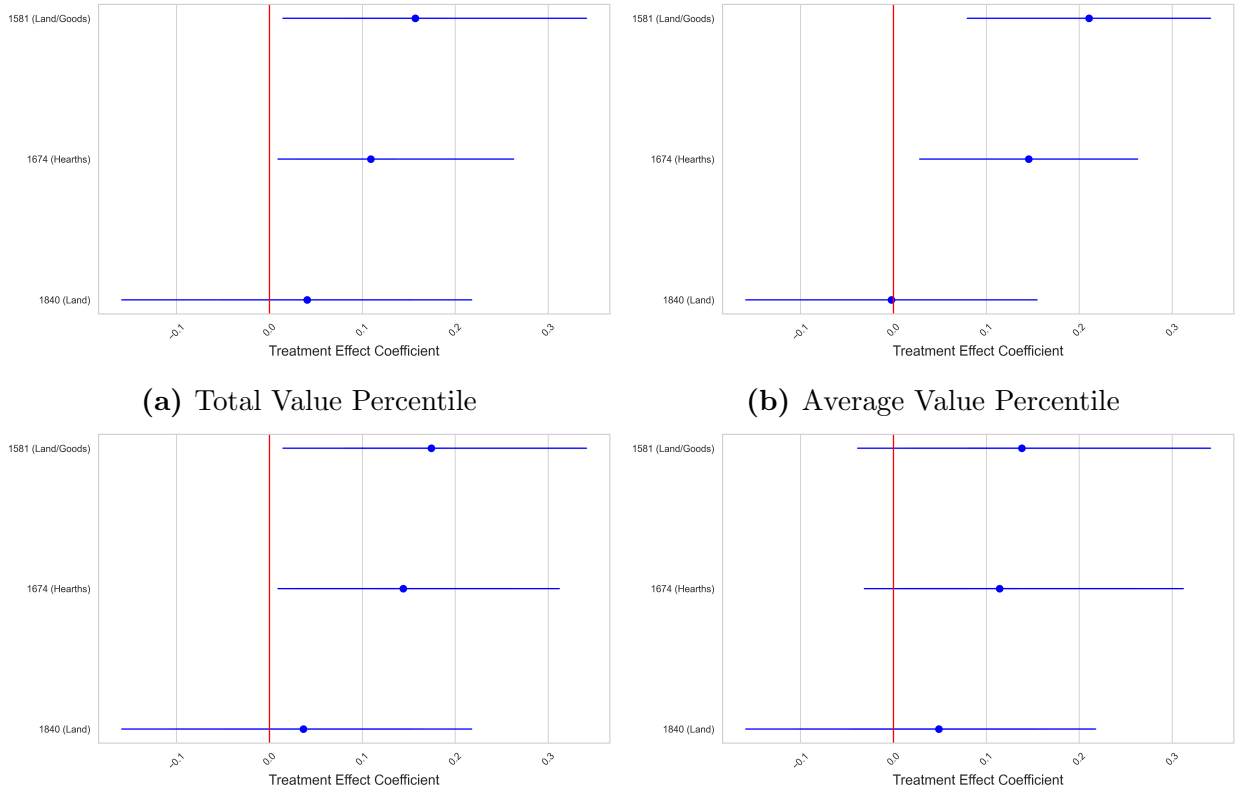
(a) Total Value Percentile

(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.16: Surname-Group Outcomes Across Tax Assessments—Zeroes Removed



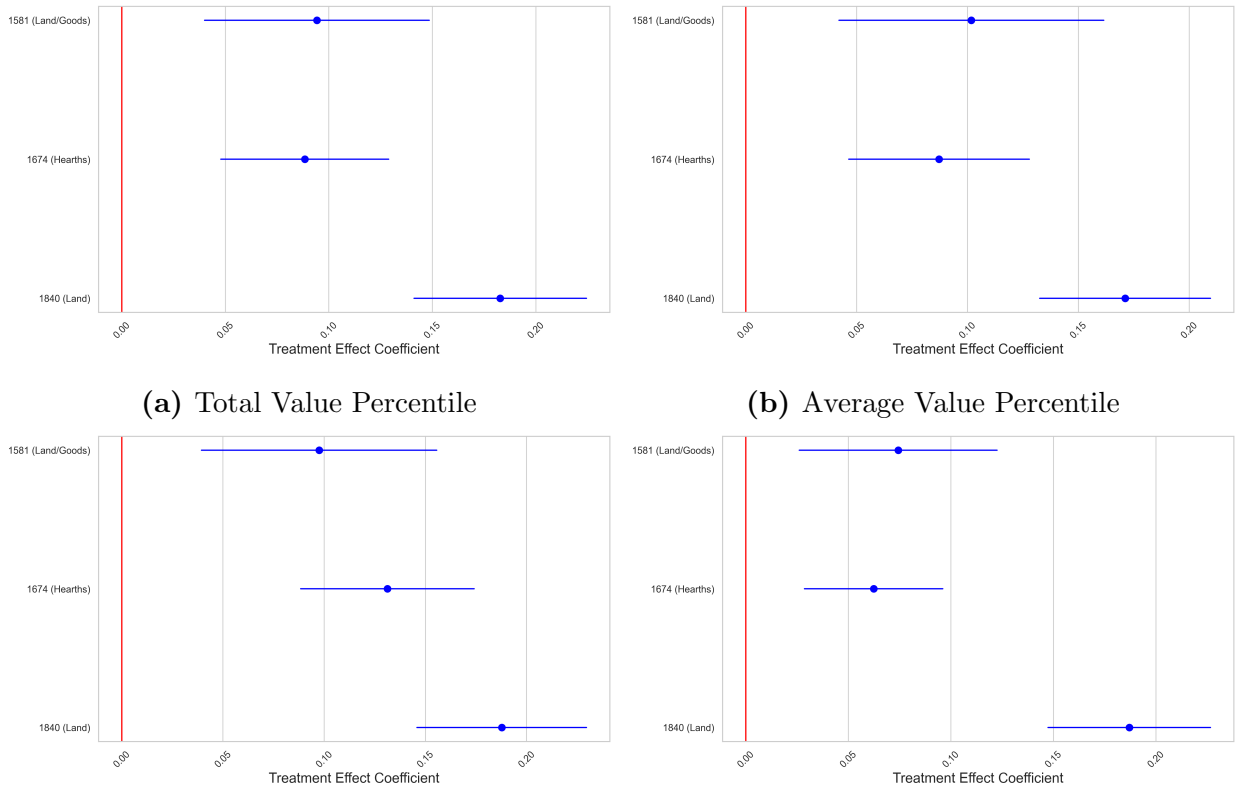
(a) Total Value Percentile

(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.17: Matching Estimator—Zeroes Removed



(a) Total Value Percentile

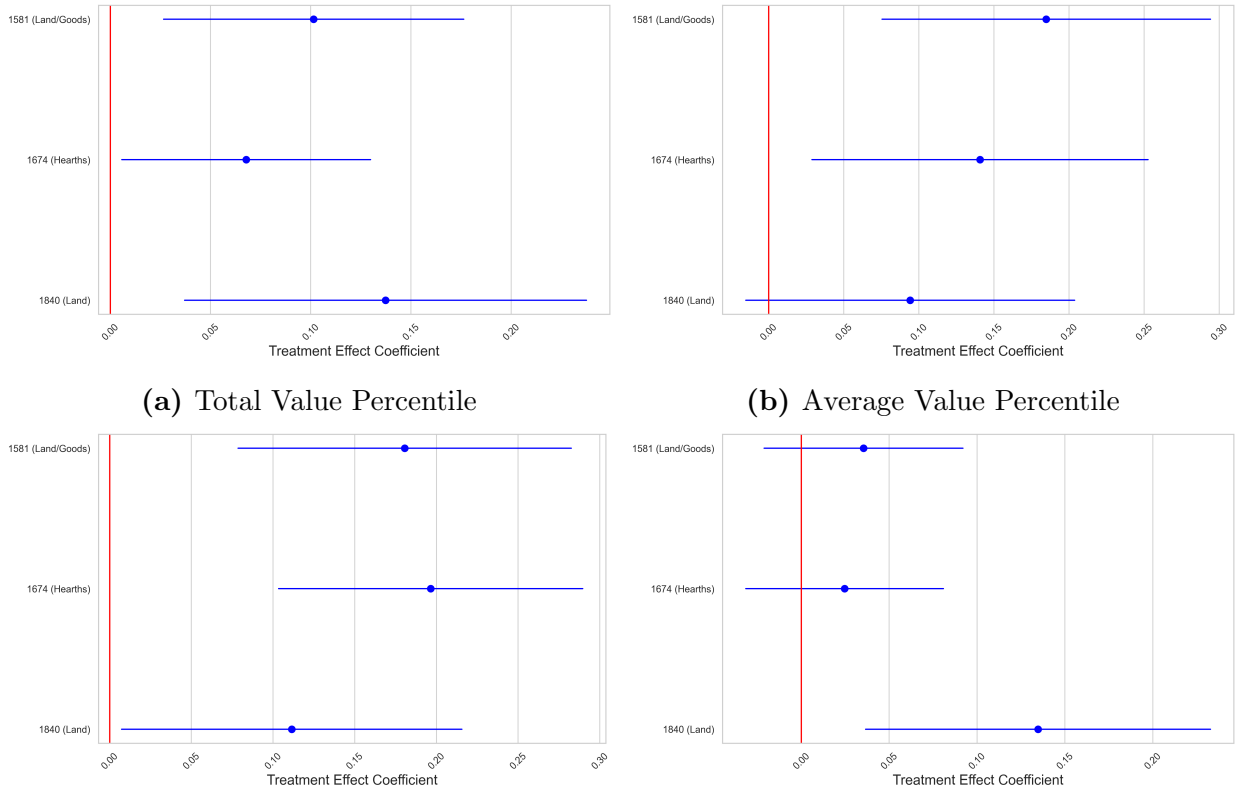
(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.18: TMLE Estimator—Zeroes Removed

4.9.3 Results With Adjusted Land Values



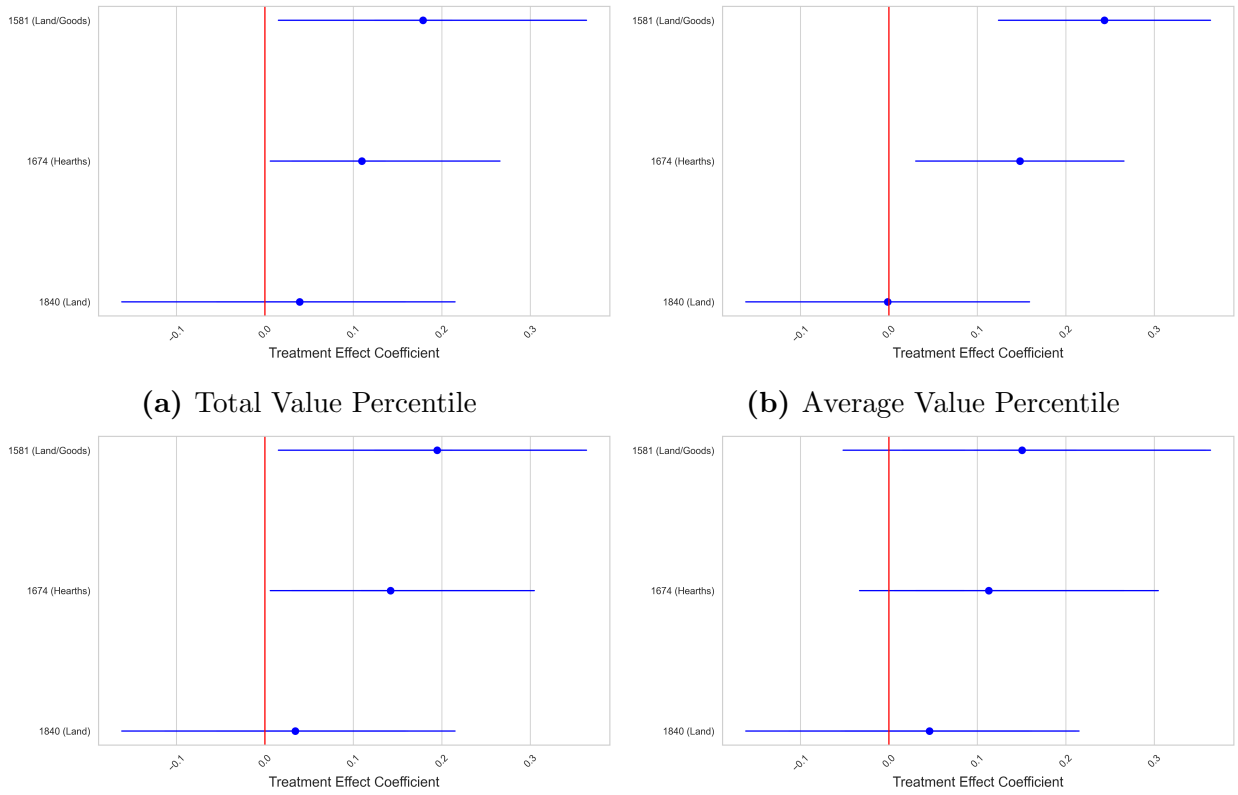
(a) Total Value Percentile

(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.19: Matching Estimator—Land Adjusted



(a) Total Value Percentile

(b) Average Value Percentile

(c) Maximum Value Percentile

(d) Count Percentile

Figure 4.20: Matching Estimator—Land Adjusted, Zeroes Removed

Chapter 5

Conclusion

In the first paper, I laid out the cornerstone of this thesis: a new dataset based on a stratified sample of the *Valor Ecclesiasticus*, a 1535 survey containing the itemized income and expenditure of each monastic house in England. By translating, entering, and georeferencing each item of income and expenditure, I created a series of directed lines that show the flow of money into and out of the religious houses of England on the eve of their destruction. This unprecedented detail on the monastic system will provide future researchers with a far more granular view than had previously been provided by either overviews of the system in the aggregate or case studies of individual monasteries.

I find that English religious houses before the Dissolution were profoundly economically integrated into their local communities, with the median pound of income coming from less than 8km away for all regions, less than a day's round trip from the monastery. While the income mixes of each monastery were determined far more by their order, I find that monasteries adapted themselves to their region through their expenditure, with regional variables predicting far more variation in expenditure mixes. I also find that the monastic system as a whole moved huge amounts of money from the countryside into urban and suburban areas. While most orders share this feature, the vast movement of wealth toward urban areas is driven overwhelmingly by the large and rich Benedictine monasteries, while

the Cistercians and Carthusians tended to move money *out* of urban areas. These results help to flesh out the contours of the monastic system at a far more granular level than ever before.

My results also help to confirm the work of traditional historians on the differing characteristics of different monastic orders. I find sharp differences in income sources between different orders, for the first time quantifying differences in both foundation patterns and institutional culture across the whole of England. My research confirms that the Cistercian order, known for settling in the "wilderness" and setting up far-flung monastic granges, really did draw a far greater proportion of its income from land and collected that income from much farther away. I also confirm that the rich and well-connected Benedictines both relied more heavily on transfers from other religious institutions and spent more on long-distance transfers than other monastic orders. The uniqueness of the Carthusian order, tightly bound by its conservative monastic rule, is also confirmed in my results, with the average Carthusian house having a far wider network than houses of any other order, sending and receiving large transfers of money over great distances.

The second paper examined the relationship between the Dissolution of the Monasteries and the Pilgrimage of Grace, long a subject of debate among historians of the Tudor period. By entering data for all Northern and Lincolnshire houses, creating a new dataset of rebellion muster sites, and modeling information flow across the North, I can provide the first econometric evidence in this long-running debate.

There are two main quantitatively testable schools of thought on the Pilgrimage: one emphasizes taxes and the other focuses on the economic impacts of the Dissolution. My results firmly support the latter. Across specifications, I find that monastic land is the strongest and most consistent predictor of rebel musters and rebellious gentlemen aside from population. When focusing only on "primary" musters where men joined the rebellion in large numbers for the first time, the effect of monastic land is even stronger. Adding in a model of information spread from the first outbreak of rebellion at Louth, I find that parishes

with monastic land were both more likely to rebel and did so sooner than parishes with less. Finally, by splitting monastic land between that more likely to be farmed with hired labor and that more likely to contain tenants, I find all of the predictive power in the latter. These results support one strand of the historiography of the Pilgrimage, most strongly advanced by Michael Bush, which emphasizes the fear of turnovers in tenancy and the loss of ancient tenant rights should monastic tenants be turned over to a secular landlord.

My final paper zoomed in to Devon to investigate the long-term consequences of the Dissolution. Using computer vision and machine learning, I created a new dataset of all Devon taxpayers in 1524, 1581, and 1674. Combining this with Tithe Commutation Map data from the 1830s and 40s and using a new neural network to identify English surname variants, I compared the fortunes of the families of monastic land purchasers to the fortunes of equally-wealthy families who did not purchase monastic land. I found that monastic land purchasers set their families up for centuries of higher wealth and status across a range of measures. These families had more aggregate wealth, more average wealth, higher numbers, and their richest branches were richer than those of families who did not purchase monastic land. Visible across a range of status-loaded name lists and in regression analysis of taxation documents, this persistent status advantage confirms previous work showing a shockingly low rate of social mobility until the modern era and shows the advantages accruing to landowners in an era of rising rents and falling real wages. This result also provides some evidence for the key role of the Dissolution in propelling the gentry to wealth and prominence.

Despite the benefits accruing to individual families, however, I found little evidence that the Dissolution led to structural economic change over the long term. While there was some evidence that monastic land is associated with an increase in tertiary employment at the parish level, these effects disappeared when moving up to the hundred level, a result inconsistent with genuine productivity gains from monastic land. The results for monastic land purchasers themselves were virtually nil, providing some evidence against any theories that run directly from the Dissolution to increased productivity through the buyers of monastic

land. These results support the view, advanced by agricultural historians and some historians of the gentry, that the roots of the English Agricultural Revolution lie outside the gentry and the Dissolution.

Taken together, the results of these three papers present a new and distinctly unheroic view of the Dissolution. The destruction of the religious houses of England was a massive economic shock and resulted in the redirection of hundreds of thousands of pounds of annual income and expenditure, destroyed a key source of poor relief, and ripped up the roots of institutions deeply rooted in their local communities. This social displacement, particularly the fear and uncertainty faced by monastic tenants, played an important role in producing the most threatening rebellion between the 1381 Peasants' Revolt and the Civil War. The sale of lands seized in the Dissolution provided a windfall for the Crown, allowing simultaneous invasions of Scotland and France. For a brief moment, the sale of ex-monastic land deepened the land market to almost twenty-first century levels, allowing a small group of buyers to set their families up for higher status. Both these buyers and the ex-monastic lands they gained, however, singularly failed to revolutionize the structure of the English economy and inaugurate long-term productivity gains. In this light, the Dissolution looks less like a watershed moment in English economic history and more like simply a larger version of any other grubby episode of expropriation: colossal displacement and trauma for those at the bottom affected by it, a huge but temporary windfall for the state, and the minting of a small set of new elites who would maintain their newfound privilege for centuries.

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