

Employers and the self-employed in the censuses 1851-1911: The census as a source for identifying entrepreneurs, business numbers and size distribution.

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Employers and the self-employed in the censuses 1851-1911: The census as a source for identifying entrepreneurs, business numbers and size distribution.

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1. Introduction.

This paper discusses how the surviving original manuscript Census Enumerators' Books can be used to derive information on employers and their workforce, self-employed sole proprietors, and the acreage of farms. It assesses how the content changes over time and has to be handled in database construction, focusing on issues of completeness; identification of employers, own account and workers; occupational coding; gender coverage; identification of portfolio businesses; partnerships; and location. The database for Entrepreneurs 1851-1911 referred to in this and other project Working Papers for ESRC project ES/M010953 *Drivers of Entrepreneurship and Small Businesses*, is an amalgamation of several sources listed in the acknowledgements. The main source is *The Integrated Census Microdata (I-CeM)* deposited at UKDA, SN-7481, but this is substantially modified, corrected and supplemented for all census years. For 1851 and 1861 other sources are used to infill approximately 110,000 truncated or omitted employer records that do not exist in I-CeM; and for 1871 the data on employers and occupations are entirely missing from I-CeM and have been fully sourced from elsewhere. For 1891-1911 substantial corrections are necessary to I-CeM, especially for occupation codes. This process of infill to create a complete database, as well as the corrections needed to the rest of I-CeM, is summarised in this and Working Papers 1 and 3 and 4.

The population censuses offer considerable potential to identify employers and the self-employed, provide estimates of their total numbers, and for census years 1851-81 give the employee numbers of their businesses and the acreages of farms. Information on employers was gathered by the census

in all years from 1851, but only for some years was any information published from the enquiry: in 1851, and then in variable format from 1891 onwards. However, even in the years for which some information was published, this was very limited and often subject to awkward aggregations, which are inconsistent over time. As a result, it is more useful to extract material on individuals from the original Census Enumerators Books (CEBs) - a process which is described here - rather than using the published tables. However, the published census tables are a starting point for comparative information and a valuable check on any CEB extraction in the database.

The population census was not a business census. It was administered by the General Register Office (GRO) to count the population, with information on industry and the economy a somewhat secondary consideration. As a result, the way in which the census gathered material constrains the sort of employer information that can be obtained. This paper reviews the material collected in the census and its value for identification of employers: as a raw data base for extraction using the CEBs, the comparability over time, and the potential value of using published tables as checks. England and Wales is discussed in detail, with differences in Scotland summarised.

2. What is contained in each census.

Note that in the following where quotes are used *all* emphases, and as far as possible the main text layouts, are maintained from the original census forms and instructions received by householders.

2.1 The 1851 Census

The earliest census that sought explicitly to differentiate employers from others was 1851. This census asked employers to write ‘master’ after their occupation with the numbers they employed. The precise instruction was:¹

‘In TRADES the Master is to be distinguished from the Journeyman and Apprentice, thus – “(*Carpenter – Master employing [6] men*);” inserting always the number of persons of the trade in his employ on March 31st.’

For farmers a similar instruction requested:

‘The term FARMER to be applied only to the occupier of land, who is to be returned – “*Farmer of [317] Acres, employing [12] labourers*;” the number of acres, and of in or out-

¹ ‘General Instruction’, Census of England and Wales, *Householder’s Schedule*, 1851.

door labourers, on March 31st, being in all cases inserted. Sons or daughters employed at home or on the farm should be returned – “*Farmer’s Son*”, “*Farmer’s Daughter*”.’

The term ‘master’ was not always a useful identification of an employer, and varied significantly for different occupations. It also varied in its relevance over time, being better understood and more widely used in the early censuses than the later ones. In practice the ‘master’ instruction seems to have been interpreted as two separate instructions: one for masters, and one for returning the number of employees. The term ‘occupier of land’ in the farmer’s instruction, although intended to apply solely to farmers, produced a range of replies from others, of whom the largest classes were agricultural labourers who also occupied land, and cottagers. In analysis of the CEBs the range of different interpretations made by respondents for terms such as ‘master’, ‘occupier of land’, and other potential inconsistencies has to be managed and coded appropriately. In the original census this was undertaken by the clerks at the GRO. For analysis of the original CEBs, the work of the clerks has either to be replicated, or alternative ways of treating the data have to be found. This issue runs through all of the census analysis discussed here.

For other sectors the census instructions gave 13 other categories. The way these were outlined suggests most respondents would have responded within categories for labourers/workers or as masters and farmers, as relevant. But in the case of five groups of employers, they might ignore the employer question: for (i) the ‘legal profession’; (ii) ‘medical profession’; (iii) ‘professors, teachers, writers, public writers, authors and scientific men’; (iv) ‘persons engaged in commerce, as merchants, brokers, agents, clerks, commercial travellers’; and possibly some (v) ‘workers in mines or manufactures, and generally in the constructive arts’. The last group should have been included in ‘trades’ but because mines, manufactures and ‘constructive arts’ are not explicitly mentioned in the other instructions, and the example given of this group in the instruction is a carpenter, it is difficult to interpret how respondents would have viewed the instructions, with some employers likely to have ignored giving employer status. As a result it is likely that in 1851 some people in these five groups ignored the request for employee numbers or statement of employer status. The project analysis for this year in fact finds a reasonably complete coverage, but the distinctions between ‘trades’ and the other five groups must be borne in mind in the analysis.

The 1851 census was also the first to explicitly acknowledge and attempt to differentiate people with more than one occupation. For employers this provides opportunities to assess the extent of portfolio businesses. The instruction read: ‘A person following MORE THAN ONE DISTINCT

TRADE may insert his occupations in the order of their importance'. Since there is no surviving set of coding instructions for this census, which were not transferred to TNA from the GRO, we cannot be sure how this instruction was interpreted in publications, but for 1851 one table is produced of the numbers declaring two or more occupations. This demonstrates that the GRO viewed the results as at least interpretable, although this table is not produced in subsequent years. Examination of the records in the database constructed for this project evidence that portfolio business are recorded in a very substantial number of cases that appear to match the expected frequencies that have been found in case studies and in other sources. However, as discussed in a later working paper, there are some systematic though small differences in the coverage of a few occupations, especially for females. Hence, although it is believed that the portfolio data obtained from the CEBs is as reliable as any other source, it does have some minor differences that have to be borne in mind in analysis. Note that in a few cases employee numbers are provided for each of the portfolio businesses, while in other cases the numbers clearly relate only to the first, and in further cases employees of all businesses in the portfolio have been added up.

2.3 The 1861 Census

The 1861 census retained the same basic structure and employer instructions, but attempted to take account of business partnerships for the first time explicitly. 'Employer' was now introduced as the descriptor, though 'master' was still used in the examples:²

'In TRADES, MANUFACTURES, or other Business, the Employer must, in all cases, be distinguished. – *Example: 'Carpenter – Master, employing 6 men and 2 boys;'* inserting always the number of persons of the trade in their employ, if any, on April 8th [the time of the Census]. In the case of Firms, the number of persons employed should be returned by *one partner only*'.

Farmers were instructed:

The term FARMER to be applied only to the OCCUPIER of land. Example - *Example: 'Farmer of 317 Acres, employing 8 Labourers and 3 Boys.'* The actual number of acres, and of men and boys employed on the farm on April 8th, being in all cases inserted. Sons or daughters employed at home or on the farm may be returned – "*Farmer's Son*", "*Farmer's Daughter*". FARM SERVANTS sleeping in the Farmer's house must be described in his schedule as "*Carter*", "*Dairymaid*", &c., as the case may be.

² 'General Instruction', Census of England and Wales, *Householder's Schedule*, 1861.

An out-door LABOURER working on the farm must be described as “*Agricultural Labourer*”, “*Shepherd*”, &c., as the case may be.

For other categories the instructions were similar in wording and number, and so some of the same five groups may have ignored the employer question. However, the separate identification of ‘manufacturers’ in the main instruction should have improved the coverage of these employers. This may make the 1861 census the first to fully cover trades and manufacturers. However, the result of, effectively, giving manufactures two separate instructions may have resulted in some following one, some the other, and (what was intended) some following both. ‘Constructive arts’ was replaced by ‘branch of arts and materials’, which would be read as applying to some construction industry workers but as in 1851 the results will be potentially mixed in completeness for different individuals and possibly for different enumerators. As for 1851, the project analysis for 1861 finds a reasonably complete coverage, but the distinctions between ‘trades, manufactures, or other business’ and other groups must be borne in mind in analysis.

The multiple occupation question was reworded slightly to read: ‘A person following MORE THAN ONE DISTINCT Business should insert his several occupations in the order of their importance’. This question has a different emphasis of ‘should’ rather than ‘may’, and by emphasising ‘business’ rather than ‘trade’ may be more useful for properly identifying portfolio businesses. Conversely, it may be less useful to identify those of multiple occupations as employers.

2.3 The 1871 Census

The instructions in 1871 were almost identical to 1861, except for substituting ‘master’ for ‘employer’ (reverting to that in 1851) and ‘workpeople’ for ‘persons’ in trade and manufactures.³

‘In TRADES, MANUFACTURES, or other Business, Masters must, in all cases, be distinguished. – *Example: ‘Carpenter – Master, employing 6 men and 2 boys;’* inserting always the number of workpeople in their employ, if any, on April 3rd. In the case of FIRMS, the number of persons employed should be returned by *one partner only*’.

For farmers the instruction was re-ordered and now explicitly included women; farm labourers were now included in a separate instruction:

³ ‘General Instruction’, Census of England and Wales, *Householder’s Schedule*, 1871.

FARMERS. – This term to be applied only to the occupiers of land, who are to state the number of acres occupied, and the number of men, women, and boys employed on the farm on April 3rd. being in all cases inserted. - *Examples: ‘Farmer of 317 Acres, employing 8 Labourers and 3 Boys.’* Sons or Daughters employed at home or on the farm may be returned - “*Farmer’s Son*”, “*Farmer’s Daughter*”. Men employed and sleeping in the Farmer’s house must be described in his schedule as *Farm Servants*.’

For the first time the instructions for different occupational groups were numbered. Trade and manufactures was 15 and farmers 12; there was also a slight reordering, with farmers now above commerce. The same five other groups of employers (now categories 6 legal, 7 medical, 8 professors, 14 commerce, and 10 workers in manufactures or mines) would still be potentially likely to respond to other instructions than that for category 15 for ‘trades and manufacturers’. Additionally ‘landowners’ (11) and ‘engineers’ (17) were separately instructed. Again, the project analysis finds a reasonably complete coverage, but the distinctions between ‘trades, manufactures, or other business’ and other groups must be borne in mind in analysis.

The main change likely to have significant effects for the previous census was the instruction to ‘LANDOWNERS. – Proprietors of land in England and Wales, being agricultural land, pasturage, moor, or woodland, *in addition to their rank or occupation*, to state that they are landowners. But no person to be so described in respect of land attached to a house or house, and not exceeding *one acre* in extent.’ This somewhat tortuously worded question mainly sought to identify those of rank who hand large holdings of land but had previously only returned themselves as ‘peer’, ‘magistrate’, etc. It should identify more large estate farms than previous censuses, thus filling a potentially significant gap, though some of these may have been previously identified under the categories of farm bailiffs or similar titles, who often returned themselves with the acres and employees of the estate on which they were employed. But the consequence may be that 1871 perhaps provides the first full coverage of all land owners, large and small. It also eliminated previous returns of small acreages by house owners.

Multiple occupations were now taken out of the list of the separate instructions and placed in the heading instructions for everyone, with a slight adjustment of wording removing ‘business’ (as in 1861) and using ‘occupations’: ‘A person following more Distinct Occupations than one, should insert them in the order of their importance’.

Although results from the employer question were not tabulated, the national pattern was tabulated for farm employees and acreages for 17 representative English counties, with a comparison with 1851.⁴

2.4 The 1881 Census

The 1881 instructions were almost identical to 1871 for trades and manufactures:⁵

‘In TRADES, MANUFACTURES or other Business, the Masters must, in all cases, be so designated. – *Example: ‘Carpenter – Master, employing 6 men and 2 boys;’* inserting always the number of persons in the trade in their employ at the time of the Census. In the case of Firms, the number of persons employed should be returned by *one partner* only’.

The farmer’s instructions were also similar to 1871, with a separate labourer’s category:

‘FARMERS to state the number of acres occupied, and the number of men, women, and boys, employed on the farm at the time of the Census. – *Example: ‘Farmer of 317 Acres, employing 8 Labourers and 3 Boys.’* Sons or daughters employed at home or on the farm should be returned – “*Farmer’s Son*”, “*Farmer’s Daughter*”. Men employed on the farm and sleeping in the Farmer’s house must be described in the schedule as *Farm Servants.*’

The census cover sheet gave different instructions for an extended list of 24 categories of different ‘rank, profession, or occupation’.⁶ Trades and manufacturers were now category 14, and farmers 11. As previously, the specific wording for other categories might discourage employer responses, now for a longer list of: legal and medical professions (categories 6 and 7), professors, teachers, writers (categories 8, 16 and 17), ‘persons engaged in commerce as merchants, brokers and agents’ (category 13), miners (category 16), engineers (category 17), artisans and mechanics (category 18), and weavers (category 19). As before, whilst many of these could respond also as employees under the generic trade and manufactures instructions, this might be less likely for miners, engineers, artisans and mechanics, and some weavers. The multiple occupation question was identical to 1871 and was again included in the header instruction.

⁴ Census General Report, 1871, pp. xliv-xlix.

⁵ ‘General Instructions’, Census of England and Wales, *Householder’s Schedule*, 1881.

⁶ Parliamentary Papers 1883, No. 43, vol. LXXX, Appendix C.

2.5 Overview and assessment 1851-1881

Although there were differences in detail in the instructions and layout of the census form, the censuses of 1851-1881 followed the same basic structure as far as they captured employers and should be reasonably consistent when combined in the database. However, the extent to which they will fully capture all employers may be deficient:

1. Trades and manufactures, and farmers, should be fully covered. There may be difficulties about how some of their workforce was categorised, but over 1851-1881 there should be a reasonably consistent database of employers for these sectors, and their employee numbers (except female employees, q.v. below).
2. For other sectors some employers may have ignored the instructions either to identify themselves as employers, and/or to give their employee numbers. Instead they could have returned themselves under the instructions for other occupational categories. This will be mainly an issue for the four categories of legal profession; medical profession; professors, teachers, writers, authors and scientific men; and persons engaged in commerce (merchants, brokers, agents, clerks, commercial travellers). It will possibly have a variable effect for miners, engineers and construction trades. The extent to which this occurred will probably be consistent across the different years, but it may be that the layout and numbering of categories narrows the potentially deficient responses in 1851 and 1861, compared with 1871 and 1881. However, checks on this in the project show that generally good coverage is achieved (see following Working Paper).
3. The result of, effectively, giving manufacturers two separate instructions over 1861-81 may have resulted in some following one, some the other, and some following both with some gaps in employer coverage where only the second instruction was followed.
4. The ‘constructive arts’ are likely to be confusingly covered in 1851, but generally should be included in trades from 1861, or at least 1871 onwards.
5. Female employers should respond to the instructions in the same way as males, though the gendered language of the questions may have discouraged this in some cases.
6. However, female employees identified through the employer question may return underestimates of the female workforce because the instructions requested only men and boys to be returned, and also changed the categorisation of farm and at-home workers. However, it appears from the 1881 pilot and subsequent analysis for this project that many masters returned under ‘men’ all of their employees, often also listing women and girls separately. Some parts of the

published 1851 census tables indeed included the additional female workforce, especially when it was very large.⁷ However, it is also clear from the actual CEBs, that many workers were not differentiated by gender, referring only to ‘hands’ or ‘labourers’ etc. Also, sometimes the workforce was defined as ‘women and children’ or ‘women and girls’ but then a total was given rather than broken down by these categories. This restricts analysis of workforce by gender in subsequent analysis.

7. However, in general (except for farms), the female workforce as a whole should be fully included because of the effect of detailed instructions to the householder to return female occupations irrespective of whether they were employers. For example in 1881 instruction 24 stated ‘WOMEN AND CHILDREN. – The occupation of those who are regularly employed from home, or who follow any business at home, is to be distinctly recorded. See also instruction 10 (which explained how ‘scholars’ should be returned). This instruction remained essentially the same over 1851-81, but the treatment of women in published tabulations differed for 1881 compared to previous censuses (see below).
8. Farmers are consistently defined throughout occupationally; however, the female farm workforce participation varies in how it was recorded.
9. A constraint relates to industry identification. The census was seeking information on occupations, not industries or sectors. However, it was noted by the GRO in 1911 that the industrial classification of activities was more closely followed over 1851-71, but from 1881 the occupational classification was more influential. But both personal occupations and industry classifications were deemed in 1911 to not fulfil their objectives completely.⁸ The revisions in 1901 led to a stronger emphasis on occupations, and this has continued up to the present, with little publication and analysis of industry (later to become SIC) codes until after 1911.

Accuracy of employer identification: The GRO commentary on the census noted inaccuracies in the employer responses. For 1851 the returns for masters were noted as ‘imperfect, with not all masters returning themselves’, whilst those working on their own account included ‘probably a certain number of masters who employ men, but did not state their numbers’. Similarly for farmers, it was recognised that there was ‘uncertainty ... as to whether the farmers returned all their in-door farm servants; and women and boys were included in some cases but not in others’.⁹ There were also difficulties about whether family members were correctly returned as working on the farm. To

⁷ e.g. Census Report, 1851, Regional tables.

⁸ See e.g. General Report, Appendices, 1911 Census, Cd. 8491, p. 97.

⁹ Census 1851, General Report p. lxxviii.

overcome this census clerks constructing the published tables were instructed to allocate any unoccupied *male* family members to farming employment if they clearly had no other occupational status; *females* were returned as farming employees if termed ‘farmer’s daughter etc.’ but as ‘domestic’ if listed without any occupational description. This practice continued until 1911.¹⁰ This may inflate the size of some farms by including what were essentially part time workers. However, none of the GRO’s clerical ‘corrections’ will be contained in the CEBs (although some pencil notes are visible these are not systematically captured in e-sources). The farm returns also included only those employed on Census day, and for women and children in ‘regular’ employment, so that many seasonal workers would be omitted. The GRO also criticised the general responses: ‘the great mass of individuals who filled up their own schedules in England were uneducated and suspicious of every question put to them’.¹¹ Where the returns were filled in by the householder themselves ‘who, too commonly, neither cares for accuracy or is capable of it’... ‘the most that it is reasonable to expect from the data ... is that they shall give the means of drawing such a picture of the occupational structure of the people as shall be fairly true in its main lines, though little value can be attached to the detailed features. It is not wise to demand ... a result for ... which it is unsuited’.¹² These concerns are generally believed to be overstated, but contain significant warnings for analysis, especially of small categories, small localities, or specialist occupational groups. These constraints may be particularly limiting for many employers, especially if female. Detailed discussion of actual accuracy relies on empirical assessment of the CEBs, discussed in later Working Papers. The overall conclusion from our analysis is that whilst there are constraints from the way either householders or enumerators responded to the various instructions, most employers responded fully to the instructions given. However, various limitations are identified and these are borne in mind in subsequent analysis. A detailed evaluation of the extent of under-recording is given in a working paper on long term comparisons.

2.6 The 1891 Census

The employer question was significantly modified in 1891 and subsequently. It was stated by the 1891 Census compilers that the old question relating to employer information over 1851-81 was ‘rarely’ filled in. Analysis in the 1881 pilot and the project database shows this to be totally

¹⁰ see Census 1911, Classified List of Occupation, p. vii

¹¹ William Ogle, Superintendent of Statistics for Census administration: in discussion of Booth, 1886, p. 442; see also S. S. Jeans, discussion contribution, pp. 441-2

¹² Census Report, 1891, Vol. III, p. 35

incorrect. Rather there was a deep GRO reluctance to include the question at all, partly because of costs of analysis (which partially explains why no analysis of the question had been published since 1851), but also because a lack of support from the Registrar General of the GRO. Brydges Henniker had replaced George Graham as Registrar General in 1880, and this shift had a number of consequences for the way in which the census was administered and tabulated.¹³ As a result the previous employer question was dropped in the form used 1851-81, and a new format was added to the occupation questions. The Local Government Board (LGB), under significant pressure from economists, business interests and other government departments concerned about industry and economic data, directed the GRO that in 1891 census the householder's return should contain a question which identified employers of others and those working for themselves as distinct from employee status. This introduced for the first time a question on employer 'status', in a format that has been developed and continued up to the present.

The LGB pressure ensured that the occupation questions were supplemented by asking each person engaged in any occupation to put a cross against one of three columns (numbered 7, 8, and 9) headed: 'employer', 'employed', or 'neither employer or employed'. These were provided under a title over the columns of 'Profession or Occupation', which should have resulted in all sectors of employers replying. Since it also applied to all householders it should also have covered both genders and all ages. However, this was introduced by a general instruction 5 included at the top of the form: that 'These three columns 7, 8, and 9, refer only to employment in trades and industries, and not to the employment of domestic servants'. This is the most explicit exclusion of other sectors for the period, and hence the 1891 census may have discouraged information to be given on non-trade and industry sectors. However, analysis of the 1891 CEBs suggests that all sectors were usually included. The rest of the specific instruction under general instruction 5 was:¹⁴

'A *cross* must be made in Column 7, headed "Employer", when a person is a master, employing under him workers in his trade or industry; in Column 8, headed "Employed", when the person is working in a trade or industry under a master; and in Column 9, headed "Neither Employer nor Employed", when the person neither employs other workmen in his trade or industry, nor works for a master, but works on his own account. Married women assisting their husbands in their trade or industry are to be returned as "Employed".'

This had the advantage of explicitly asking for distinctions between employers of others, own account self-employment, and employee status. It also included married women who were partners

¹³ See e.g. Higgs, 2005.

¹⁴ 'General Instruction', Census of England and Wales, Householder's Schedule, 1891.

or employers, though they may have been undercounted depending on how householders responded to the instruction ‘assisting their husbands’.

Despite many benefits of the new format, the prime limitation was that it lost the previous information on employee numbers, and acres for farms. It was also claimed by GRO to be not entirely successful. The GRO was reluctant to include this question and was very negative about it, in the Census Report stating that the new format proved rather unsatisfactory since in many cases no cross was entered in any column. This undoubtedly resulted from the separation of the questions into separate columns that each householder had to complete. Where the columns were marked, GRO claimed that two or three of the columns were sometimes crossed, and even when one column was crossed this was believed to be often in the wrong column. The Census administrators felt this could be intentional in many cases ‘to magnify the importance of their occupational condition’, especially as employers rather than employed. This resulted in ‘the otherwise unintelligible fact’ that some occupations had more ‘employers than employed, more masters than men’; e.g. builders; provisions, coal and many other dealers; and road contractors.¹⁵ As a result these returns were held to be ‘excessively untrustworthy’ and little use was made of them in the published tabular analyses.

The very negative appraisal of the quality of the employer returns by GRO census administrators is not borne out by analysis of the CEBs, as detailed in other Working Paper 4. The level of multiple box ticking was very low, and where it occurred it was usually an accurate record of multiple occupations, which case study comparisons with trade directories show are usually also recorded there. Ticking the wrong column was also low as far as can be deduced from plausible replies for each occupation type, and by comparison of the CEBs against trade directories and other sources (as described in a further Working Paper). The GRO’s assessment has already been questioned by Schürer (1991), who argued that the GRO did little to evidence their claim, and that multiple ticking of boxes would be valid in some cases, e.g. for sub-contractors and outworkers.¹⁶ It would also apply to some employers who had portfolios of activities, or had other occupations as employees. Schürer comments that the published tables on occupations by employer status suggest that: for males 9.6% were employers and 8.9% own account; for females 4.1% were employers and 17.6% own account. There were 5.3% of males and 10.3% of females who failed to answer the question. There is no published record of those who ticked multiple boxes but this can be estimated from the CEBs directly. These percentages from Schürer cover only the categories where GRO chose to

¹⁵ Census Report, 1891, Vol. III, p. 36

¹⁶ Schürer; 1991, p. 26; see also Garrett et al., 2001, p. 71

publish information on status. A fuller understanding comes from new analysis of the CEBs in this project, covering all occupations.¹⁷ This shows that for males 19.5% of the columns were blank, and 49.1% for females; males were 6.2% employers and 5.5% own account (and 68.8% workers); females were 1.8% employers and 6.8% own account (and 42.3% workers). Most blanks were people of young age including scholars, people beyond normal working age and explicitly retired, categories such as own means, unoccupied, and many female relatives of the head of household (reflecting the systematic bias to under-record female occupations). It is likely that the blank responses were also due to enumerator variations in thoroughness, particularly for women. However, it is complex to evaluate the extent of this. In a test on Devizes it was found that one enumerator (out of eight enumerators locally) recorded over half of the population as blanks (56%), but most of these were probably valid and his district may have covered an area where a blank response was more likely. Nevertheless, it is clear from comment in the 1901 census, and the improvements then made in coding, that the 1891 census may over-estimate employers and own account (see below). Indeed, the larger proportion of employers compared to own account in 1891 (males 6.2% vs. 5.5%) suggests this occurred. The view of William Grime and William Buchanan (respectively Ex-President of the Association of Registrars for England and Wales, and current President of the Association for Scotland) in 1900 was that ‘Our Enumerators reported last Census that large numbers of householders quite misunderstood and confused the terms Employer, Employed, etc. Possibly the popular terms Master, Servant, etc., might be better understood’.¹⁸ This claim is assessed in a further working paper, where comparisons of 1891, 1901 and 1911 using I-CeM can inform analysis in a way that was not available to Grime, Buchanan or the GRO at the time.

The different categories of 19 specific occupational instructions were somewhat adjusted in 1891. The 19 categories differentiated most occupations in the same way as 1851-81, but the term ‘trade and manufactures’ was not used at any point and nor was ‘farmer’. These individuals were now expected to just respond by following the other instructions; e.g. to identify their specific branch of activity. The only mention of farms came under instructions 9 and 10, respectively to return sons and relatives of farmers, and how to treat labourers. This may have led to some differences of response for ‘trade and manufactures’ and ‘farmer’ than previous censuses.

¹⁷ Working Paper 4, *Extracting entrepreneurs from the Censuses, 1891-1911*.

¹⁸ Correspondence of Local Government Board, Letter 11 January 1900, forwarded to the GRO enclosing Memo. by Grime and Buchanan for ‘Census Committee of British Registrars; Census 1901’ p. 4; TNA RG 19/2.

The multiple occupations instruction (general instruction 2) had slightly adjusted wording from 1871-81: ‘A person following several distinct occupations must state each of them in the order of their importance’. Similarly, the instruction concerning women and children (general instruction 4) retained similar wording to 1851-81. However, there was no specific instruction on how business partners should respond, which must have resulted in partners all responding in the same way leading to multiple entries for a given firm (this continues up to 2011), and would also have made it less likely to record partnership at all, with the likely total number of partners that are recorded reduced from earlier. Coding instructions were given to clerks to code partners as own account.

The results of the 1891 question were published in summary form; the first time an employer summary table was published since 1851. The published tables give female as well as male employers, own account, worker, and no statement. To prepare the published tables in 1891 the GRO coding instructions to clerks stated that:

‘There are no columns for this purpose [for clerks to identify employers, own account or neither] for the first five orders, and part of the sixth, in which they are not required, as the status is self-evident from the Heading; and no such separate abstraction is necessary, even in subsequent orders, *wherever a star is placed against the Heading*’.¹⁹ Later it is stated for coding occupations, that ‘If the Heading be one in which there are spaces for distinguishing Employer, &c., and there be *no star* against it on the Sheet, a second tick must be made for each person in the appropriate column’.²⁰

The result was publication that excluded many important sectors: there were no columns for employer status for the first five orders:

- I. Civil Service.
- II. Soldiers and Seamen RN.
- III. Professions (clergy, lawyers, medical, teaching, engineers, authors, painters, musicians and actors).
- IV. Domestic indoor servants.
- V. Commercial (merchants, accountants, auctioneers, sales/buyers, commercial clerks and travellers, bankers and insurance).

¹⁹ Instructions to the Clerks..., 1891 census; TNA RG 27/6, p.1; emphasis added.

²⁰ Ibid., p.2; emphasis added

For I, II, and IV this is to be expected, but not for III and V. The other more specific occupations excluded from published tabulations of employment status were:

- VI. 1. (whole sub-order) Railway engine drivers and other personnel.
- 2. (2 of 7 in sub-order) Coachmen/cabmen; and tramway service.
- 3. (2 of 5 in sub-order) Dock and wharf labourer; harbour, dock, lighthouse officials.
- 5. (main entry of sub-order) Messengers, porter, etc.
- VII. 1. (most of sub-order) Farmers, farm bailiff, agricultural labourer, shepherd, horsekeeper.
- 2. (whole sub-order) Woodmen.
- VIII. (1 of 4 in order) Game keeper
- XVI. 2. (1 of 6 in sub-order) Cellarmen.
- XVII. 5. (2 of 11 in sub-order) Weaver (undefined), factory hand (textile, undefined).
- XXI. 1. (whole sub-order) all miners.
- 2. (1 of 4 in sub-order) coal heaver, porter.
- 3. (5 of 13 in sub-order) Stone quarrier; slate quarrier; clay, sand, chalk etc. labourer; paviour & road labourer; platelayer & railway labourer.
- XXII. 2. (whole sub-order) General labourer.
- XXIII. (1 of 4 in whole order) Scavenger & crossing sweeper.
- XXIV. (whole order) Retired, pensioner, living on own means, others over 15.

It is clear that for many of these categories exclusion from employer status tabulation was correct: all were workers; e.g. orders I, II, IV, XXII, and XXIV. However, in most other cases the exclusion was a cost-saving measure in the tabulation process by GRO, with most having a potentially substantial proportion of employers and own account. It was not correct for GRO to assert that ‘the status is self-evident from the Heading’. This is only a restriction on the published tables. Despite the publications, inspection of the CEBs confirms that most categories responded fairly fully. This is to be expected as the householders and enumerators would have been unaware of the GRO coding instructions which were imposed on publications. Checks on the CEBs also confirm the general accuracy of the responses in 1891, despite the negative GRO statements. However, for these categories, including farmers, the lack of published tabulations of their employer/employee status gives a gap for checking purposes against CEBs.

2.7 The 1901 Census

Because of the GRO criticisms of 1891, the 1901 Census question introduced the employer information into the main household return as a single column. This column now had to be filled in with a written statement rather than ticking columns. There were 21 special instructions for different occupations, which were generally the same as for 1891 (and again excluded anything specific for farmers). But the key employer wording was now over the columns in the census form. The instructions were over the column for ‘Profession or Occupation’ column, which also had three sub-columns titled:²¹

Col. 6. ‘State the Occupation, if any, of each person (whether man, woman or child) ...’.

Col. 7. ‘Write opposite the name of each person engaged in any trade or industry, either

- (1) ‘*Employer*’ (that is, employing persons other than domestic servants)
- (2) ‘*Worker*’ (that is, a worker for an Employer); or
- (3) ‘*Own account*’ (that is, neither Employer nor working for Employer, but working on own account).’

Col. 8. ‘Write opposite the name of each person carrying on trade or industry AT HOME the words ‘*At Home*’.

This was an improvement on 1891, but had the same deficiency of no longer gathering employee numbers. It should have significantly improved identification of female employers, own account, and other female workers. The additional question on whether people were ‘working at home’ may also help identify home workers and home-based employers. It was apparently used by census clerks to reclassify some of the returns in 1911, but it appears that the information was not used in this way in 1901.

Multiple occupations were covered in the general instructions no. 2, which was identical to 1891: ‘A person following several distinct occupations must state each of them in the order of their importance’. But there was the addition of second sentence to instruct that ‘Magistrates, Members of Parliament, and Officials may state their official title, but should not omit to return their profession of ordinary occupation, if they have any’. The addition to the instructions may have improved the recognition of occupations where individuals previously only returned ‘rank’ descriptors. Farmers wives were now excluded if assisting husbands, but sons and male relatives were included. A similar but slightly different instruction was used for ‘working at home’, which was first introduced in 1901.

²¹ ‘General Instruction’, Census of England and Wales, *Householder’s Schedule*, 1901.

The results of the 1901 question were published in summary for males and females as in 1891 for own account, employer and employee; now also giving ‘at home’. The same classes of occupation were excluded from the published tables as in 1891, because the GRO chose not to tabulate them, except for two additional categories: ‘Laundry and Washing Service’ and ‘Machinist, Machine Worker (undefined)’ which were now tabulated. But farmers were still not classified into employers and own account. Checks on the CEBs show that the actual returns included information on farm employers and own account, and for all the other sectors, even though the use of ‘trade or industry’ continued. ‘Master’ was finally dropped from the instructions.

2.8 The 1911 Census

The census in 1911 was the first to have a fuller form for the respondent, and where the original form filled in by the householder survives and is the record now generally available (and included in I-CeM). For all the earlier censuses it is only the enumerators’ books that survive: the CEBs. It was also the first census to ask for the business of the employer, and for public bodies the name of the employer, so that census clerks could attempt to quality-control the information on employer status and add more detail. This marks a break with all previous census processes and the beginning of the foundation of the format for the modern censuses questions used to gather information on employer, own account or employee status. However, this information was the sole source for information on partner or director status, with no supplementary instruction to clarify these statuses, which will have resulted in omissions in this category. This has remained the case up to the present.

The instructions under ‘Profession or Occupation’ columns now numbered four. The first sought personal occupation: ‘precise branch of Profession, Trade, Manufacture, etc.’. The second requested ‘Industry or Service with which workers is connected’, with a long table of examples e.g. bricklayer was also asked to state if in a blast furnace, or a solicitor if in an insurance company. The third column was similar to 1901, as follows:²²

‘Whether Employer, Worker, or Working on Own Account:

Write opposite the name of each person engaged in any Trade or Industry:

- (1) ‘*Employer*’ (that is, employing persons other than domestic servants); or
- (2) ‘*Worker*’ (that is, a worker for an employer); or
- (3) ‘*Own account*’ (that is, neither employing others nor working for a trade employer).’

²² ‘General Instruction’, Census of England and Wales, *Householder’s Schedule*, 1911.

The question on working at home was retained as the fourth column. The multiple occupation question was identical to 1901, with only main occupation sought.

There was also an important general instruction to householders for these questions:

‘Industry or service with which connected.

This question should generally be answered by stating the business carried on by the employer. If this is clearly shown in column 10 [the occupation question above] the question need not be answered here.

No entry needed for Domestic Servants in private employment.

If employed in a public body (Government, Municipal, &c.), state what body.’

This additional instruction was subsequently viewed as being left to the discretion of the employee whether to answer, but in 1921 was directed as required to be answered. This indicates that the GRO viewed the 1911 responses as being deficient in not giving enough information in some cases. This suggests that whilst 1911 should give the best overall cover of all employers and own account up to that date, it may still have some incompleteness. However, GRO made great efforts to ensure employers and employees did give full information. Prior to the census, letters of instructions were sent to employers requesting that they provide ‘as complete a list as you can of the titles or designations by which workmen in ____ [industry inserted] are distinguished’, and asking for a listing of titles in separate occupations in ‘successive stages of manufacture’.²³

Multiple occupations were covered in the general instructions no. 1: ‘If more than one Occupation is followed, state that by which living is mainly earned’. This re-wording marks a break in how multiple businesses were included, since only the main source of income was asked. Some give more detail in their returns, but from 1911 it is less possible to develop a large scale analysis of portfolio businesses or occupations. The same is true for all censuses up to 2011.

The results of the 1911 question for employer status were published in summary for male and female as in 1891 and 1901. Many of the same classes of occupation were excluded from the tables for employers and own account as in 1891 and 1901, which GRO continued not to tabulate. However, there were now some exclusions from the published tables of detailed sectors that had been included in published tables in 1891 and 1901; e.g. many classes of conveyance. On the other hand, 1911 included status classified into employers and own account for several sectors not included previously, of which farmers and graziers were the most significant. However, the general

²³ Letter to employers, and memorandum; TNA RG 27/8 pieces 127 and 128, respectively.

breakout into employers and own account only for 'trade and industry' still remained. For the first time since 1851 there was a partial published regional breakout of tables by employer status for London, Yorkshire, and Lancashire, but not other counties. For farmers, as in 1901, the occupations of wives were excluded if assisting husbands, but sons and male relatives were included.

The coding instructions in 1911 made the first explicit efforts to use the 'working at home' information to re-code those believed to be 'workers', removing them from 'employer' or 'own account' because GRO believed that 'a number of trades and industries cannot be carried on by workers in their homes'.²⁴ There may have been some mistaken assumptions used by GRO in this reclassification, but the overall effect should be to make 1911 the most reliable years to (reasonably) accurately differentiate own account and larger employers in *published* tables. On the other hand, 1911 was the first year where the e-census return that is available is the original householder's schedule, and not the enumerators' books. This means that the original data available is much more varied in quality and complexity, and has no benefit from local enumerator controls. Although evidence of extensive GRO clerical cleaning markings can be found on the individual household returns, these are not included in I-CeM coding and therefore cannot be used except in individual case studies where the CEB is being scrutinised directly. This issue is discussed more fully in Working Paper 4.

Analysis of the effects on aggregate numbers of the differences between 1911 and earlier census is reported in later working papers. There it is shown, that as well as any real change in the proportions of own account female businesses, there was change in the way in which the returns were coded by census clerks. In most cases the result was to recode many own account workers to employee status. It would seem that either (i) the census coders were able in 1911 to remove some spurious own account workers from the returns (presumably mainly using the information given on 'at home', employer's business and local knowledge), or (ii) respondents were more accurate about replies, or (iii) there was a very large genuine change in sector employer structures. For some categories, of which milliners and shirt makers are the main cases, it is likely that (ii) and (iii) are insufficient to account for the large numbers reclassified so that some recoding occurred compared to earlier censuses. This issue is investigated in subsequent working papers.

²⁴ Census 1911, Classified List of Occupations, p. xi.

2.9 Overview 1891-1911

1. Many of the same general characteristics of the census for this period are the same as, or similar to, 1851-81, as summarised under the nine points made earlier (Section 2.5), including consistent occupational definition of farmers.
2. The chief difference of 1891-1911 censuses from earlier is the lack of employee numbers for employers, and lack of acreages for farmers.
3. The continued use of the term ‘trade and industry’ may have reduced the number of other sectors that responded as employers. Indeed the 1901 census report notes the instruction to clerks that ‘The information, it will be noticed, was only asked for in respect of persons engaged in “Trade and Industry”, and therefore Columns 12 and 13 only apply to a limited number of the occupations returned in Column 10.’ This relates to the employer/own account column (col 12 as referred to in this quote, column 7 on the form) and the home working column 13 (8 on form). This was an instruction to clerks, but is indicative of how the GRO process as a whole was orientated, possibly extending down to hoe individual enumerators operated. Hence, it can be expected that 1891-1911 will have some of the same potential problems of sector exclusions or partial exclusions as 1851-81.
4. There may be errors of over-estimation of own account self-employed and possibly of employers in 1891, and possibly also in 1901. The coding instructions in 1911 noted how categories that were believed to be ‘workers’ were removed from ‘employer’ or ‘own account’, but there is no evidence that this was as fully undertaken in 1891 or 1901 published tables. In 1911 additional coding instructions were used to increase the quality controls. Although the GRO corrections may not have been fully successful, they should give more accurate published numbers for 1911. However, none of the GRO corrections, if any, are available in the e-census records and thus efforts must be made to replicate the useful parts of the coding instructions from 1911 to increase accuracy of the data coding of the project database for earlier censuses. It is also clear that some of the GRO recoding was probably erroneous, as discussed in later working papers.
5. It appears that some own account female businesses were coded differently in publications for 1911 compared to 1891 and 1901, especially milliners and shirtmakers, as a result of coding corrections or other factors.
6. No published tables show farmers classified into employers and own account until 1911. The census CEBs should yield the information for 1891 and 1901.

7. The requirement to record multiple occupations was removed in 1911. However, many still recorded more than one occupation. Consequently, analysis of portfolio businesses is possible for all years from 1851-1911, though the sampling basis of coverage may vary, as discussed in later working papers.
8. The explicit instruction to identify partnership or membership of a firm was dropped from 1891, and the only instruction for how a director of a company should respond was to use their specific occupational category. Hence, partners and directors will record their occupation status as, e.g. lawyer, accountant, and their industry status as, e.g. insurance, cotton mill. Few people reported themselves as 'directors' or 'partners'. The examples given in the instructions of the occupation/industry responses do list some company cases, but not directors/partners: e.g. 'railway company' in four cases, 'hotel company' in one case, and 'insurance company' in one case. Other examples also potentially identify large concerns such as 'works' in four cases. There were also examples of 'Urban District Council', 'Government Dockyard' and 'Harbour Board'. As a result, and to be expected, the census returns do not provide many cases of partner, director or firm identifiers. Hence any large scale examination of these individuals has thus to use data enrichment, as described in other working papers. However, it is clear that a significant number of individuals do give partner status 1891-1911 which is available in I-CeM, especially where the household returns are available for 1911. This provides a useful sample of partners and directors for subsequent analysis.
9. The 1911 census differs in the extra information gathered on employer businesses. However, it is clear from the re-phrasing of instructions in 1921 that the 1911 responses were viewed as potentially deficient. Hence 1921 might be viewed as the first fully inclusive census in the modern form. However, the main 1921 changes were mostly relevant for census processing only of larger employers, so that it is likely that the 1891-1911 censuses did include good estimates of own account self-employed, though they may have required correction by clerks and consequently such corrections must be repeated when processing the CEBs (where checks on the CEBs suggest that these censuses generally had good householder responses).

2.10 Scotland

The definitions and instructions for the Census with respect to employers were generally identical in the Scottish Census to those in England and Wales, though the actual tabulations published could be different. The Scottish censuses are contained in I-CeM, except for 1911. For 1851, the only early year to publish employer numbers, for Scotland the total employers are only given for nine principal towns. The limited publications resulted, as in England and Wales, from judgement that the returns were not very accurate: the partial returns by masters of the numbers in the employ, which were judged ‘only partially attended to’.²⁵

In 1891 the published tables for employers included all returns, with disaggregations for counties and Burghs over 10,000 population. In 1901 the published tables included only Burghs of 30,000 and upwards. Full Scottish tables for employers were published from 1911. As in England and Wales the published tables for 1891-1911 exclude the non-trade and manufacturers.

Overall the Scottish census will have the same constraints and potential as that in England and Wales, and should be compatible in almost all details. This makes development of full analysis of Great Britain possible across the two census processes.

3. Summary of issues of comparability and definition over time

Given the different questions used and other changes between censuses it is impossible to create an entirely aligned database providing a fully comparable time series. However, very good approximations to a consistent time series can be achieved especially when working with the original CEBs which allow individuals to be extracted and aggregated in a format that can impose more consistency over time than attempted by GRO. This is the approach used in the database. However, when making comparisons with the published GRO tables, alignments have to be introduced to make comparisons possible. The comparability between years is summarised in Table 2 for the actual questions asked by the census; and Table 3 summarises the main published tables that are available. The following discussion summarises the effects of changes in definition on measurements of the main categories.

²⁵ Scotland Census, Summary Tables, Table XXXI, p. clxxx.

Census year	Employers of others identified	Employee nos. & farm acres collected	Own account explicitly identified	Out-workers included	Sectors covered for employers and own account	Female employers included explicitly	Female employees included	Partners identified explicitly among employers	Co. directors explicitly excluded	Portfolios
1851	√	√		Not explicit	Trade, manufactures, farms; others partially	√ but gendered language may restrict	√ but may be partial	Partially by instruction and self-election	Self-excluded as non-owners	Rank, main and others in order
1861	√	√		Not explicit	do.	√ do.	√ do.	do.	do.	do.
1871	√	√		Not explicit	do.	√ do.	√ do.	do.	do.	do.
1881	√	√		Not explicit	do.	√ do.	√ do.	do.	do.	do.
1891	√		√	Not explicit	do.	√	√	v. partial	do.	do.
1901	√		√	Not explicit	do.	√	√	v. partial	do.	do.
1911	√		√	Not explicit	do.	√	√	v. partial	do. and coded by clerks to OA	Only main, but some hhds include all

Table 2. Main information on employers *collected* by the original census questions in England and Wales and available in CEBs.

Census year	Employer nos.	Nos. of Self-employed/ own account	Out-workers tabulated	Part-time excl.	Male & female employers	Female employees included in occupations	Retired
1851	√		Not explicit	√	Only male	√ but partly partial	Included in occupied
1861	√		Not explicit	√		√ but partly partial	do.
1871	√		Not explicit	√		√ but partly partial	do.
1881	√		Not explicit	√		wife & daughter workers=unoccupied	In unoccupied
1891	√	√*	Not explicit	√	√	√ but partly partial	Separate category
1901	√	√*	Not explicit	√	√	√	do.
1911	√	√+	Not explicit	√	√	√	do.

Table 3. Main information on employers *published* in the census Reports in England and Wales
(* ‘trade and manufactures’ only until 1901; + ‘trade and industry’ and farming in 1911).

3.1 *The self-employed*

In early Censuses the self-employed were those working ‘on their own account’ plus ‘employers’ and/or ‘masters’. Although changed slightly in terminology and expanded in detail to gain more occupational information, the definition has remained the same since 1891 up to the present. From 1911 the ‘working at home’ question was used in tabulations to reallocate some to employee status. This was carried forward to the present.

3.2 *Employer size*

The only early Census to publish detailed categories of *Male* employers (but not females) by the size of their workforce was for 1851. This was a partial analysis which has benefit chiefly as a check on extractions from the CEBs from I-CeM. It gives a detailed firm size distribution (though restricted to ‘trade and industry’, farmers, and men only). For ‘industry and trade’ the categories tabulated range for 0-9 employees in single employee steps, thus allowing the smallest firms to be aggregated to different modern classifications. Tabulations then give employers as 10-19, 20-29, 30-39, 40-49, 50-75, 75-99, 100-149, 150-199, 200-249, 250-299, 300-849, 850 and over. For farmers the same categories are used to 9 employees, then in five employee groups (10-14, 15-19, etc.) to 54, with the largest farms group as 60 and over (the largest actually had 151 in 1881).

3.3 *Partnerships*

No published information on partner numbers is recorded in any census. However, they are partially identifiable from the CEBs. The way they were dealt with in instructions and coding also influence counts of business numbers.

Identifiable partnerships. Over 1851-81 partnership details should have been returned by the senior or one partner. The other partners should have given only their occupational information: e.g. the other partners in a haberdashery where one partner had given the requested information on employee numbers should have only stated ‘haberdasher’. However, the instruction was ambiguous and many non-senior partners also returned themselves as partners, and some of these also gave employee numbers. A paper on partnership uses the CEBs for 1881 to extract all those with

‘partner’, ‘joint’ and similar titles, or where entries were duplicated and can be matched with each other as ‘de facto’ partnerships operating the same business.²⁶ That paper shows that the CEBs are useful in allowing some partners in partnerships to be identified, and also their family or other relationships extracted; but this is only a partial sample. After 1881 a smaller proportion of partners can be identified explicitly. They will almost always be solely recorded to the occupational category: as self-employed employing others, or self-employed on own account not employing others. Some may be identifiable in 1911 using the ‘industry’ variable, where some respondents stated their business’ name; however, this will not be complete as it is reliant on individuals reporting firm names which they strictly did not have to do. The CEBs do allow useful samples of partners to be extracted for 1851-81, as well as 1891-1911, but the size and representativeness of the ‘samples’ available has to be carefully managed in analysis.

Business numbers. For business number calculations using the CEBs there is a level of duplication between partners that has to be managed. It should also be noted that not all partnerships are identified, so that the CEBs only provide a partial extraction of all possible partnerships at the time. For 1851-81 estimates are developed of the proportion and number of partners that returned themselves explicitly (and hence are identifiable as self-employed and /or employers), and those that are invisible under their occupational descriptor (and hence appear as employees).

For 1891-1911 the explicit instruction to identify partnership or membership of a firm was dropped. Partners would record their occupation status as, e.g. lawyer, accountant, and their industry status as, e.g. insurance, cotton mill. They would also tick the columns (1891) or write in ‘employer’ or ‘own account’ (1901-11). The CEBs record some ‘partner’ statuses. Partners employing no-one else should be included in the self-employed as own account: this will include duplicate entries. Partners employing others should be under employers, again with duplicate entries. Some adjustment to both categories is needed to obtain consistent business numbers.

3.4 Companies

No attempt was made by the census to identify the relationships between directors of limited companies and their company. This has relevance for identifying business proprietors and the count of business numbers. Over 1851-1901 there was no census instruction explicitly referring to

²⁶ Bennett, 2016.

companies and their directors (the only reference to ‘firms’ was to ‘partners’). In the CEBs a few individuals did write in their relationships, but the proportion is very small. For 1911 the new instructions to identify employers by name applied explicitly only to public bodies: ‘If employed in a public body (Government, Municipal, &c.), state what body’. Hence some employer information is available from 1911. However, the only systematic method to identify company relationships is through using other sources of company directors and then identifying those individuals in the census records. This enrichment process, which leads to an expanded database, is discussed in a separate Working Paper.

3.5 Multiples, branches and separate premises.

No attempt was made in the census to take account of business with multiple locations until 1931, though multiple shops were separately enumerated from 1901. Over 1851-81 it was (implicitly) assumed that, if a business had multiple locations, the employees would be aggregated into the single employer’s return (or the senior partner’s) at their point of residence. Over 1891-1911 the count of employers would similarly aggregate that status over all locations. Over 1851-1911, therefore, multiple business locations, where identified at all in the census under an employer, will be returned as a single business. Hence, there should be no double counting in the census of those employers who had different premises. However, as a result multiples/branches will not be identifiable through employers, and employers will be identifiable only to their place of residence (or where they were away as visitors). Some branches may be identifiable by use of descriptors such as ‘manager’ and ‘agent’ but this is not used in the entrepreneur database.

3.6 Other changed definitions

- The census excludes employers of domestic staff from definition as employers for all years (though treatment of wife and family workers differs; see below under domestic staff). This differs from some modern definitions in some government statistics.
- The census includes retired for 1851-71 who were instructed to include their former occupation which were then added into tables; e.g. in 1851 ‘persons of advanced age who have retired from business to be entered thus – “Retired Silk Merchant”, “Retired Watchmaker”, &c.’ This allows retired to be treated as included or excluded in analysis by selecting their

descriptor strings. However, in 1881 these were entered under the general category ‘Persons following no profession, trade or calling’ (category 23 in 1871-81). Although, this was very incomplete as many older people had blank entries, or were recorded as ‘annuitants’, ‘living on own means’, ‘on savings’ etc., it does mean that 1881 is a slightly different year for comparisons. In 1891 retired was taken into the header of general instructions (no. 3). In 1901 there was a specific instruction (20), but in 1911 it was back in the general instructions. Throughout the period 1851-1911 the instruction remained essentially the same, except in 1911 an addition to the wording requested that ‘RETIRED OR PENSIONED ... the present occupation, if any, of pensioners should also be stated in all cases, as “Army Pensioner, Bank Porter”, etc.’. This gives potential in 1911 to analyse both current and former occupations, but otherwise maintains a stable definition of the retired. However, former occupations were excluded in published tables in 1881 (although not for retired clergy or medical practitioners until 1911). It was estimated by census administrators that the inclusion of the retired from the occupied for 1881, as followed in earlier years, would have resulted in an increase in the total occupied of about 2% compared to 1871 and earlier.²⁷

- Changes in school leaving age over time influence those recorded as occupied (see below).
- There were changes of female inclusion in occupations over time; this is addressed in each of our working papers as it arises, and in specific analysis of female entrepreneurs. In summary, from 1851 until 1881 women were included reasonably fully following the instruction ‘the occupations of women who are regularly employed from home, or at home, *in any but domestic duties*, to be distinctly recorded’. In 1891 ‘the occupations of women and children, if any, are to be stated as well as those of men’; but in 1901 there was no explicit instruction on women’s’ occupations at all.²⁸ Over 1851-71 in published tabulations there was a strong tendency to relate occupations to that of the husband or head of household.²⁹ However, from 1881 more women were removed from the published tables, and a large ‘unoccupied’ category was introduced which absorbed many. Even with the improvement in instructions from 1891, there is doubt about how inclusively women’s work was recorded. In 1881 for example, female relatives on farming were excluded, even if stating ‘farmer’s daughter’ or ‘farmer’s wife’, whereas a ‘farmer’s son’ would be tabled as a farm worker or farmer. The instruction to return ‘regularly employed’ is believed to have been interpreted as excluding

²⁷ Bellamy, 1953, p. 307; Woollard, 2002, p. 443.

²⁸ Higgs, 2005, p. 101-2.

²⁹ Higgs, 2005, p. 156.

part time, seasonal work, and those not receiving formal pay.³⁰ Whilst it is uncertain how this was treated in practice it probably resulted in many female occupations being under-recorded.³¹ Similarly the instruction that if a wife or daughter of a farmer was working on the farm they be recorded as ‘farmer’s wife’ or ‘farmer’s daughter’ resulted in systematic under recording in this sector, and it is believed that the same method was carried over into female workers in domestic businesses such as shops and lodging houses. In other cases the enumerator applied the same occupation to wives and all other members of the household which may have over-recorded the extent of female contribution.³² In many areas it is believed that enumerators systematically omitted the occupations of married women, leaving them blank or just recoding ‘wife’. This seems to particularly affect home manufacturers, farm and field worker, and domestic service. On the other hand, where the occupations are recorded it is unclear whether they were supports to the family or were directly employed in the market-facing part of the household’s trade. This is particularly unclear for domestic servants, where the large number on farms or employed in shops may indicate they doubled as both domestic and business employees, whether kin or non-kin. This feature is examined in several analyses in subsequent working papers. For domestic servants the instructions varied; in 1851 probably encouraging domestic staff to be recorded as ‘domestic’; in 1861 domestic employees who were sisters, daughters or other relatives over 50 were to be recorded as ‘no stated occupation’, and those under 50 as ‘relatives at home’; in 1871 they were recorded to their specific occupations of servant, housekeeper, etc.³³ For single women there appears to be more recording of occupations, particularly factory work, but domestic, farm and field work was probably also frequently omitted. Higgs demonstrates these features and infers that variations in recording were systematic between enumerators, though probably relatively consistent within any one enumerator’s returns, with errors reaching 50% of the women returned as blank in some CEBs.³⁴ Analysis in this project finds the problem to be widespread, but its extent is relatively limited in most districts. From 1911 the census becomes a reasonably reliable count of employers and the occupied, even for women.³⁵

- For 1851-71 the census included workers at home and on the farm as full employees if they were full time; but were excluded if part-time. However, in 1881 housewives and daughters were

³⁰ Higgs, 2005, p. 101.

³¹ e.g. Roberts, 1988; Anderson, 1999.

³² Higgs, 1987, p. 68.

³³ Higgs, 1987, p. 70-1.

³⁴ Higgs, 1987, p. 63-8.

³⁵ Hatton and Bailey, 2001, p. 105.

assigned to ‘unoccupied’ in published tabulations, even when full time in a business or farm. More information is often available in the CEBs than was published, but the instructions to householders would have reduced the numbers of wives and daughters returned. The change for housewives was made because it was believed that there was some double counting of housewives and daughters as both in home work and as domestics. The change makes the published domestic and unoccupied sector non-comparable with earlier censuses, especially for married female occupational participation.³⁶ Some the CEBs do record most of the married women’s occupations, and the remarks by the census administrators acknowledge that home work for a husband’s or other businesses was being reasonably fully recorded. This is found to be the case in most of our analysis of entrepreneurs.

3.7 Geographical coverage

Employer locations in the census are all based on the place of residence of the employer (or where they made their return, which could be in a second home or as a visitor elsewhere). This would not be the same as the business location unless the employer lived on the business premises or nearby (which most small business proprietors indeed did). For almost all small businesses and the self-employed own account this distinction will be unimportant because they lived and ran businesses in the same parish or nearby. However, for larger businesses this will lead to a level of misallocation of where the business operates. This will be a significant problem for the larger towns and cities, especially London, and for some sectors; e.g. mining, which had mainly absentee owners. For London in particular it will lead to a misattribution to location of a business that could be in any other part of the country. It suggests that care must be taken in interpreting location information, particularly for the larger businesses.

For directors the data enrichment should give residential address, and linking this to the company will attribute the business to the personal address, though this again may be different from where the business mainly operated. For incorporated businesses the registered address was often in London (or Edinburgh for Scottish businesses; Truro for Stannaries), and many proprietors were also located in London. However, as discussed above, companies are generally excluded from the census and will only enter analysis through data enrichment where their area of residence and operations can be coded separately.

³⁶ Bellamy, 1953, p. 306; Hakim, 1980, p. 557.

3.8 Sectors (see also *Farmers*, 3.9 below)

The sector structure of the Census was divided into a series of 24 ‘orders’ and ‘sub-orders’, referred to as ‘classes’ 1851-1891. The sector definitions were significantly changed in detail between 1881 and 1891 by amalgamating many previous subcategories. The 1901 classification is similar to 1891. However, in 1901 a start was made on trying to improve the occupational classification, chiefly by attempting to separate ‘makers’ and ‘dealers’. For the whole period 1851-1911, however, it is not possible reliably to separate makers and dealers, and hence to fully differentiate the manufacturing and service sectors.

It must also be borne in mind that the census was surveying occupational categories, not industries or sectors. Assessment of the industry (later to become SIC) codes was not attempted in the census until after 1911 (an in a preliminary form in 1911). However, the occupational codes over 1851-1911 can with care be translated into sectors for comparisons with later analyses, and for industrial interpretations. The way in which these difficulties are handled in the analysis for this project is summarised in Working Paper 5 on occupational and industry classification.

A more significant sector difficulty is potential differences in consistency of inclusion of employers over time. Over 1851-1911 the employers’ returns explicitly included employers only in ‘trade and industry’ (classes III-XIV in 1851). Farmers also had employer-employee information collected 1851-1881, although this was only published in 1851 and in 1911. Although other employers completed the census request and can be found in the CEBs, there was potential to under-record the total number of employers and collect their employee numbers, leading to potential gaps in information and sector inconsistency. The potentially excluded categories that might give not employee information were professions such as doctors, lawyers, teachers, actors and reporters, engineers and surveyors, artists and architects, photographers and performers. Also potentially excluded were the workforces of merchants, brokers, agents, auctioneers, salesmen, commercial travellers, insurance and bankers, and all railway proprietors; probably also the workforces of many mine employers and some in ‘constructive arts’ might be under-recorded. The potential levels of inconsistency over time and how they can be overcome is discussed in a working paper on long term comparisons.

3.9 Farmers

Employee numbers. The main difficulties with extracting farmers from the early censuses relate to how farm workers were recorded, particularly changes to how gardeners and farmers' relatives were treated. This affects consistent assessment of the employer size on farms and sector coverage.

Some analysis of the issues was undertaken by the GRO. However, this was based entirely on comparing published tables, and hence responded as much to differences in clerical coding used by GRO as to actual census responses. Working with the CEBs 1851-1901, and householder returns for 1911, reduces the issues of inconsistency considerably. The main issues to be considered in our analysis are:

1. Consistent method of including farmers' sons and other male relatives under 15 years, and female relatives of all ages who were returned as assisting in the work of the farm (including wives). For 1851-71 the female family workers on the farm, and other relatives by age, that are excluded in the census tabulations should be recoverable from the CEBs. These factors do not affect identification of employers and own account.
2. Consistent treatment of farm-bailiffs and foremen; and the treatment of farmers' sons and other male relatives where performing the duties of agricultural labourers as employees.
3. Better differentiation of domestic gardeners from market gardeners and other gardeners.
4. Better identification of carters and wagoners on farms as primarily in carrying rather than farming.
5. Systematic treatment of the retired on farms (as for other occupations).

4. Conclusion.

This paper examines how the census can be used to identify employers and the self-employed, to provide estimates of their total numbers, and for 1851-81 to estimate the employee numbers of their businesses and the acreages of farms. Comparison of the publications of the census and how individuals were recorded in the original Census Enumerators Books (CEBs) suggests that more consistent and accurate estimates can be obtained through use of the latter. These estimates form the basis of the database for this project. In construction of this database from the CEBs the range of different interpretations made by respondents for terms such as 'master' can be managed and

coded appropriately. For our analysis of the original CEBs, the work that was undertaken by the clerks at the GRO to ensure consistency of census interpretations has either to be replicated, or alternative ways of treating the data have to be found. This issue runs through all of the census analysis discussed here. Other Working Papers examine how the actual extraction process operates to yield the final database, and how it was managed to control consistency, and accuracy of estimates.

As noted at the outset, the population census was not a business census, with the result that the way in which the information was gathered constrains the business information that can be obtained. However, as clear in this paper, the census has great potential value for identifying employers and the self-employed.

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The I-CeM database referred to for 1851-61 and 1881-1911 is a corrected version derived from K. Schürer, E. Higgs, A.M. Reid, E.M Garrett, *Integrated Census Microdata, 1851-1911, version V. 2 (I-CeM.2)*, (2016) [data collection]. UK Data Service, SN: 7481, <http://dx.doi.org/10.5255/UKDA-SN-7481-1>. This is enhanced from E. Higgs, C. Jones, K. Schürer and A. Wilkinson, *Integrated Census Microdata (I-CeM) Guide*, 2nd ed. (Colchester: Department of History, University of Essex, 2015). Further coding errors have been corrected and improvements added as part of the entrepreneurship project.

The I-CeM data for 1851 and 1861 are infilled for gaps and further enhanced, and the data for 1871 are entirely derived from special tabulations from other sources: see Working Paper 1.

The data used for the 1881 pilot derives from Schürer, Kevin and Woollard, Matthew (University of Essex) (2000) *1881 Census for England and Wales, the Channel Islands and the Isle of Man (Enhanced Version)* [computer file] UKDA, SN-4177, transcribed by Genealogical Society of Utah and Federation of Family History Societies; which has some re-coding and correction at Campop.

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