BUSINESSMEN AND LAND PURCHASE IN LATE NINETEENTH CENTURY ENGLAND

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ABSTRACT

This paper compares the value of landed and non-landed wealth held by a group of nineteenth century British businessmen. Landed wealth is estimated from the data in John Bateman's *Great Landowners of Britain and Ireland*. Non-landed wealth is documented in probate records. Quantitative evidence shows that businessmen who owned land in the late nineteenth century did not retain a large proportion of their wealth in landed assets. In that sense they were rich because of the personal wealth and not because they were landowners.

Businessmen and Land Purchase in Late Nineteenth Century England[1]

We do not know if businessmen in the late nineteenth century held a significant proportion of their wealth in landed assets because, 'a great deal of further research would be needed to establish what may have been a normal multiple.'[2] Without precise estimates of the share of wealth invested in land, we can explain neither the composition of a stock of wealth in this period, nor the social significance attached to land purchase by businessmen. This paper makes amends by analysing the size and value of landed estates for a group of 295 businessmen in the *Dictionary of Business Biography*.[3] The sample is restricted to those active in the late nineteenth century using a date of birth 'control' for those born between 1800 and 1840. We check the landholdings of the individuals using John Bateman's *Great Landowners of Great Britain and Ireland* and estimate sale values by capitalising the gross annual values of the estates included.[4] We then compare the value of wealth in land (*realty*) with the value of personal wealth (*personalty*), as listed in probate records, to establish a multiple of personalty to realty. Using the available data it is impossible to estimate the value of realty for individual dates of death. Probate personalty is therefore given in constant prices for the 1870's when Bateman's records were collected.

The paper is organised as follows. Section I explains the significance of a ratio of personal to landed wealth in the debate on businessmen and land purchase in the late nineteenth century. Section II looks at source data. Section III outlines a method for calculating personal wealth and the value of wealth in landholdings. Section IV analyses the nature of landownership using biographical data. Section V estimates the share of wealth tied up in landed assets using a variety of quantitative techniques. Our findings are twofold. First, we show that businessmen who owned land on a large scale in the late nineteenth century were a comparatively small group. Second, we demonstrate that businessmen did not purchase land on a scale which could be compared with their non-landed assets. We conclude in section VI that businessmen in the late nineteenth century were rich because of their personal wealth and not because they were landowners.

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[1] I am extremely grateful to James Foreman-Peck and Avner Offer for their comments.

[2] Thompson 1990, p.49.

[3] Jeremey and Shaw 1984-1986.

[4] Bateman 1876-1883.

I

The relationship between wealth, status and landownership in the late nineteenth century is complex and difficult to resolve. Using a variety of sources and methods, researchers have tried to address the fundamental question of what land was owned by the newly rich. Establishing a multiple for the amount of wealth held in realty and personalty is also an integral element of this debate. Land purchase by successful businessmen can be taken as evidence of gentrification, while the propensity of newcomers from commerce and industry to acquire land in relation to non-landed assets provides an additional index of social standing.

There is some evidence that business wealth was used for land purchase in the nineteenth century because wealthy businessmen and their heirs could utilise land for investment, residence, or status. The diffusion of business fortunes into land, either through direct purchases or kinship acquisitions, was a broad avenue through which business magnates entered the upper echelons of society. Using Inland Revenue file series IR26, F M L Thompson calculates the realty held by 27 half millionaires and their descendants. The annual value of the listed estates are capitalised at 30 and 35 years purchase to calculate sale value estimates. This value is then compared with the personal wealth of the original holder to give a ratio of personalty to realty. Accounting for intergenerational purchases in this way enables Thompson to conclude that for those businessmen who were active in the market for land, around half of their wealth could be tied up in landed assets - a ratio of personalty to realty of 1:1.[5]

The most recent contribution to the debate, on the other hand, makes a weighty case for limited purchases by businessmen and strengthens the argument made in previous research that only rarely did nineteenth century businessmen purchase land on a large scale. Extrapolating from the aggregate personalty and realty values for a group of 337 top wealth holders, W D Rubinstein suggests the total invested in land rarely exceeded a low proportion of a man's total worth. A typical ratio might be 6:1, six sevenths of assets held in personalty alone. Businessmen could, because they were wealthy, channel their fortunes into land. The fact they did not refutes any suggestion that men of new wealth were able to enter into the high society of the established landed elite.[6]

A careful analysis of the calculations made by Thompson and Rubinstein, however, reveals that the arithmetic procedures are biased in a direction which leads to the respective conclusions that the share of wealth retained in landed assets was either very high or very low. Thompson includes the land purchase of descendants without including any adjustment for their accumulated personalty, a

[5] See further, Thompson 1994, 1992, 1990, 1957, 1963. See also, Spring, 1986.
[6] See further, Rubinstein, 1996, 1992, 1981, 1981. See also, Stone and Stone 1984.

method which exaggerates the value of realty that can be attributed to the original wealth holder. Rubinstein, alternatively, posits a ratio of personalty to realty that is based on a sample of business and professional wealth holders the majority of whom possess no land at all. Of the 337 top wealth leavers included in his survey just 12% hold 1000 acres or more.

We suggest two alternative yardsticks as more appropriate measures of landholding propensity. First, the proportion of businessmen who owned land in the late nineteenth century identifies the distribution of landed resources among men of business wealth. It is possible that few businessmen held land, but that a large proportion of their wealth was held in landed assets, which leads on to our second measure. We test the significance of land within a stock of wealth by delineating the share of wealth embodied in landed assets for those businessmen who owned land. We do not include purchases by heirs because in many cases there was an intergenerational transformation from businessman to landed proprietor. This would significantly overstate the extent of landownership among business wealth holders. Using a data set comparable to Rubinstein in terms of sample size and significance, we can show that land was a comparatively small element of a businessman's assets in the late nineteenth century.

II

The sample is composed of 295 businessmen active in the late nineteenth century documented in the *DBB*. The *DBB* does not contain all businessmen who did purchase land, but it can be used with some confidence to establish the proportion of individual wealth invested in land. The sample reflects business wealth holders active in a variety of fields and occupations. Agriculturists are excluded so the sample is confined to men who made their fortunes in business pursuits. There is a slight bias towards individuals in manufacturing, but the sample is generally representative of the population of leading figures in British business.

If there is a major bias in selection, it is in favour of those with a strong propensity for land acquisition. If wealth alone motivates land purchase there will be a threshold level of wealth below which the fixed cost of land make it inefficient to hold any. The costs of conveyance and maintenance were both large. The median value of personalty for the businessmen included is £154,500 while the 'bare minimum' for buying a country estate can be put at roughly £100,000.[7] However, because we do not impose a threshold level of wealth as a criteria for selection, we do make allowance for landowners who did not leave large fortunes on their death.

[7] Thompson, 1990, pp.50-51.

Our date of birth 'control' means that all individuals born between 1800 and 1840 and hence active in the late nineteenth century are included. This method of classification helps filter out the effects of large scale evasion and avoidance of death duties which is important for a study that uses wealth data. Although the owners of large estates were probably more likely to avoid such taxes, particularly through gifts *inter vivos* the effect is likely to have been minor. The total capital subject to duty increased by just 0.5% a year between 1898 and 1914.[8] There is no evidence of large scale evasion and avoidance in this period. Dodging the payment of death duties gathered pace only in the aftermath of war.

To estimate the proportion of wealth held in land, calculations of wealth including and excluding the value of land need to be made for the individuals in the sample. Wealth data which excludes the value held in land for most of the nineteenth century, are available form probate records. From 1858 probates provide a systematic documentation of the gross value of the estates passing on death of individuals as required by probate or grant of administration. Probate entries are legible, comprehensible and can be used effectively to analyse income, wealth and inequality for the most affluent social groups. We obtain an estimate of the gross value of personal estates passing on death for the 295 cases in the sample.[9]

Land other than that held under leasehold was not included in probate valuations until 1898, which provides a convenient method of separating personal wealth from real estate wealth. Some individuals in the sample died after 1898, but all of them died before settled land was included in probate in 1926. For those who left estates in the interim, we can be reasonably confident that the value of wealth held in land was excluded because it was likely to be settled. Even the most conservative estimates indicate that settled land was a ubiquitous tenure up to 1914 because the tradition of primogeniture kept estates intact through intergenerational transfers. Land probably did go in and out of settlement, especially after the Settled Land Act of 1882 which enabled those with life settlement to sell their land. But as settled land was liable to a lower estate duty than normal estate duty, land was probably either sold or settled over a generation to avoid a large liability on death. The value of wealth held in land is only inextricably linked with probate from the second half of the 1920's.

Corresponding estimates of real estate wealth are more difficult to obtain because there is no comprehensive source which details landed wealth held by individuals. Much data exist on land tenure, but distributions are not often disaggregated and given by name. Inland Revenue reports in this period show only the aggregate value of British realty and the distribution of property passing at

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[8] Offer 1981(a), p.110.

[9] The original sample was composed of 302 businessmen but we could only find probate entries for 295.

death by tenure and wealth. The value of land vested in individuals is not included. The Inland Revenue file series IR26 does include named estimates of real estate settled and unsettled but is available only for the period 1796-1903 and consists of numerous ill defined and difficult to decipher manuscript volumes. It cannot be used effectively to trace names from large samples.[10]

The single most useful source for determining the extent of landholdings is John Bateman's *Great Landowners of Great Britain and Ireland* published in four editions between 1876 and 1883. Unsatisfied with the accuracy of the 1873 Local Government Board investigation into landowners, their acreages and the rental value of their estates, Bateman compiled using private correspondence, an adjusted return for the large landholders he knew. The final listing in 1883 documents those in possession of at least 2000 acres yielding at least £2000 per annum in gross annual rental.

It is generally recognised that the listing in Bateman contains omissions and discrepancies. The process of estimating land values is complex and the voluminous returns of the original Local Government Board on which Bateman's revisions were based, do contain errors of transcription. Even Bateman was obliged to acknowledge the margin for error in his estimates.

> 'let me say that this compilation... was undertaken by me simply as a labour of love, when no-one else seemed disposed to attempt it; it is no doubt full of errors but such errors would be tenfold were the process repeated by anyone who unlike myself, lacked a fair knowledge of who's who.'[11]

A major criticism of Bateman is that he ignores land in London so around one fifth of the value of the nation's real estate which was in London is excluded.[12] The omission was necessary for Bateman because the complex division of London land between rented property and owned property would have taken years to unravel. The compilers of the 1873 returns had not undertaken such a task either. New data does exist to show that London land was concentrated in the hands of a few large peers and corporations which should not detract from the observed distribution of landholdings. Of the major London landowners that

[10] Rubinstein 1992, p.351.
[11] Bateman 1876-1883.
[12] Lindert 1987, p.33.

appear in the new data none are represented in the sample of businessmen used here.[13]

But, the ownership of London ground rents was undoubtedly more diverse. Although London ground property was probably less evenly distributed than the acreage outside the metropolis, in 1913 there were still 700 owners of more than five acres each in the County of London. Their holdings comprised approximately thirty eight square miles and around thirty three per cent of the London County Council area.[14] It is not implausible and likely very probable, that businessmen included in the sample did own land in districts of the metropolis. It must be remembered that the observed landholdings we can obtain from Bateman will underestimate the actual value of land owned by an amount equal to the capital value of property held in London. Bateman does not give a distribution of national landholdings.

Bateman's listing is also specific to tenure in the early 1870's. The essence of Bateman's work was to revise the estimates given in the Local Government returns which appeared in Parliamentary Papers in 1873. It is doubtful if Bateman records all new estates established between 1873 and 1883 so the returns are applicable only for a narrow point in time. Those who owned land could be parted from it through sale or death before Bateman's starting date, while any land purchased after 1883 (though probably much earlier) would not appear in Bateman's listing. Caution would certainly be urged in extrapolations beyond the latter date. For individuals such as William Armstrong who was particularly proliferate in his land expenditure towards the end of his life, Bateman's returns do not give an accurate reflection of late nineteenth century land purchase. Armstrong, an entrepreneur in armaments manufacture, purchased Bamburgh Castle in Northumberland and its 10,000 acre estate for £60,000 in 1894, eleven years after Bateman's final edition.

We must also stress that Bateman's returns are not a representative sample of all landowners since 2000 acres worth £2000 per year places a high threshold for inclusion. Capitalised at a conservative 20 years purchase, the bare minimum capital value of land for inclusion by Bateman would be in the order of £40,000. Only the very wealthy could purchase land on this scale. Bateman captures only the very largest landowners possibly excluding a large share of relatively small to modest estates that were likely to be in the preserve of new men of wealth who had yet to acquire larger properties.[15] Those who owned land not as a means of

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13 Ibid., pp.47-48.

14 Offer 1981(a) p.273.

15 For example, Christian Allhusen, the chemical manufacturer purchased an estate of around 500 acres in Buckinghamshire in 1872. It had a net annual value for Succession

supporting income out of agricultural rents, may well have held land in less imposing forms.

Ideally we would need more information on the landed acreage owned by individuals at much lower thresholds, over a longer period of time and for the metropolis. Allowing for these constraints, however, Bateman's listing does bring together valuable material on landownership. Land was a relatively fixed asset and involved high transactions cost of sale so Bateman does give some insight into landholdings in the late nineteenth century. Our sample is also biased towards businessmen who were successful in their field and who did possess fortunes compatible with the acquisition of large estates. Although an imperfect source, Bateman's four editions of the *Great Landowners of Great Britain and Ireland* do represent the best available data on which to base estimates of the share of wealth tied up in landed assets in this period.

III

In order to estimate land values using Bateman's returns, we need to overcome the additional constraint of missing information. Bateman was interested in the number of landowners and the size of their acreages, rather than the potential sale value of their estates. Years purchase and classification of land by type were, therefore, beyond the remit of the investigation. When land was sold its price was expressed as the rental value multiplied by the number of years purchase. A high years purchase meant a low rate of return and vice versa. The number of years purchase reflected the supply and demand for land and varied considerably over time and between land uses.

Rents also fluctuated widely in this period. Land values could move because of a change in the rental value of land, in addition to a change in years purchase, or a combination of both. This was particularly pronounced in the last quarter of the nineteenth century. A fall in years purchase occurred on agricultural land because demand failed to match up with supply during conditions of agricultural depression. Rent rolls were also falling because of foreign competition. The value of ground rents, on the other hand, increased on trend with smaller trade cycle fluctuations and accounted for a larger share of gross rent receipts.[16] It was not until after 1900 and the Edwardian property slump that years purchase on ground rents began to fall.[17]

Given that the Bateman data were collected for the pre depression years, the returns can only be used reliably as a snapshot indication of nineteenth century

duty of £1,169. There is, however, evidence to suggest that businessmen were not predisposed to owning lesser estates. See further, Stone and Stone, *Open Elite* pp.409-411.

[16] Offer 1981(b), p.250.

[17] Offer 1981(a) pp.276-278.

land purchase before the depression. Much further research would be needed to gather information on the movement of rents and years purchase on different holdings for the post depression epoch. It is also much easier to adjust the personal wealth of the individuals in the sample and give a value of personalty at constant prices for the Bateman period rather than estimate the value of realty at individual dates of death when probate was granted. In the absence of better data we can not capitalise the annual values given by Bateman for the post depression years in general, while some estimation of likely years purchase rates can be made beforehand.

Our method is to use upper and lower limits for years purchase to capitalise the gross annual values (which comprised the rent rolls) given by Bateman. The estimates of realty can then be compared with the value of personalty in constant prices to determine the relative importance of landed assets in a stock of wealth. Although somewhat arbitrary, this procedure for estimating the value of realty does account for variations in land values and hence the rate at which the gross annual values should be multiplied. Moreover, owing to a wide fluctuation in years purchase for particular land uses, it would be misleading to capitalise using specific values even supposing we knew years purchase on various holdings. Some margin for error would still need to be incorporated because the variance of the values would be large.[18]

Years purchase depended on the amount of property on the market and the number of potential buyers. Expectations of the long term interest rate were also important which affected the willingness to devote resources to land purchase. For much of the nineteenth century, years purchase on agricultural land was higher than the price earnings ratio on consols which is illustrated in figure 1. Although paradoxical because the differential implies agricultural land embodied a lower level of risk than government consols, we would observe this trend if individuals active in the market for land were willing to bid up prices. A possible explanation is that the social amenities of land enhanced its so-called ‘positional premium’. While the return on government consols was purely economic, the owners of land could extract a return in excess of money rent.[19]

The *Economist* reported in 1870 that, ‘social consideration is a great and legitimate object of desire...’ and that ‘...thirty years purchase is not a rate from which the competing millionaires shrink. On the contrary they are giving more already’.[20] Land could be used for residence, status and position, in addition to earning an income from agriculture. Landownership was an explicit expression of

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18 The variation in land values is illustrated in Offer 1991.

19 Ibid. See also, Allen 1988, Clay 1974.

20 ‘The effect of free trade in land upon peasant proprietorship’, The *Economist* (16th July 1870), pp.880-881.

wealth and could be traded above its economic value. The data in figure 1 suggests that up to forty years purchase and even beyond on some holdings might be a reasonable capitalisation rate on agricultural land for the Bateman period.

Unfortunately, we have no comparable data for 1870's urban ground rents. The income flow for urban enterprises was less uncertain than for agricultural land implying a lower risk and a higher years purchase. But, the market for land was considerably more complex. Urban land, unlike agricultural land, was probably traded at a value which reflected its economic return with only the wealthy districts of the metropolis and the new provincial cities attracting any premium. This complicates any estimation based on the years purchase ascribed to agricultural land.

Land was capitalised at different rates because of expectations and special factors influencing the supply and demand for land. The number of years purchase charged on agricultural, residential and business and ground rents in Inland Revenue reports between 1894 and 1906 provides a suitable illustration. Under the extension of the Estate duties in 1894, which replaced old Probate and Account duties and Temporary Estate Duty, inherited realty was covered for the first time. Table 1 gives an account of the number of years purchase used by the Inland Revenue for assessing duty liability.

Table 1. The Number of Years Purchase for a Variety of Landholdings in Inland Revenue Reports 1895-1906

Year	Agricultural	Residential and Business	Ground Rents
1895	18-19		22-23
1896	16-17	14-15	24
1897	16-17	14-15	24
1898	16-17	15-16	27
1899	17	15	24-25
1900	17	15	26
1901	18	15	25
1902	18	15	30
1903	18	15	25
1904	18	15	24
1905	18	14.5	24
1906	18.5	14.5	24

Source: Inland Revenue Annual Reports, Parliamentary Papers (1895-1906).

The Inland Revenue data probably understate the number of years purchase because the figures were used to value land liable for duty and so did not represent actual market transactions. Inland Revenue statistics also reacted very slowly to market trends. These reasons might explain the lower number of years purchase on agricultural land in table 1 relative to the values given in figure 1. The data, nonetheless, provide powerful evidence that the market for land was not homogenous which affected years purchase (and rents) for different holdings.

Having established that forty years purchase is a suitable rate at which to capitalise agricultural land in the pre depression period, we propose that twenty and thirty years purchase may represent compromise estimates for years purchase on other forms of tenure. These rates are inevitably speculative because we do not have comparable data on years purchase for urban land. Inasmuch as the capitalisation rates are broad, however, allowance is made for variations in landuse. By estimating the value of personalty at constant prices for the pre depression years, we can then determine a range of estimates for the share of landed assets in a stock of wealth. We apply this method in the following section.

IV

Using the three capitalisation rates and tracing the 295 names in the sample of businessmen through Bateman's returns, we construct a cross sectional representation of late nineteenth century businessmen who were landowners. The data are given in table 2. The number of acres and gross annual values are taken from Bateman's listings and postulate an index of landholding and rent earning capacity. Capitalisation of the gross annual values is given at twenty, thirty and forty years purchase to establish upper and lower bounds for sale value estimates. Personalty is the wealth at death for each individual as documented in probate or grant of administration. The value of personalty is converted to constant prices for the 1870's using a GDP deflator.[21] We give various measures of the ratio of personalty to realty according to capitalisation rates.

The data in table 2 show that businessmen were not a class of landowners. Of the 295 businessmen in the sample, just twenty three or 7.8% of the total purchase or inherit land sufficiently to be included in Bateman's records. Not all landowning businessmen are included in the sample, but the finding is consistent with the view that only rarely did men of business wealth purchase large amounts of land. Our sample is composed of well to do businessmen with fortunes that could be used for acquiring landed assets. Included are men who inherited wealth,

[21] We take the average of the index of the GDP deflator for 1870-1880. If 1900=100 the mean for 1870-1880=105. The deflator is calculated by dividing the current series by the series at 1900 prices of GDP at factor cost given in Mitchell 1988, pp.831-832 and 837-838.

or who founded successful firms from humble beginnings. We find a low tendency in general for these individuals to possess landed estates in the late nineteenth century.

This form of measurement can, however, be deceptive. Like income and wealth, nineteenth century landownership was heavily concentrated. If those individuals that were active in the market for land maintained a significant proportion of their wealth in landed assets, the propensity to hold land within a stock of wealth would be high. Our first measure captures only the proportion of businessmen that were likely to hold landed assets and tells nothing of the composition of their wealth. A more extensive analysis of the data in table 2 is needed to understand the nature of landholding in this period. Although the sample size is small and the variance large, some general observations can be made.

First, there was some fusion of landed and business interests because some aristocrats were also entrepreneurs. Land could be an element of an investment portfolio so was not confined to leisure, residence, or agriculture. Hereditary landowners commonly invested in urban expansion, railways or mineral exploitation. William Cavendish, the 7th Duke of Devonshire, inherited considerable estates in North Lancashire with large slate endowments. The income from slate quarrying, in addition to the annual income from land, enabled the diversification of his business interests into railways, steel and shipbuilding.[22]

Against this pattern, land was a potential source of indebtedness as individuals could be encumbered with mortgages on land over successive generations. On his accession to the Dukedom of Devonshire, William Cavendish found the family estates were encumbered to the value of £750,000. Only through entrepreneurial investment purchasing and individual enterprise and labour, was Cavendish able to leave a healthy legacy on his death in 1891.[23] Land could be a source of entrepreneurial failure if the leisure preference of land outweighed or offset the inclination towards enterprise and labour. Samuel Jones Loyd, once created Baron Overstone in 1850, ceased to have any direct involvement in the family bank and diverted most of his wealth into landholding.[24] The reduction of his income in the 1870's with the onset of the agricultural depression, yields a classical example of an attempt to enhance status through means which reduced the profitability of a portfolio. Loyd failed to insure against loss in the event of a fall in agricultural rents.

Others managed to shift the constraints. Many aristocratic landowners knew how to preserve their incomes in the face of falling rents by moving their

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[22] 'W Cavendish' in Jeremy and Shaw 1984-1986.

[23] Ibid.

[24] 'S Loyd' in Jeremy and Shaw, 1984-1986.

assets into government bonds or enterprises. Henry Bouverie William Brand, Ist Viscount Hampden, compensated for the fall in agricultural income by expanding his limestone and chalk quarry at Glynde in Sussex.[25] Some land uses were liable to appreciation rather than depreciation in the last quarter of the nineteenth century. Included in the family estate of William Thomas Spencer Wentworth Fitzwilliam, 6th Irish and 4th English Earl Fitzwilliam, was a South Yorkshire colliery empire consisting of seven collieries with production concentrated in three.[26] Robert Heath II who was not an aristocrat, but was an entrepreneur, began an extensive process of colliery and foundry development through land acquisitions. This interest was continued, though with rather less enthusiasm, by his four sons who entered the family business.[27]

Although relatively unremunerative as an investment, land could be sought for social reasons, esteem or as a form of self actualisation. Land purchase was an important element of gentrification because a title could accompany land purchase. John Derby Allcroft, who made his fortune as a leading Midlands glove and leather manufacturer, became Lord of the Manors of Stokesay and Onibury following the acquisition of estates in Shropshire.[28] William George Armstrong was raised to the aristocratic title of Ist Lord Armstrong of Cragside in 1887 because of his entrepreneurship in engineering and armaments manufacture. He had amassed an estate of 2265 acres with a gross annual value of £6606 per annum by 1883.[29] Land purchasing activity was a measure of gentry status and did reflect the partial assimilation of the new wealthy and the established landed elite.

The gap between hereditary landowners and other landowners, however, was not closed either through entrepreneurship or through landholding. The combined acreages of the two hereditary landowners in the sample, the 7th Duke of Devonshire and the Earl Fitzwilliam, together account for over 51% of the total. The tenure of hereditary landowners was distinguishable from that of wealthy businessmen by the size of an estate. Spatially land was needed in abundance to earn (or appropriate) income in the form of agricultural rents, which was the prerequisite for the creation and maintenance of permanent country residence. Businessmen, alternatively, with the notable exception of owners of mineral rights, made their money in industry rather than on the land and tended to own smaller holdings. Size was probably more important than value because full acceptance into the landed aristocracy required a large estate.

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25 'H Brand' in Jeremy and Shaw, 1984-1986.

26 'W Fitzwilliam' in Jeremy and Shaw, 1984-1986.

27 'R Heath II', in Jeremy and Shaw, 1984-1986.

28 'J Allcroft' in Jeremy and Shaw, 1984-1986.

29 'W Armstrong' in Jeremy and Shaw, 1984-1986.

Size could of course be misleading. Small farms were more valuable per unit of land because they cost more per acre and paid a higher rent. There were no large economies of scale in agriculture. Ground rents were considerably more remunerative per acre than agricultural land because the flow of income was more certain. A given area of urban tenure was more rent engrossing than a comparable portion of agricultural land. There is a negative correlation between the number of acres and the annual value per acre of land in table 2. A Spearman rank correlation coefficient of -0.442 (p=0.035), suggests *ceteris paribus* the larger an estate the lower the annual return.

The hereditary landowners, however, are still distinguishable in the context of value as well as size. The 7th Duke of Devonshire and the Earl Fitzwilliam at the most conservative estimate hold land valued at over £3.6m and just under £2.8m respectively at twenty years purchase. The remaining landowners are small by comparison, with just one other individual in the sample, Samuel Jones Loyd, Lord Overstone possessing land valued at over £1m. A further measure of value is the ratio of personalty to realty. The hereditary landowners rank lower than for most of the individuals in the sample at 21 and 20 respectively. While aristocrats did grace the boards of companies and businessmen did enter into the market for land, in terms of size, value and composition of landed assets within a stock of wealth, the hereditary aristocracy appears to be a distinct group of the landed elite.

More generally, the propensity to hold landed wealth in size and in proportion to personal wealth, was a function of individual circumstances. Edward Levy Lawson made his money as a newspaper proprietor and used the 3207 acres attributed to him in Bateman's returns for residence and country pursuits.[30] Conversely, John Bowes' 43,200 acres in Durham and North Yorkshire were used exclusively for mineral exploitation (mostly coal) and accounted for a large share of his total wealth.[31] Even within land uses circumstances varied. Robert Heath II was a colliery proprietor, much larger in fact than Bowes, but owned just 7.7% in acres and 22.8% in gross annual rental of the land attributed to Bowes in Bateman's listing. This was because Heath leased rather than owned much of the land he used for coal mining. While Heath is placed ninth in the ranking of ratios of personalty to realty, Bowes is placed much lower at twenty-three.

The composition of wealth could also be strongly influenced by the relative values of personalty and realty. Charles Morrison, the massively rich and affluent merchant banker and warehouseman, holds between nine and eighteen units of personal wealth to one unit of real estate wealth in table 2 depending on capitalisation. Morrison was both wealthy and a large landowner.[32] George

30 'E Lawson' in Jeremy and Shaw, 1984-1986.
31 'J Bowes' in Jeremy and Shaw, 1984-1986.
32 'C Morrison, in Jeremy and Shaw, 1984-1986.

Palmer, the biscuit manufacturer from Somerset, at the other extreme, clears the Bateman threshold by just one acre and holds much less personal wealth than Morrison.[33] Morrison and Palmer rank respectively at one and two for the ratio of the proportion of wealth held in landed assets, though for entirely different reasons.

As these examples illustrate, the size of landholding and the value of wealth held in landed assets was a function of individual circumstances rather than common factors influencing purchases. The market for land was complex and possession derived from diverse social as well as economic reasons. On the strength of anecdotal evidence, it is difficult to distinguish the prevailing elements governing the composition of wealth for businessmen who were landowners in the late nineteenth century. In the following section we attempt to uncover more specific trends using quantitative techniques.

V

If land was an important component of wealth, we would expect to find significantly different distributions of wealth for the individuals in the sample when the value of land is included and excluded. In order to test this hypothesis we use a nonparametric sign test procedure on the median values given in table 3. The median is used as a measure of central tendency because the distribution of wealth is heavily skewed. The differences between the two variables for all cases are classified as either positive, negative or tied. If the two variables are similarly distributed, the number of positive and negative differences will not be significantly different.

We can reject the hypothesis that the distribution of total wealth (personalty plus realty) is significantly different from the distribution of personal wealth, by including the component of wealth held as realty at various capitalisation rates (*Ho* £163,000>£162,195, p=0.4537; *Ho* £162,456>£162,195 p=0.5000). The value of realty is sufficient neither in size nor extent to generate a significant difference. The difference between the median personalty for landowners and non-landowners is statistically significant at the 5% level (*Ho* £673,000>£148,596; p=0.0000), but the hypothesis of a difference between the median values of personalty including and excluding landowners must be rejected (*Ho* £162,195>£148,596 p=0.1247). Landowners are more wealthy than non-landowners, but the difference is caused by personal wealth holding and not because of wealth held as realty.

A further test of the importance of land within a stock of assets, is the relative weight that can be attached to movements in the value of personalty and realty. The ratios of personalty to realty in table 2 can be strongly affected by high or low values of either. We test the relative strength of each variable using

33 'G Palmer' in Jeremy and Shaw, 1984-1986.

Spearman's rank correlation procedure. This test is reliable even if the data are not normally distributed and obviates the need to distinguish capitalisation rates. The ranks are a transformation which preserves the order of the actual deviations.

Table 3. Estimates of Wealth Held in Personalty and Realty

Personalty Landowners	£673,000 (n=23)
Personalty (Excluding Landowners)	£148,596 (n=272)
Personalty (Including Landowners)	£162,195 (n=295)
Total Wealth (Realty at 20 Years Purchase)	£162,456 (n=295)
Total Wealth (Realty at 30 Years Purchase)	£163,000 (n=295)
Total Wealth (Realty at 40 Years Purchase)	£163,000 (n=295)

The results are given in table 4 and show that there is no statistically significant correlation at the 5% significance level between wealth in realty and the ratio of personalty to realty. The corresponding correlation between wealth in personalty and the ratio of personalty to realty is strong, positive and clears the critical region at the 5% level. A high value of personalty is likely to increase the ratio of personalty to realty more than a high value of realty reduces the ratio and vice versa. Personalty is a stronger component of total wealth than is realty for the businessmen included in the sample.

Table 4. Correlation Tests on the Share of Wealth in Personalty and Realty

Test	Rank Correlation Coefficient	Significance
Personalty and the Ratio of Personalty to Realty	0.478 (n=23)	0.021
Realty and the Ratio of Personalty to Realty	-0.325 (n=23)	0.131

Extending the analysis to establish a 'typical' ratio of wealth invested in land is more complex. The value of landed assets held within a stock of wealth did depend on individual circumstances. Insofar as a normal multiple can be calculated, however, we suggest that between 62% and 76% of total wealth was held as personalty. These percentages are derived from the respective median ratios of personalty to realty at forty, thirty and twenty years purchase, which are 1.64, 2.19 and 3.23. By far the largest proportion of a stock of wealth for businessmen who owned land in the sample was composed of personalty.

We can infer upper and lower limits for the ratio of personalty to realty in repeated samples using OLS regressions and confidence intervals constructed from the parameter estimates. It should be noted that the OLS fit is used to determine the components of a stock of wealth rather than 'explain' land purchase which would require the inclusion of other variables. We indicate the composition of wealth held in *Yp* realty and *Wd* probate personalty using equations 1 and 2.

$$\ln(Yp/Wd) = \alpha 1 + \beta 1 \ln Wd \qquad (1)$$

$$\ln Yp = \alpha 2 + \beta 2 \ln Wd \qquad (2)$$

The results are given in table 5. Land values are calculated at each capitalisation rate. The variables are entered in logs and significance is at the 5% level. We test the variance of the error term using a general LM test.[34] All the values clear the critical region so we can reject the hypothesis of heteroscedastic errors.

Note from table 5 that different years purchase do not affect the respective estimates of $\beta 1$ and $\beta 2$. The only difference is that we add a constant to the dependent variable by varying the number of years purchase which affects the intercepts $\alpha 1$ and $\alpha 2$. Our estimates are robust to changes in capitalisation rates. Equation 1 tests the hypothesis that the ratio of realty to personalty changes with respect to the level of personalty. $\beta 1<0$ can be accepted at the 5% level, so a positive change in the proportion of wealth held in realty is associated with a negative change in the value of personalty. As personal wealth rises the proportion of wealth held in land falls.

Equation 2 is rearranged and substituted from equation 1 [$lnYp = a1 + (1+ b1)lnWd$] and measures the change in the value of landownership for a given change in probate personalty. The value of landed assets is a positive function of personal wealth because $\beta 2>0$, but personalty is a proportionately larger share of total wealth than realty because $\beta 2<1$ using a 95% confidence interval. We may conclude from equations 1 and 2 that the largest purchases of land were made by the wealthiest men, but that the bulk of their wealth was maintained in non-landed forms. This is consistent with our earlier findings.

The coefficient on *Wd* ($\beta 2$) in equation 2 can also be interpreted as the elasticity of land purchase with respect to personalty. Equation 2 predicts a ratio

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34 The resulting value is compared with a χ^2 distribution. See further, Breusch and Pagan 1980, pp.239-254.

of realty to personalty of 0.54 which is consistent with our earlier estimates. Using a 95% confidence interval we would find in repeated samples that just 5% of the observations would fall outside the range 0.23 to 0.85. Reciprocating gives outer bound estimates of the ratio of personalty to realty which suggest a typical ratio might be 1.85 or between 4.35 and 1.18 in repeated samples.[35] These ratios are of practical importance and constitute 'best' estimates of the composition of wealth for businessmen who were landowners in the late nineteenth century.

Table 5. OLS Regression Results

	Twenty Years Purchase n=23	Thirty Years Purchase n=23	Forty Years Purchase n=23
$\alpha 1$	-1.194 (-5.847)	-0.789 (-3.862)	-0.501 (-2.453)
$\beta 1$	-0.459 (-2.862)	-0.459 (-2.862)	-0.459 (-2.862)
R-sq (adj)	0.246	0.246	0.246
F	8.191	8.191	8.191
LM	1.219	1.219	1.219
$\alpha 2$	-1.194 (-5.847)	-0.789 (-3.862)	-0.501 (-2.453)
$\beta 2$	0.541 (3.373)	0.541 (3.373)	0.541 (3.373)
R-sq (adj)	0.321	0.321	0.321
F	11.380	11.380	11.380
LM	1.291	1.291	1.291

Note: All variables entered in logs. t-statistics in parentheses.

35 Although a ratio of 1.18 is equivalant to 54% of wealth held in personalty and 46% in realty, we know from table 4 that the composition of wealth overwhelmingly reflects the importance of personalty over realty.

VI

Businessmen who owned land in the late nineteenth century did not retain a significant proportion of their wealth in landed assets. In that sense they were distinct from hereditary landowners even though many entered high society through peerage. If there was any integration of landed and industrial wealth, it was more because aristocrats became entrepreneurs than businessmen became landowners.[36] Businessmen who bought land in the late nineteenth century were a comparatively small group.

Businessmen had few economic incentives to purchase land. Land was relatively unremunerative, unless mortgaged against credit, and the opportunity cost was government securities which were higher yielding and did not entail a cost of maintenance. A lot, however, depended on individual circumstances. Colliery owners were predisposed to own or lease land which was rich in mineral endowments while others acquired land for residence, status and leisure. Such diversity is reflected in a wide range of the share of wealth tied up in landed assets in this period.

We estimate that between 62% and 76% of total wealth for businessmen who were landowners was held in personal wealth. The composition of their wealth reflected the relative importance of personalty over realty. These values are not speculative and represent the results of an empirical investigation of wealth and landownership using a substantial database of businessmen, only a small number of whom purchased land on any scale. The quantitative evidence on land purchase suggests that those who did buy land were rich because of their personal wealth and not because they were landowners. Businessmen did not purchase land in the late nineteenth century on a scale which could be compared with their non-landed assets.

[36] There were of course other avenues of gentrification and in particular education was an important element in the assimilation of these two groups. Wealthy districts of the metropolis and large provincial cities also created a new type of gentrification which negated the need to purchase a country estate.

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