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Keywords: Trade, Commercialization, Market Integration, Horses, Medieval England, Medieval Economy, Economic History, Social History

JEL Codes: N53, N73, O31, O32, O33, Q12, Q13

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Abstract

This paper examines the role of demesnes – the farms of lords, as opposed to the lands of their peasant tenants – in the trade of agricultural horses in medieval England. The introduction of horse power is recognised to have been a major factor in the development of the medieval English economy, increasing labour productivity in farming and the efficiency of overland transport, but the infrastructures through which these animals were produced and distributed has remained poorly understood. This paper uses a national sample of over 300 manorial accounts from c.1300 to assess the role of demesnes in the production and distribution of working horses. It finds that demesnes were significant net consumers of horses, primarily relying upon the market for their supply. This illustrates that there was a well-established market for these animals by c.1300, but also that these large institutional farms did not breed enough horses to sustain their own demand, let alone a surplus that could have supplied the market. Demesnes (and their managers) did, however, fill an important distributive role in the trade of agricultural horses by acting, perhaps inadvertently, as ‘middle men’ in marshaling the various channels of work horse acquisition and dispersion.

Before 1200, oxen were the dominant work animals on both farms and roads in England. By the sixteenth century, however, horses had achieved almost total ubiquity in the world of work animals, especially in the more commercially-oriented south and east of the country.¹ This transition in animal power was significant for the medieval economy, as the premiums horses offered in terms of speed and power had critical implications for transport and market transactions, as well as agricultural production. The introduction of working horses allowed goods to be transported with greater efficiency while also helping improve agricultural output through increasing the speed at which basic tasks such as ploughing and harrowing could be completed. Critically, the introduction of horse power also facilitated more rapid circulation of money, through increased speed in transporting coins which were both bulky and heavy.² Improvement across all of these areas aided the processes of commercialization and market integration in medieval England.

Despite the important contributions that horse power made to the late medieval economy, the infrastructures through which these animals were produced and distributed remains poorly understood. This is largely because, for all its importance, the trade in horses could be very ‘slippery’, in the sense that it was so ubiquitous that it often evaded detection or record. Medieval historians have uncovered a wealth of information about some aspects of medieval horse exploitation, - such as their use in agriculture and transport³ - but our understanding of the supply and trade of the animals remains meagre.⁴ This article directly addresses such a gap in the literature and is the first direct study of the horse trade in medieval England. It uses a national sample of manorial accounts to examine the acquisition and dispersal of agricultural horses by seigniorial demesnes (i.e. the personal farms of lords as opposed to the lands of their tenants) and illustrates that these lordly farms – the great agricultural institutions of medieval England – were significant consumers of working horses but did not contribute in any significant way to the supply of these animals. However, landlords still had an important role in the trade of agricultural horses by acting, often incidentally, in a distributive capacity.

¹ John Langdon, *Horses, Oxen and Technical Innovation: The Use of Draught Animals in English Farming from 1066-1500* (Cambridge, Cambridge University Press, 1986), 255.

² Langdon, *Horses, Oxen*, 160; 270-272. Paolo Malanima suggests that two horses produced the equivalent power of three oxen. See: Astrid Kander, Paolo Malanima and Paul Warde, *Power to the People: Energy in Europe Over The Last Five Centuries* (Princeton: Princeton University Press, 2013), 51.

³ For additional work on application of horses in agriculture and transport, as well as the changing dynamic between oxen and horses see: John Langdon, “Horse Hauling: A Revolution in Vehicle Transport in Twelfth-and Thirteenth-Century England?” *Past and Present* 103 (1984), 37-66.

⁴ For example, Bruce Campbell commented in his authoritative work on seigniorial agriculture that “little is as yet known about the medieval horse trade.” Bruce M.S. Campbell, *English Seigniorial Agriculture 1250-1350* (Cambridge: Cambridge University Press, 2000), 126 n.45.

I

The seigniorial sector is the most well-documented component of England's late medieval agrarian economy. The records of medieval English landlords, who held between 25 and 30 percent of agricultural land in England,⁵ give us unparalleled insight into the characteristics and productivity of seigniorial agriculture.⁶ This article employs manorial accounts, a specific type of seigniorial document that recorded, in very high resolution, the business of lords' demesne farms. These accounts contain information ranging from rents received from tenants, the costs of repairs to buildings and farm implements, and wages paid to labourers, and, usefully, for our purposes, very detailed information on the types and number of animals kept on the farm and how they were acquired and dispersed on a year-to-year basis. The accounts are also very well standardized; they are largely consistent throughout the country and across time, both in the type of information they contain and the format of the documents themselves.⁷ The uniformity of the format and content of the accounts allows for easy comparison over time and place. This article uses a national sample of 322 manorial accounts from around the year 1300 containing data for about 2650⁸ horses. This sample covers much of the country and allows an examination of the ways in which demesnes acquired, managed and marketed agricultural horses in medieval England.

A sample of accounts was chosen concentrated on a relatively narrow range of years around 1300, effectively encompassing the decades of the 1290s and the 1300s.⁹ Since accounts normally ran from Michaelmas (29 September - the traditional end of the harvest) to Michaelmas of the following year, this meant examining accounts in the range from 1289-90 to 1310-11, resulting in a total span of twenty-two years. The sample was further narrowed

⁵ Bruce Campbell, *English Seigniorial Agriculture*, 26. The size of demesnes varied widely from estate to estate and manor to manor. Therefore, there is no 'usual' or 'standard' size of demesne. In a study of Hundred Rolls of 1279-80 from Huntingdonshire, Cambridgeshire, Bedfordshire, Buckinghamshire, Oxfordshire and Warwickshire, E.A. Kosminsky calculated that of over half a million acres under cultivation, 31.8 percent was demesne, 40.5 percent was villein land and 27.7 percent was held by free tenants. See: E.A. Kosminsky, *Studies in the agrarian history of England in the thirteenth century* (Oxford: Oxford University Press, 1956), 89. Bruce M. S. Campbell, "Benchmarking medieval economic development: England, Wales, Scotland, and Ireland, c. 1290", *EcHR*, vol. 61 (2008), 940; Campbell, *English Seigniorial Agriculture*, 58-60.

⁶ The divergence in both the practice and productivity of agriculture between seigniorial demesnes and the lands of peasant tenants has been well established. Research on the agricultural activity of peasants and how it differed from the seigniorial sector is on going. For examples see: Alexandra Sapoznik, "The productivity of peasant agriculture: Oakington, Cambridgeshire, 1360-99" Vol. 66, No. 2, 518-44; R.H. Hilton, *The English Peasantry in the Later Middle Ages* (Oxford: Oxford University Press, 1975), 13; Mark Bailey, "Peasant Welfare in England, 1290-1348." *EcHR* 51, no. 2 (1998), 228; Eona Karakacili, "English Agrarian Labor Productivity Rates Before the Black Death: A Case Study" *Journal of Economic History* 64, No. 1 (2004), 36; Stone, *Decision-making*, 267-86; Bruce Campbell, 'Constraint or constrained? Changing perspectives on medieval English agriculture', *Neha-Jaarboek voor economische, bedrijfs- en techniekgeschiedenis* 61, 19.

⁷ See: Richard Britnell, "The Winchester Pipe Rolls and Their Historians" in Richard Britnell, ed. *The Winchester Pipe Rolls and Medieval English Society* (Woodbridge: Boydell, 2003), 1; Bruce Campbell, "A Unique Estate and a Unique Source: the Winchester Pipe Rolls in Perspective", 30-31; Campbell, *Seigniorial Agriculture*, 27.

⁸ As the number of horses on any given manor changed over the year, the overall sample has two discrete totals: one for the beginning of the year, and a second for the end of the year. In this sample, the total beginning and end figures were 2591 and 2576, respectively.

⁹ Philip Slavin, as part of his on-going project of documenting and digitizing the entire corpus of manorial accounts from the 'direct farming' period in England, estimates that over 20,000 manorial accounts are extant, out of around 400,000 that were likely to have been created between 1270 and 1400. Philip Slavin, "The Sources for Manorial and Rural History" in Rosenthal, Joel T. Ed. *Understanding Medieval Primary Sources: Using Historical Sources to Discover Medieval Europe* (New York: Routledge, 2012), 135. Dr. Slavin, who is currently undertaking to collect and digitize all extant manorial accounts from the 'direct farming' period, now estimates that the figure for extant manorial accounts is closer to 25,000-27,000. Philip Slavin, Personal Communication, April 21, 2012.

by taking only one account per manor, normally that closest to the year 1300 (1299-1300 was the account-year normally preferred, if it survived), to ensure that no “double counting” occurred within the sample.¹⁰ The search for extant documents which fit within these parameters turned up over 500 manuscripts. Some of these accounts proved fruitless for the purposes of our study, usually in cases where the demesne did not stock any horses or the manuscript was too badly damaged. Further, only accounts which fully accounted for their horse stocks, with beginning and end-of-year figures as well as additions and subtractions, were deemed eligible.¹¹ The end result was a sample of 322 accounts, and hence manors, which form the basis of our examination of seigniorial involvement in the horse trade.

The sample is biased, due mostly to the imperfect survival of documents, towards the accounts of large ecclesiastical landlords. Lay landlords are generally under-represented and even those lay lords in the sample tend to be owners of large, institutional estates like those of the De Lacy and Clare families rather than smaller land owners. As Map 1 shows, the coverage of the sampled manors across the country is also uneven, being heavily skewed to the south and east of the country with notable ‘empty’ areas such as the forest area of the Weald south of London, the extreme southwest (Devon and Cornwall), and the northern and western areas of the country generally. However, this distribution correlates broadly with the distribution of population and levels of relative economic development at that time,¹² which means that our sample can be taken to be representative of the English economy as a whole.

Insert Maps 1 and 2 Near Here

II

In medieval England, agricultural horses were used for a number of purposes and were known under a variety of, predominantly functional, terms (Medieval depictions of some of these tasks are provided in Plates 1-3). Table 1 illustrates the distribution of horse types in the national sample. The horses most commonly found on demesnes were affers and stotts (*Affri* and *Stotti* or the singular *Affrus* and *Stottus* in the Latin), together comprising 55.8 percent of all horses in the sample. These horses have generally been categorized by historians as plough beasts, but could often serve ‘all-purpose’ roles, performing a variety of other tasks such as harrowing and even sometimes cartage.¹³ Chaucer’s Reeve is described as “sat upon a ful

¹⁰ Some exceptions were made if the nearest surviving account to 1300 was in obviously poorer shape than one a little further away in time, or if there was a convenient printed edition available for an alternate year, as in the excellent edition of the 1301-2 bishopric of Winchester pipe roll: *The Pipe Roll of the Bishopric of Winchester 1301-2*, edited Mark Page (Winchester; Hampshire Record Series, vol. 14, 1996).

¹¹ Some accounts, especially in cases where the account covers less than a full year, simply have a livestock ‘inventory’, which is not useful for this study. For example, six such inventories are extant from Durham Priory manors for the year 1302. See: Richard Britnell, ed., *Durham Priory Manorial Accounts 1277-1310*. The Surtees Society Vol. 218 (Woodbridge: Boydell, 2014), 200-208.

¹² Bruce M. S. Campbell, “Benchmarking medieval economic development: England, Wales, Scotland, and Ireland, c. 1290”, *Economic Hist. Rev.* 61 (2008), 896-948 (including corrigendum), esp. Table 14, col. C (p. 926).

¹³ The general trend in the literature has been to use a binary understanding of agricultural horses, assigning them to one of two categories: cart-horses or plough-horses. While we do encounter specifically-named “cart-horses” in the accounts (*equi carectarii*), the singular term of “plough-horse” was not actually part of the contemporary nomenclature. Rather, the term “plough-horse” is an umbrella term that has been used by historians to describe all non-cart-horses, most frequently affers and stotts but also *equi*. Thus, the binary understanding of *equus carectarius* as ‘cart-horse’ and *affrus* and *stottus* as ‘plough-horse’ is too simplistic and

good stot” in the general prologue of the *Canterbury Tales*,¹⁴ suggesting that they were also employed from time to time as riding animals. Stotts are found only in the records of South-east England and East Anglia, but the distinction between these and affers was largely nominal, down to institutional custom or perhaps even managerial or scribal preference.¹⁵

Cart-horses were named explicitly in the accounts as *equi carectarii* (or the singular *equus carectarius*). Nationally, these comprised 15 percent of all horses on English demesnes, but a few estates kept considerably higher proportions. For example, they comprised over one third of all horses on the Midlands estate of Peterborough Abbey.¹⁶ These were more specialized than affers and stotts and this is reflected in their higher prices.¹⁷ Many cart-horses may have been stronger, fitter and generally more robust than other types of horse, but much of their value was also due to a significant skill premium, added through a combination of superior temperament and additional training.¹⁸ Affers and stotts were most frequently employed drawing ploughs and harrows, and while skill was required by both the beasts and the ploughmen, usually a team of two, one *tentor* holding the plough and a second *fugator* urging the horses on with a whip, there was more margin for error on the field than on the road. Cart-horses, on the other hand, needed to be trusted with precious cargo in busy environments on roads and in markets. An uncooperative or flighty plough-horse may make for slow and laborious work, but a skittish cart-horse could be far more costly. While cart-horses were most often male, and the terms ‘affer’ and ‘stott’ could be used to describe both male and female horses (in these cases the Latin term *affra* is used),¹⁹ female horses were more often referred to less ambiguously as *jumenta* (literally ‘beast of burden’ in Latin) and clearly understood in the context of the accounts as ‘mares’ or ‘female horses’. These female horses comprised 10.2 percent of the sample.²⁰

should be avoided. For example, in the generally excellent translation of the 1301-2 Winchester Pipe Roll, editor and translator Mark Page used the above binary understanding in translating the terms *equus carectarius* and *affrus*. However, the manor of Taunton in Somerset, recorded no *equi carectarii* in 1301-2, but began the year with 2 *affri*, added one further *affrus* during the year, and ended the account with a total of 3 *affri*. The purchased *affrus* is accounted for in the ‘cost of carts’ section as “In one horse purchased for the cart 17s.” In this case, translating *affri* as ‘plough-horse’ is incorrect, as at least one was being employed on the demesne as a cart-horse, or at least a multi-purpose animal which fulfilled a variety of tasks. A similar situation is found of the Winchester manor of Bishopstoke, where the lone affer purchased in 1301-2 was described in the ‘cost of carts’ section as “1 mare purchased [for] 8s. 7d.” The affers/stotts employed on the manors of Norwich Cathedral Priory were also ‘all-purpose’ draught horses. See: Philip Slavin, *Bread and Ale for the Brethren* (Hatfield: University of Hertfordshire Press, 2012), 85.

¹⁴ *The Riverside Chaucer*, 3rd edn., ed. Larry D. Benson (Oxford: Oxford University Press, 2008; originally Boston: Houghton Mifflin, 1987), 33, line 615.

¹⁵ John Langdon has argued that there was little difference between stotts and affers, with ‘stott’ simply being an alternative term for the same type of horse. Our data supports this view. For a disambiguation of medieval horse types see, Langdon, *Horses, Oxen*, 293-7.

¹⁶ Kathleen Biddick, *The Other Economy: Pastoral Husbandry on a Medieval Estate* (Los Angeles: University of California Press, 1989), 118.

¹⁷ The variation in prices of agricultural horses is outside the scope of this article, but for discussion on this see: Jordan Claridge, *The Trade of Agricultural Horses in Late Medieval England*, PhD Thesis 2015, 198- 219 esp. Figures 5.1 and 5.2.

¹⁸ *Ibid.*, 207-8, 215.

¹⁹ In many cases, other contextual information from the accounts must be used to determine the sex of affers and stotts. In most cases the Latin used in the accounts was highly abbreviated and left out the endings of the terms which could otherwise be used to determine the sex of the animal in question.

²⁰ In terms of a sex ratio, the absolute proportion of female horses in our sample is underestimated if calculated using only the categories above. This is due to the fact that, while some manors were in the habit of providing a sex breakdown of horses in the end-of-year total, this practice was not universally adhered to. Many female horses were often simply lumped into the general categories discussed above, particularly among affers and stotts. In some instances, scribes provided explicit categories for female horses, such as on the four

At 16 percent, a significant proportion of demesne horses were juvenile animals. Young horses were almost universally referred to with the term *pullanus* (plural *pullani*); this word is often translated as ‘colt’²¹ but is likely better understood as ‘foal’, as the use of the term often encompasses young horses of both sexes. These terms were at times used in a confusingly interchangeable way in the accounts themselves, and in these instances one must look further into other sections of the account to determine the sex of such animals.²² Manors containing a sufficiently large number of young horses often categorized them according to age, with animals born that year (*de exitu*, literally “of issue”) separated from those in their second and third years. Horses above three years of age were usually graduated to one of the adult categories, such as affers, mares or cart-horses.²³

Small numbers of other horses types round out our sample. Rounceys (*runcini*) were primarily riding horses and appear infrequently among agricultural stock. Occasionally, however, they had roles on the manor as packhorses or harrowing animals.²⁴ Four animals were defined specifically as “mill horses”; these animals were either used as engines for horse-mills or used as delivery animals at wind or water mills. For example, the Bishop of Winchester’s manor of Farnham in Surrey kept three mill-horses to drive the manor’s two horse-mills,²⁵ while another of the Bishop’s manors kept a single mill-horse, but this beast was seemingly used as a pack animal working at the manor’s water mill.²⁶ Finally, there are very rare references to stallions (*stallones*). These animals are generally found only on manors engaged in the breeding of *runcini* or other more elite horses, such as Isabella de Fortibus’ *equitium*, or stud farm, at Holderness in Yorkshire and are not a feature of the typical medieval English manor. A few accounts also list horses simply under the general term of “*equus*”, but this seems to have been an institutional nomenclature used primarily by the monks of Westminster Abbey,²⁷ as of the twenty-four demesnes in our sample which record *equi*, eighteen were manors of the abbey. These horses were also all-purpose animals similar to the affers and stotts. The *equi* found on the Kentish manor of West Cliffe were

Yorkshire manors of Little Humber, Holderness, Easington and Burstwick which used the category “*pullani feminae*” to denote female foals. See: Little Humber: TNA SC6 1079/15, m. 4r-4d; Holderness: TNA SC6 1079/15 m.5d; Easington: TNA: SC6 1079/15 mm. 2r; Burstwick: TNA: SC6 1079/15 m. 7r-7d. In other instances, specific categories like “cart mare” (*jumentis [sic] caretar[i]*) and “mare of the mill” could be used; in these cases, the specific categories were likely employed because female horses were being used for work typically associated only with male animals. See: TNA SC6 1039/11 m. 1r-1d.; Page, *Winchester Pipe Roll*, 199. Using the end-of-year data that we do have, we can measure a minimum degree of female under-representation, finding that at least 108 of the 1069 affers in our total sample, or just over 10 percent, were female.

²¹ For example, Page, *Winchester Pipe Roll*, passim.

²² The term *pullanus* is one of the few not discussed in Langdon’s appendix. Latham’s *Revised Medieval Latin Word List* gives both ‘colt’ and ‘foal’ as possible translations, and indicates that *pultrella* had been used in 14th century documents to describe fillies (generally understood as female horses under the age of four or five years), although this term is not found in any of the accounts in our sample. See: R.E. Latham, ed. *Revised Medieval Latin Word List From British and Irish Sources* (Oxford: Oxford University Press), 382. One example of the term *pullanus* encompassing young horses of both sexes is Downton manor, on the Bishop of Winchester’s estate, where of three *pullani*, one was promoted to cart-horses that year, while the other two were promoted to mares. See: Page, *Winchester Pipe Roll*, 69.

²³ This progression is clear from studying the stock sections of manorial accounts. The pattern has also been observed by David Stone in his detailed analysis of the manor of Wisbech Barton. See: David Stone, *Decision-Making in Medieval Agriculture* (Oxford: Oxford University Press, 2005), 114.

²⁴ Langdon, *Horses, Oxen*, 34, 296.

²⁵ Page, *Winchester Pipe Roll*, 212, 216.

²⁶ *Ibid.*, 196-7.

²⁷ At least with respect to manorial accounts. The term ‘*equi*’ is also found in lay subsidy returns and manorial court rolls. See: Jordan Claridge, *The Trade of Agricultural Horses in Late Medieval England*, PhD Thesis 2015, 114-121, esp. Table 3.1.

used for harrowing²⁸ and the two *equi* on the Berkshire manor of Bray were put to “diverse jobs of London”.²⁹

Insert Plates 1-3 Near Here

III

Regional patterns of demesne horse ownership can be examined more closely by dividing our main sample into five geographical regions: East Anglia, the North, the South and south-west and the Thames Basin (see Map 2).³⁰ Some striking differences in the makeup of demesne horse stocks are immediately apparent; Table 2 illustrates this regional variation.

Many regions had a dominant type of horse which comprised a clear majority. On a national level, affers and stotts were the most common type of horse kept by demesnes. Regionally, however, there was significant variation in the numbers of these, ranging from only 18.9 percent in the North to around 70 percent in East Anglia (16.4 percent affers + 56.5 percent stotts = 72.9 percent total) and the Thames Basin (22.9 percent affers + 45.9 percent stotts = 68.8 percent total), respectively. These regions correlate broadly with those areas of the country which had embraced the move to horse ploughing from ox traction most thoroughly over the preceding century.³¹ The North and Midlands regions stand out in our sample as having significantly fewer affers and stotts, and this is likely explained by the predominance of ox ploughing which persevered in those regions well into the fourteenth century.³²

Proportions of cart-horses were relatively evenly distributed throughout the country, except for the North where only four animals were found. Outside of the North, few regions deviated significantly from the national average of 15 percent in terms of cart horse ownership. At 19.1 percent, the proportion of these animals is slightly higher in the Midlands, but this is a function of the many cart-horses kept by Peterborough Abbey, as this estate comprises a significant proportion of the overall sample for the region. Perhaps what is most surprising is that demesnes in the more commercially-oriented regions of East Anglia and the Thames Basin do not have significantly higher proportions of cart-horses, as, intuitively, one would assume that the employment of such specialized animals should have been most lucrative in these regions.

The North stands out for having a much higher proportion of mares (33.3 percent) and young horses (45 percent) than any other region, and this could be indicative of more active horse breeding in this part of the country. However, given the small size of our northern sample,

²⁸ TNA SC6 889/8; 889/9.

²⁹ [A] *d operum diversum de London*, PRO SC6 724/4 mm. 5.

³⁰ The regions are defined as follows: East Anglia: Cambridgeshire, Huntingdonshire, Norfolk, Suffolk; The Thames Basin: Bedfordshire, Berkshire, Buckinghamshire, Essex, Hertfordshire, Kent, Middlesex, Oxfordshire and Surrey; The South and South-west: Cornwall, Devon, Dorset, Hampshire, Somerset, Sussex, Wiltshire; The Midlands: Cheshire, Derbyshire, Gloucestershire, Herefordshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire, Rutland, Shropshire, Staffordshire, Warwickshire and Worcestershire; The North: Cumberland, Durham, Lancashire, Northumberland, Westmorland and Yorkshire. Dividing the country into such regions involves some judgment calls. For example, Essex could easily (and often is) considered part of East Anglia; however it was economically more closely tied to London and the Home Counties and has been included in the Thames Basin region here.

³¹ Langdon, *Horses, Oxen*, 110-111.

³² *Ibid.*

the significance of this particular finding is unclear especially as many of these young horses (and any associated breeding activity) came from a single locality; the high proportion of young horses was bolstered by sixty-two young *runcini* kept at the Earl of Lincoln's stud farm in Ightenhill in Lancashire.³³ The stud farm also inflated the proportion of mares in the region. While these riding horses were unlikely to work on the demesne, they were still an important part of the earl's manorial enterprise, in that he devoted limited resources to the production of riding horses.³⁴ Looking at the estate's pastoral enterprise, Atkin has argued that the Lincoln estate was "geared towards a cash economy", especially in terms of the many cattle produced and sold by the many vaccaries (cattle rearing farms) on the estate.³⁵ The earl was seemingly in the process of extending this strategy to include horse breeding in the late thirteenth and early fourteenth centuries. In 1295-6, the year sampled for this study, the *runcini* breeding operation was not yet producing any animals for sale on the market. However, by 1304-5, the next year for which accounts survive, the Ightenhill stud farm sold 17 young *runcini* stallions, suggesting an upward trajectory for the earl's stud farm.³⁶ However, contrary to a previous argument extended about the horse breeding activity on this particular manor,³⁷ the horses raised here were not used to produce working/traction animals for the earl's demesnes, but rather more 'elite' riding horses.

After the North, mares and young horses were most prominent in the Midlands, where 25.7 percent of total horse stocks in those regions were young animals. These figures are, however, again skewed by anomalous practices on other *runcini* stud farms, these of Peterborough Abbey, as the demesnes of this estate make up a significant portion of the Midlands subsample. Proportions of young horses in East Anglia and the Thames Basin are low, accounting for only 6.2 percent and 4.8 percent of total stocks in those regions. Young horses comprised 11.4 percent of stocks in the South and South-west; this region seems to be a middle ground between areas where young horses were scarce, East Anglia and the Thames Basin, and where they were more plentiful, in the North and in the Midlands. Breeding will be discussed in more detail below, but at this point the data suggests that areas which were home to a high proportion of young horses, like the Midlands and the North were more actively breeding horses, while the Thames Basin and East Anglia, by this metric, were seemingly less engaged in horse breeding.

³³ If the sixty-seven *runcini* foals are removed the total number of young horses falls to sixty-seven from 129, or from 52.4 percent to 27.2 percent

³⁴ For example his expansive cattle raising activity spread across twenty-seven vaccaries on his estate. See: M.A. Atkin, "Land Use and Management in the Upland Demesne of the De Lacy Estate of Blackburnshire c. 1300" *Agricultural Hist. Rev.* 42 (1994), 2.

³⁵ *Ibid.*, 1,2.

³⁶ A similar pattern is observed for the estate's vaccaries, which initially provided only a modest supply of cattle to local markets, but by the middle of the thirteenth century grew to much larger operations. Campbell, *Seigniorial Agriculture*, 140.

³⁷ Edward Miller Argued that the earl's stud farm at Ightenhill "provided many of the horses needed by the earl's manors and household." However, a close examination of two extant accounts for the earl's estate (for 1295-6 and 1304-5, the former is contained in the national sample) shows that none of the horses bred ever trickled down to work on the demesnes. A small number of rouncies (*runcini*), however, were transferred from Ightenhill to other manors on the estate in 1295-6. See: Edward Miller, 'Northern England' in H.E. Hallam, ed. *The Agrarian History of England and Wales Vol. II, 1040-1350*, 409; Ightenhill account 1295-6: TNA: DL 29 1/1, m. 3; Ightenhill account 1304-5: TNA: DL 29 1/2, m. 8.

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IV

We can get a sense of the market for work horses by analyzing how these farms acquired their working animals. For this we focus only on external methods of procurement, ignoring the animals circulating within manorial or estate stocks.³⁸ As illustrated in Figure 2, we can see that demesne managers used an array of methods to acquire working horses. Common sense would lead us to suppose that breeding and rearing work horses, which I refer to as ‘internal production’, was an important source of animals.³⁹ After all, breeding programmes could have provided demesnes with (comparatively) cheaper horses than those purchased at market by cutting out any price premium that horse dealers or other middlemen would add in making their own profits.⁴⁰ As we have seen above that mares and foals accounted for a significant proportion of horse stocks on English demesnes, especially in the Midlands and the North, the internal breeding of horses was something that demesne managers could ostensibly have controlled quite closely; and as horses played a central role in the agrarian enterprise of many demesnes, then it is logical to suppose that landlords and their reeves were committed to ensuring their manors possessed a secure supply and a robust stock of horses from an internal breeding programme. The anonymous author of the 13th-century agricultural treatise *Husbandrie* commented on breeding rates, asserting that demesne mares should produce one foal each year; in cases where this target was not met, demesne managers were to provide specific reasons for the shortfall:

The reeve ought to answer for the issue of the mares of the manor, that is to say for each mare one foal in the year. And if there is any mare which has no foal an inquiry ought to be made whether this is due to bad keeping or lack of food, too much work or through lack of a stallion, or whether the mare is barren and that the reeve could have changed her – and in time – for another but did not do so. In these cases he [the reeve] ought to be charged fully for the foal or the value.⁴¹

However, contrary to the suppositions of common sense, and despite the advice of the author of the *Husbandrie*, our data reveals that the proportion of internally-bred horses was actually quite small; across all the sampled demesnes, only fifty-nine horses were bred internally, accounting for 13.2 percent of total additions. Not only did internally-produced horses trail

³⁸ In addition to the 448 horses added to the demesnes, a further eighty-one animals were transferred internally. In these instances, the lord was not acquiring new animals, but was simply manipulating his stocks across all or part of his estate to ensure that each manor, and, in the case of categorical reclassifications, each category, had a requisite profile of horses.

³⁹ “Internally-produced” horses are defined as horses which were ‘graduated’ to the pool of adult working horses from the demesne’s group of young horses.

⁴⁰ For a thorough discussion of horse dealers in the early modern period see: Edwards, *Horse Trade*, 77-104. For an examination of horse dealers and other ‘middlemen’ in the trade of elite horses in medieval England, see Jordan Claridge, *Horses for Work and Horses for War: The Divergent Market for Horses in Late Medieval England*, MA Thesis, 53-71.

<https://era.library.ualberta.ca/files/f7623d04x/Thesis%20Final%20For%20Binding.pdf>

⁴¹ Dorothea Oschinsky, ed. *Walter of Henley and Other Treatises on Estate Management and Accounting* (Oxford: Oxford University Press, 1971), 423.

behind purchased animals by a margin of 45 percent, but internal breeding was actually only a tertiary method of horse acquisition at the national level. When these factors are considered, it seems that demesne horse breeding was a ‘hit and miss’ endeavour, hampered by the poor health and sterility of overworked mares and perhaps also the incompetence or indifference of reeves and other demesne managers in swapping out infertile mares for more viable animals quickly and efficiently.⁴²

We can also see significant regional differentiation in demesne horse breeding. The South and South-west and the Thames Basin stand out for how *unimportant* it was, as internally-produced horses account for only 9.9 percent in the former region and 6.1 percent in the latter. In the Thames Basin, the low numbers of internally-produced work horses correspond broadly with the low proportions of mares and young horses kept by demesnes in the region; here the numbers of mares and foals relative to other types of horses were lower than any other part of the country and the region produced the fewest of its own horses. Breeding was most prolific on Midlands demesnes, with over a quarter of all horses graduating to the adult stocks from the demesnes’ own young horses. By the seventeenth century, horse breeding and rearing were thriving economic activities in this region,⁴³ with the Severn Valley and the Vale of Trent both home to intensive breeding and rearing of horses.⁴⁴ Our data suggests that this characteristic was already established in the region by the fourteenth century. It is difficult to say whether a relatively weak market for horses forced demesnes in this region to rely on internal production, or if the geography of the region was more suited to profitable horse rearing which diminished the need to rely as heavily on the market as demesnes in other regions did.

For demesnes, the secondary source of horses was actually seigniorial perquisites, an array of channels such as heriots, strays and, in some cases, the confiscated chattels of criminals, through which many demesnes were able to procure working animals. Heriots were a death duty, customarily rendered in the form of a ‘best beast’ upon the death of a villein tenant, or in some places, upon any surrender of customary land.⁴⁵ The high value of horses relative to other forms of livestock meant that they were often regarded as a deceased tenant’s most valuable animal and thus rendered as payment. In terms of horse acquisition, heriots were the most productive perquisite for demesnes, accounting for 58 percent of all such seigniorial acquisitions (and therefore 10.5 percent of all horse procurement). However, there was quite a bit of regional variation as the rate at which horses became available to demesnes through heriots was obviously not within the manor’s control. There was no guarantee of the number of tenant deaths in any given year, nor that the ‘best beast’ would always be a horse: many heriots were in fact fulfilled with oxen; and the Bishop of Winchester also received heriots of beehives and axes in 1301-2, an indication that some of his tenants lacked not only a horse (or

⁴² For example. The reeve of Merdon, a manor of the Bishop of Winchester, recorded in the account for 1301-2 that there were no foals born that year “because there are no mares here.” The reeve of Ivinghoe, in Buckinghamshire, was seemingly more proactive in maintaining productive breeding stock, as the manor’s account reads that there were “no foals this year because the female plough horses were feeble and sold”; For Morton, also in Buckinghamshire, the account records that there were no foals that year simply because “the mares did not foal”. See, Page, WPR, 84, 158. The account for the Warwickshire manor of Fletchamstead records that all of the mares remaining at the end of the 1309-10 year were sterile. TNA:SC6 1039/11 m. 1r.-1d. Frequent infertility among demesne mares is also a phenomenon observed by Stone for the manor of Wisbech Barton. See: David Stone, *Decision Making in Medieval Agriculture* (Oxford: Oxford University Press, 2005), 114.

⁴³ Peter Edwards, *The Horse Trade of Tudor and Stuart England* (Cambridge: Cambridge University Press, 1988), 23.

⁴⁴ *Ibid.*, 22.

⁴⁵ Mark Bailey, *The English Manor c.1200-c.1500*. (Manchester, Manchester University Press, 2002), 244.

an ox), but any kind of livestock at all.⁴⁶ The collection of heriots also depended upon administrative efficiency, the number of liable tenants and local custom. In some places custom dictated a cash payment in lieu of a ‘best beast’ and in others, the payment of death dues was seemingly either rarely enforced, evaded through a variety of measures, or rendered by incoming rather than outgoing tenants.⁴⁷ That said, many demesnes in our sample clearly received significant numbers of work-horses as heriots and added them to their own stock, rather than accepting a cash equivalent.

Another seigniorial source of horses was strays and waifs. The origin of these so-called ‘stray’ horses is somewhat of a mystery, as manorial accounts do not provide any information about the origins of these animals. Were they wild or feral horses that were captured for subsequent use as draught animals? Or were they ‘stray’ in the modern sense of the term, that is, fully domesticated animals that had wandered off from their owners?⁴⁸ While there is some anecdotal evidence that supports the former possibility,⁴⁹ the latter situation is more likely. The fourteenth-century legal treatise *Britton* lays out in great detail the mechanisms by which stray, or waif animals could be impounded, and if left unclaimed, seized by certain lords, provided they met certain eligibility requirements.⁵⁰ Given the fourteenth-century origins of this particular treatise, it is likely a good reflection of the legal ramifications surrounding the issue of strays for our data sample. Like heriots, this was a regionally varied phenomenon, but still accounted for 36 percent of horses acquired through perquisites nationally. The significant role that seigniorial perquisites played in the overall scheme of demesne horse acquisition is striking, because it indicates the extent to which demesne acquisition of horses was dependent upon variable and unpredictable sources largely outside the control of the estate. Neither the number of horses acquired through these sources, nor their quality, could be guaranteed. Thus the uncertainty of acquiring horses through seigniorial perquisites compounded the uncertainty of breeding horses on the estate, which may suggest why these demesnes were so dependent upon the market if it was to ensure that it maintained a consistent level of working animals.

Regional differentiation in levels of seigniorial perquisites is at least partially explained by the fact that heriots were seemingly not rendered uniformly across the country. At 33.6 percent of all acquisitions, the proportion of seigniorial perquisites was higher in the South and South-west than in any other region and was driven by the large number of heriots exacted by manors in this part of the country. Thirty horses were taken as heriot, and these would have accounted for 23 percent of total acquisitions on their own, double the proportion added from internally-bred animals. In the Thames Basin, seigniorial perquisites was the second most significant method of horse acquisition, but it was not an overly significant, as only nineteen animals, or just under 13 percent, were acquired in this way. East Anglian and Midland demesnes relied less on this method of horse procurement. The conspicuously low number of heriots rendered on the East Anglian manors in our sample likely pulled down the total

⁴⁶ Page, *Winchester Pipe Roll*, 153, 305.

⁴⁷ See discussion of heriots in East Anglia below.

⁴⁸ A variety of Latin terms were used to describe stray horses in manorial accounts, and the terminology could vary from region to region. In the accounts studied here, the most common terms encountered are the Latin *vagabundus* and the anglicized *stray*. For a definition of the former see: Latham, 504.

⁴⁹ See: Jordan Claridge, *The Trade of Agricultural Horses in Late Medieval England*, PhD Thesis 2015, 82-4.

⁵⁰ The right of strays, or waifs, was the right held by some lords, under certain circumstances, to seize stray or wandering animals. After the requisite conditions were met, usually involving keeping the animal for a year and a day, the animal became the property of the lord and could either be added to the demesne livestock or sold. F.M. Nichols, ed. and trans. *Britton: The French Text Carefully Revised with an English Translation Introduction and Notes*. 2 vols. (Oxford: Oxford University Press, 1865), 66-67; 216.

number of horses enumerated in the Seigniorial Perquisite category. The limited contribution of heriots here is surprising, considering that horses constituted as 75% of all peasant draught animals in East Anglia by c. 1300.⁵¹ However, large estates like Norwich Cathedral Priory, which owned twelve manors within the East Anglian sample, recorded no horse heriots on its demesnes. East Anglian landlords seemingly did not collect heriots following the deaths of customary tenants in any great quantities.⁵² It is possible that ‘light-touch’ villeinage in this region meant that heriot was not payable on some manors, but more likely that tenants routinely rendered cash payments as heriot in lieu of livestock, and that tenants avoided heriot through a variety of local customs and practices.⁵³ Northern demesnes collected no horse heriots at all, although the small and narrow sample size there may not be representative in this regard.

The other major source of seigniorially-acquired horses was strays. Given the regional differentiation in the number of stray and waif horses rendered across the country, the data suggests that a lord’s right to impound and seize stray animals was enforced more frequently and strictly by some lords than others. Some lords may not have possessed the requisite privileges that would allow them to acquire strays or heriots, as the ability to obtain horses through seigniorial perquisites depended in many cases on whether or not the lord held a franchise that allowed them to seize stray or waif livestock. The right to execute felons was also a franchise held by only a few lords, and this would have been necessary in order to claim the chattels of hanged thieves, for instance. The right to claim heriots was the most ubiquitous amongst landlords, but even if most lords were entitled to the beasts of their tenants, local custom often mitigated against the right to heriots materializing as demesne work-horses.

Buying horses was by far the most important method of horse acquisition; of the 448 adult horses acquired by all demesnes in our sample, 259, or 57.8 percent, were purchased on the market. This magnitude of purchased horses is significant in that it clearly indicates that there was a strong market for these animals and can also be seen as an indication of a high degree of commercialization in this sector of the economy. Regionally, the purchase of horses was also the dominant method of acquisition in each of the regions, and this trend was especially pronounced in East Anglia and the Thames Basin, which stand out, in terms of work-horses, as the most market-oriented parts of the country with over 70 percent of animals in both regions acquired via purchase. Purchasing was somewhat less dominant in the South and South-west,⁵⁴ where only 48.9 percent of horses were bought, and was weakest in the Midlands, where only 36.9 percent of new horses were purchased. In this latter region, horse acquisition was more evenly distributed across the full array of procurement routes, which reflects a combination of a greater amount of breeding and rearing activity on demesnes in this part of the country where the market was seemingly comparatively weaker. The low

⁵¹ Langdon, *Horses, Oxen*, 205.

⁵² Langdon observed a low number of post Black Death heriots in East Anglia. See: Langdon, *Horses, Oxen*, 196-7. In her study of land transfers in late medieval Norfolk, Jane Whittle also observed that no heriots were paid by outgoing tenants on any of the manors she studied in Norfolk. She suggests that in both Norfolk and Suffolk heriots were either paid by the incoming tenant instead of an entry fine, or no heriot was paid at all. This seems to have been a regional anomaly in East Anglia, as in most other places in England, the lord charged heriot to the outgoing/deceased tenant as well as an entry fine to the incoming tenant. See: Jane Whittle, *The Development of Agrarian Capitalism: Land and Labour in Norfolk 1440-1580*. (Oxford: Oxford University Press, 2000), 67, n.108.

⁵³ Mark Bailey, “Villeinage in England: A Regional Case Study” *EcHR* Vol. 62, No.2, pp. 430-457.

⁵⁴ The South and south-west region also includes Devon and Cornwall, but there are no demesnes from either of these counties in our sample.

number of acquisitions in the North, a function of the small sample of only thirty-five demesnes, makes it difficult to make any significant conclusions about acquisitions in the region, and therefore will not be discussed at length.

At the national level, the supply of working horses followed a clear hierarchy. Almost 60 percent of agricultural horses were sourced via the market. The next most significant avenue or procurement was the portfolio of seigniorial methods of acquisition open to some landlords. The internal breeding of working horses was the tertiary option, and provided only 13.2 percent of all working animals. Patterns of horse acquisition also varied considerably from region to region. The market for horses was strongest in the Thames basin and East Anglia, and significantly weaker in the Midlands. The market was also a less important source of horses in the North, and therefore less established there, but our data sample for that region is too small to be certain. In places where demesnes relied more heavily upon internally-bred horses, such as the Midlands, it is likely that the region was more suitable for horse breeding and rearing than other regions, and that market forces were comparatively weaker. With London at its centre, the Thames Basin was the most commercially active region of the country, and the profile of horse acquisitions suggests that, under these conditions the national trend of purchasing working horses rather than breeding them was most pronounced. In the South and South-west, just under half of all adult horses were acquired through purchase, and one third were funnelled to the demesne through seigniorial perquisites; only the Thames Basin produced fewer horses internally. Here, the patterns of acquisition mirrored the national average most closely of all the regions. It seems that perhaps the commercial orientation we have postulated for the Thames Basin and East Anglia was also a factor for demesnes in this region, but was more modest in its effects on horse procurement. The fact that fewer horses were purchased in the South and South-west, than in London's hinterland, could have also been due to the seemingly abundant flow of heriots and other perquisites into demesnes in the region which provided significant numbers of animals and reduced the need to go to the market.

The distinct preference of demesnes in East Anglia and the Thames Basin to purchase horses over other means of acquisition is closely linked to the degree to which demesnes in these regions shifted from oxen to horses as draught animals around the year 1300.⁵⁵ We might also surmise that horse breeding activity was relatively unimportant here, as the commercial force of London as well as the high market density of East Anglia meant that farmers would have been compelled to specialize in the production of other goods which would benefit most from close market proximity.⁵⁶ By not engaging in the breeding of horses themselves,

⁵⁵ In looking at the increasing prevalence of all-horse plough teams over the period of 1250-1420, Langdon found that horse ploughing was most actively and completely embraced in East Anglia and the Home Counties. Of the sixty-five demesnes in his sample that utilized all-horse ploughing between 1250 and 1420, only six of these were outside the Thames Basin and East Anglian regions. Langdon attributes the establishment of all-horse demesnes in Norfolk and the Chiltern Hills to the particular suitability of horses for ploughing in these areas. The light and sandy soils in Norfolk could be easily worked by horses, while the thin and often stone-ridden soil of the Chilterns were precisely the type that presented difficulties for oxen, who could easily slip on the stones. Mixed plough teams, which made use of both horses and oxen, were also largely concentrated in these two regions. By 1300, demesnes in these regions, above all others in England at the time, had embraced horses to a greater degree than other parts of the country. Horses also accounted for just under half of peasant draught animals at the dawn of the fourteenth century, but like demesnes, the preference for horses was strongest in the south and east of the country. In East Anglia horses accounted for 75 percent of all draught beasts, while in the Home Counties the figure was 55 percent. See: Langdon, *Horses, Oxen*, 100-111, esp. 102-3 and 108-9; 205.

⁵⁶ In von Thünen's model, little can be gained from producing livestock near markets, and are relegated to the areas furthest from markets. For an English translation of von Thünen's original text see: Johann Heinrich von

demesnes in these regions would have been especially reliant on the market to provide workhorses. The high proportion of purchased horses in these two regions suggests that the market for horses was both well-established and easily accessible to demesne managers by 1300.

This article has presented conclusive evidence here that demesnes were not producing work horses for the market. However, demesnes and their managers likely had an important distributive role in the trade of these animals. Some reeves and bailiffs, perhaps even unconsciously, acted as middlemen, and, in aggregate, these transactions facilitated the exchange of many animals. Using John Langdon's demesne life figures, which chart the average working life of horses in the seigniorial sector, we can see that, on a national level, demesnes acquired more horses than they would have needed to maintain their stocks. Langdon calculated that the average working life on demesnes for cart-horses and plough-horses was seven and 5.5 years, respectively.⁵⁷ It can then be inferred that, for cart-horses, one in every seven animals would, on average, require replacement in any given year, while one out of every 5.5 affers and stotts would also require replacement. We have assumed that the same working life of 5.5 years applied to all other categories of horses (excluding cart animals). From this, we can compare the number of horses 'needing' replacement against the number of animals actually acquired by demesnes in our sample. The results of this are displayed in Table 3. We can see from the table that the sampled demesnes had a net surplus of forty-six horses, or about twelve percent over the minimum number of animals needing replacement. Many of these surplus horses were acquired through seigniorial perquisites such as heriots and strays, and were either simply 'flipped' for cash or displaced an incumbent animal which was likely either older or less fit. While the primary concern in 'swapping' work horses was the effective management of demesne draught horses, in doing this, many demesne managers, either consciously or unconsciously, acted as horse dealers themselves.

Insert Table 3 Near Here

V

What do demesne accounts reveal about the extent of the horse trade and its regional variety in England in 1300? An important insight is the sheer range of horse acquisition options available to demesne managers. We have seen that the seigniorial perquisites of heriots and strays were often more heavily relied upon to supply demesnes with horses than internal breeding. We have also established that the majority of demesnes were consumers of work horses and invested relatively few resources and little effort in breeding them, therefore, when considering the demesne sector, the horse trade is more of a demand-side story.

For most demesnes, the breeding of horses was only a tertiary method of acquisition. A small number of managers did manage to maintain their stocks of working horses through internal breeding programs, but, in aggregate, these farms did not produce enough work horses to sustain their own demand, let alone a surplus that could have supplied the market. Even in the few instances where landlords engaged in large-scale horse breeding, these operations were always for the production of elite riding and war horses, rather than the agricultural-

Thünen, *Von Thünen's isolated stat : an English edition of Der Isolierte Staat*. Carla M. Wartenberg, Trans., Peter Hall, Ed. (Oxford: Pergamon Press, 1966). For a recent explication of von Thünen in the context of medieval economic history see: John Hatcher and Mark Bailey *Modelling the Middle Ages* (Oxford: Oxford University Press, 2001), 132-3.

⁵⁷ John Langdon, "The Economics of Horses and Oxen in Medieval England" *AgHR* Vol.30, No.1, (1982), 36.

grade working animals upon which the agrarian economy was so dependent.⁵⁸ The significant role that seigniorial perquisites played in the overall scheme of demesne horse acquisition is striking, because it indicates the extent to which demesne acquisition of horses was dependent upon variable and unpredictable sources largely outside the control of the estate. Neither the number of horses acquired through these feudal sources, nor their quality, could be guaranteed. Thus the uncertainty of acquiring horses through seigniorial perquisites compounded the uncertainty of breeding horses on the estate, which may suggest why these demesnes were so dependent upon the market if they were to ensure that they maintained a consistent level of working animals. We might argue, then, that it was not a case of whether demesnes and estates could breed a sufficient number of replacement horses, but rather if they wanted to invest in breeding work horses at all.

Significantly, the fact that purchases were the major method of procurement means that all forms of agricultural horses must have been widely and commonly available in most parts of the country. Bruce Campbell has argued that “when estates and demesnes could not breed sufficient replacement animals they had no other recourse but to buy them.”⁵⁹ While this might have been true for livestock in general, and with cattle and sheep in particular, the attitude of most demesne managers to horse acquisition was to go to the market first, and to use other methods of procurement to supplement the horses they purchased. Thus, this study underlines unequivocally the importance of a horse market in supplying English demesnes around 1300.

It has been well established that the spread of horses in the thirteenth century contributed to the commercialization of the economy,⁶⁰ and our data reveals how this phenomenon in turn created a stronger market for horses in some areas of the country, like the Thames Basin and East Anglia, than others, like the Midlands and the North. In addition to the shift from oxen to horses, and the subsequent development in the horse market, the influence of commercialization around London and in East Anglia likely made purchase the most logical option for demesne managers in these areas. Our evidence suggests that horses were purchased most frequently in the areas of England where commercial forces were strongest. On the one hand, we might expect this, as the market for horses, like other goods, is likely to thrive in the most commercially-oriented areas where markets were most integrated. In this respect, we can see horses both driving the process of commercialization, as Langdon has suggested, but we also see clear evidence of this commercialization within the horse market itself. What the evidence also suggests is that commercialization and demesne horse production were perhaps inversely proportionate. In cases where demesnes adapted to increasing market orientation in England by specializing in the production of specific goods for the market, be it grain, wool or dairy products, the evidence from our seigniorial sample suggests that the breeding of work horses was not a specialization that the seigniorial sector invested in, but they may have, even inadvertently, filled an important distributive role in acting as “middle men” in the horse market.

⁵⁸ See the discussion of the estates of the earl of Lincoln and Peterborough Abbey above. Edward, the Black Prince was also engaged breeding elite war and riding horses across his estates. See: Register of Edward, The Black Prince, HMSO, 1933, Vol. IV, pg. 15 (May 18, 1351); pg. 67 (28, Nov., 1352).

⁵⁹ Campbell, *Seigniorial Agriculture*, 135.

⁶⁰ Langdon, *Horses, Oxen*, 160, 255.

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27504; 27695; 32405; 84214

Table 1: Composition of Sample: Horse Types

Type of Horse	No. in Sample	Percentage (%)
Affers	1069	40.4
Stotts	419	15.8
Young Horses	417	15.7
Cart Horses	397	15.0
Mares	269	10.2
<i>Equi</i>	66	2.5
Rouncies	5	0.2
Mill Horses	4	0.2
Stallions	2	0.1
Total	2648	100

Source: manorial account database.

Table 2: Regional Distribution of Horse Types

	East Anglia		Midlands		North		South and South-		Thames Basin		National	
	No. of Horses	% of Total	No. of Horses	% of Total	No. of Horses	% of Total	No. of Horses	% of Total	No. of Horses	% of Total	No. of Horses	% of Total
Stotts	265	56.5	0	0.0	0	0.0	0	0.0	154	22.9	419	15.8
Affers	77	16.4	221	40.6	60	18.9	402	62.5	309	45.9	1069	40.4
Cart-Horses	70	14.9	104	19.1	4	1.3	115	17.9	104	15.5	397	15.0
Foals	29	6.2	140	25.7	143	45.0	73	11.4	32	4.8	417	15.7
Mares	28	6.0	61	11.2	106	33.3	52	8.1	22	3.3	269	10.2
Rouncies	0	0.0	2	0.4	3	0.9	0	0.0	0	0.0	5	0.2
"Equui"	0	0.0	17	3.1	0	0.0	1	0.2	48	7.1	66	2.5
Stallions	0	0.0	0	0.0	2	0.6	0	0.0	0	0.0	2	0.1
Mill-Horses	0	0.0	0	0.0	0	0.0	0	0.0	4	0.6	4	0.2
Total	469	100.0	545	100.0	318	100.0	643	100.0	673	100.0	2648	100.0

Source: manorial account database.

Figure 1: Horse Acquisition: National Demesne Sample

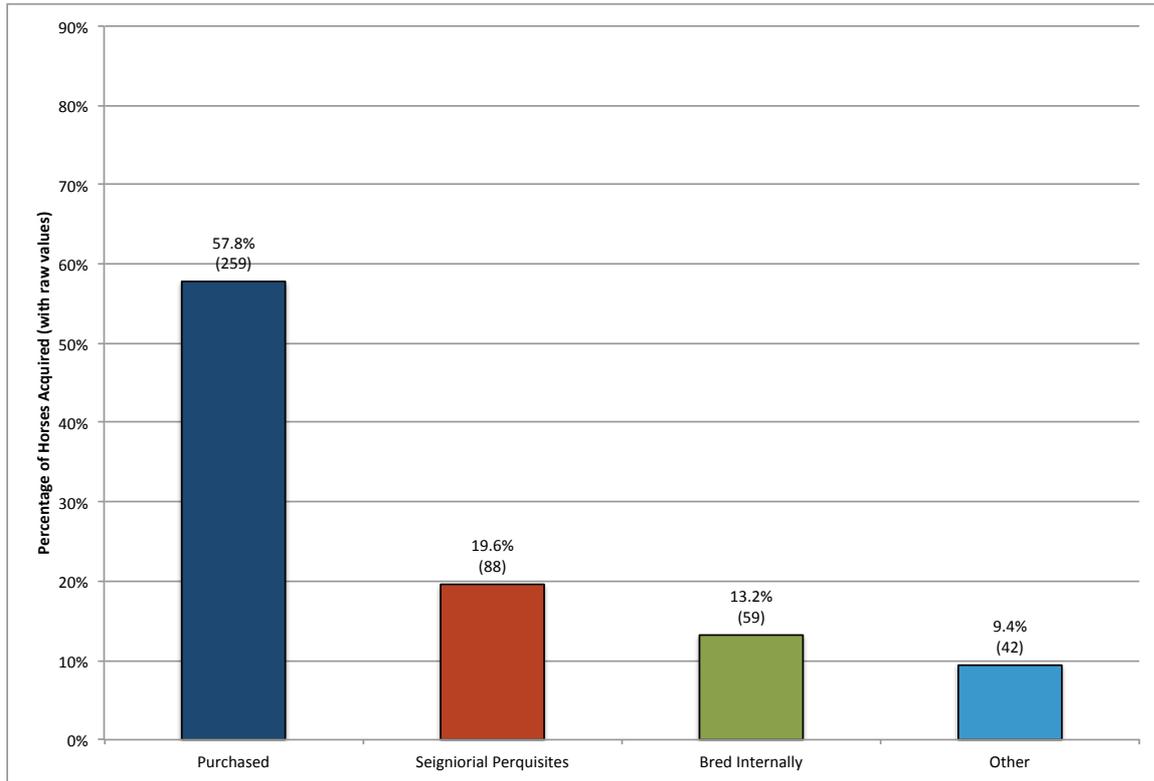


Figure 2: Regional Demesne Horse Acquisition

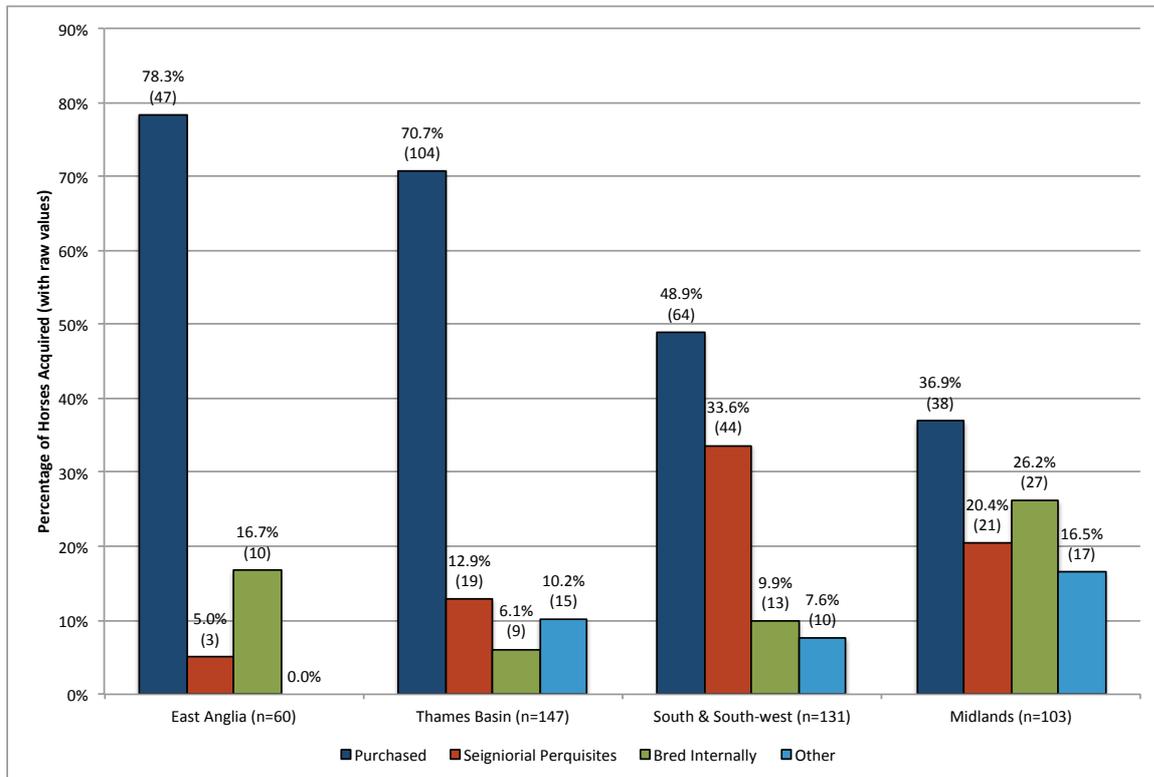


Table 3: Surplus/Deficit of Horse Stocks

Horse Type	No. of Horses	No. of Horses 'Needing' Replacement	No. of Horses Acquired	Surplus/Deficit Horses
Stotts	412	75	83	8
Affers	1088	198	216	18
Cart Horses	398	57	77	20
Mares	253	46	38	-8
Rounceys	10	2	2	0
'Equi'	61	11	18	7
Stallions	0	0	0	0
Mill Horses	4	1	2	1
Total	2284	390	436	46

Source: Manorial Account Database. *No. of Horses 'Needing' Replacement* Column calculated using John Langdon's demesne-life figures. See: Langdon, "Economics of Horses and Oxen", 36.

Plate 1: Cart Horses, Luttrell Psalter ca. 1340



British Library, Add.42130, f.162

Plate 2: Pack Horse/Mill Horse, Luttrell Psalter ca. 1340



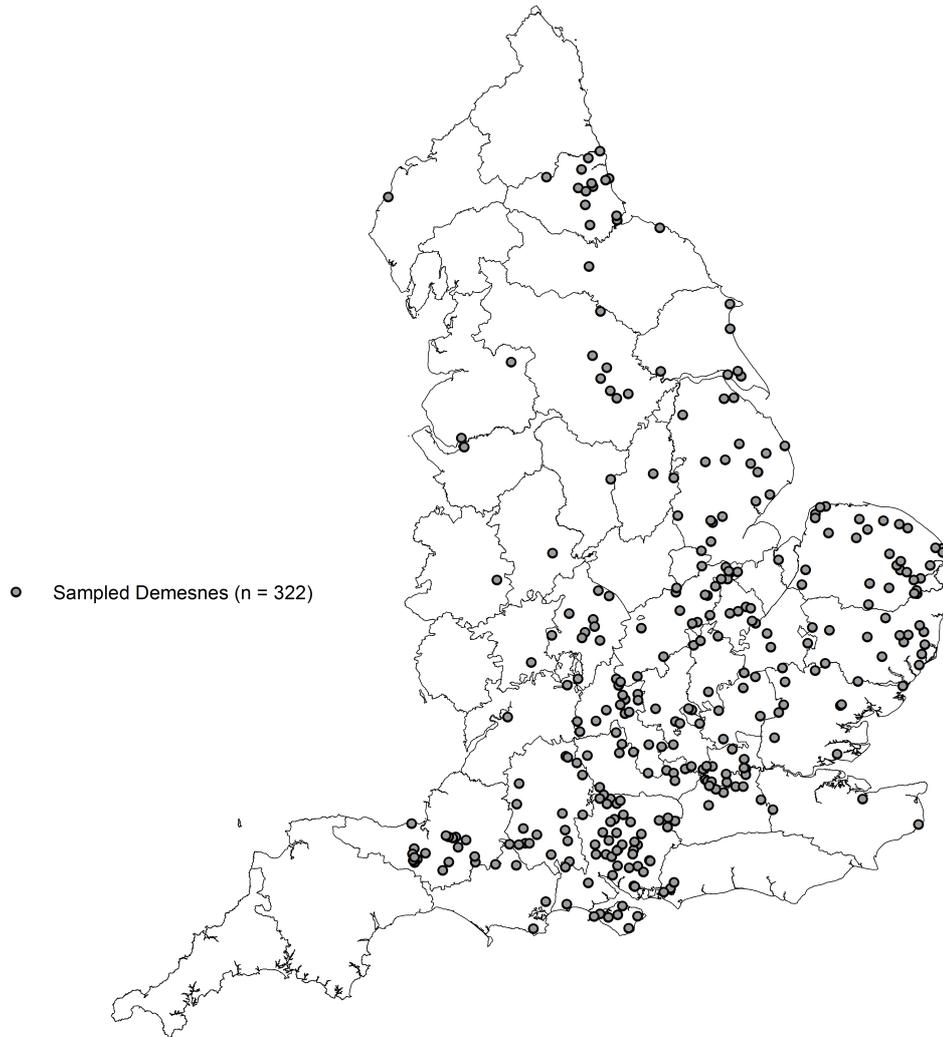
British Library, Add. 42130, f.157v

Plate 3, Harrowing, Luttrell Psalter ca. 1340



British Library, Add.42130, f.171

Map 1: National Demesne Sample ca. 1300



Map 2: Regional Distribution of Manorial Account Sample

