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35. For an explanation of the pressures this process brought see *Departmental Committee on Increases in Rentals of Small Dwelling Houses* (P.P. 1914-16, XXXV), Evidence of Gillies, Q. 245; Petrie, Q.Q. 1597-8; Scrimgeour Q.Q. 1698-1700. E. Cooney, 'The building industry' in R.A. Church, ed., *The Dynamics of Victorian Business: Problems and Perspectives to the 1870s* (1980), also makes the point about matching bond maturity and renegotiation dates as a source of bankruptcy for small builders.
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He that runs against time: life expectancy of building firms in nineteenth century Bristol

by C.G. Powell

'He that runs against Time has an antagonist not subject to casualties.' The implications of Dr. Johnson's aphorism were seldom more clear than in the Victorian building industry. Builders' vulnerability to failure was notorious¹ and indeed remains so. Despite this there seems to be no firmly based view on the life expectancy of typical firms, beyond a vague agreement that it was likely to be short. The following study attempts to examine life spans of building firms in a large city between 1825 and 1901. The opportunity is taken also to examine briefly some related aspects of ownership and type of firm. The study is of a whole population of firms, and is thus in contrast to an approach often taken — viz. case studies of individual firms, which are often selected in the light of their commercial success. The aim is to seek a broad view of the industry as a cohesive whole rather than a narrower view of discrete or fragmented parts. It is hoped that the broad view will give due weight to the nature and experience of typical firms, which are easily rendered invisible by the brilliance of exceptional ones.

Sample of firms

The study is of the building industry of Bristol, a major provincial centre which grew almost fourfold between 1821 (when the population was 85,000) and 1901 (when it was 329,000). Some other major centres grew more rapidly than this, among them Birmingham, Manchester, Liverpool and Sheffield. The generally moderate economic and demographic growth of Bristol may be assumed to have been associated with equally moderate rates of building activity. Nevertheless as the population increase implies, the total volume of nineteenth century building

in the city was substantial.

A sample of Bristol building firms extant at any time during the period covered by the study was derived from commercial directories². These sources possess some shortcomings among which were possible unreliability, especially in earlier editions, and lack of indication of sizes of firms³. Any inaccuracies may be assumed to affect most the smallest and shortest-lived firms, especially in the early part of the period. Larger firms seem less likely to have been overlooked or inaccurately recorded in the directories. It follows that any bias from this cause which the sample may contain would tend to understate the numbers of small firms and possibly exaggerate the shortness of life of some others. The study was concerned with three categories of building trade listed in the directories. These were carpenters, builders and contractors. Carpenters were included in the study because the term appears often to have been used synonymously with that of builders. Categories underwent detail changes from time to time so that 'carpenters' became variously 'carpenters and joiners, see also builders etc.' and 'carpenters and undertakers'. Similarly 'builders' became 'builders, see also carpenters', and 'builders and contractors'. The separate category of 'contractors', significantly, did not appear until the 1870s, but 'builders' and 'carpenters' (and their variants) appeared consistently throughout the period. An unknown proportion of firms in the sample were active also in fields outside building, for example as undertakers, although their number and volume of work was probably insignificant (those undertakers listed separately from carpenters in the directories were, of course, excluded from

the sample). Some firms would have been small jobbing and repair concerns which contributed only on a very small scale, or only intermittently, to new building. The task of distinguishing such marginal firms from those in business on a larger scale was not attempted in this study. Some of the smallest are likely to have excluded themselves, in a sense, by failing to be included in the directories.

Initially the sample consisted of firms recorded on any occasion in the year 1825 and every tenth year thereafter to 1895. Later, in order to permit a closer understanding of change over time and also to allow a cross-reference to census data, the sample was supplemented by adding firms recorded in 1831 and every tenth year thereafter to 1901. Occasional lapses in the record of firms between one sample year and the next were assumed to be evidence of a principal moving into and out of self-employment. Where lapses were prolonged and continuity lost, the firm was assumed to be a new one when it eventually reappeared. Confusion of identities of firms was possible where principals had common names (there were 22 'Williams'). The effects of this were compounded when changes of address were frequent, and in some cases it was necessary to refer to successive annual editions of directories for clarification. In extreme cases a family predilection for moving house accompanied a similar predilection for separations and reunions between generations of fecund business partners, and so ambiguities of identity and ownership of a few firms could not be removed entirely. Where doubt persisted despite close checking, the assumption was made that firms were independent and separate rather than one and the same. As a result the study is more likely to overstate the total number of firms and their shortness of life than to understate them.

Numbers and types of firms

The number of firms recorded in the sample was 1,436. In 1825 there were 141 firms and in the next sample year of 1831 74 new firms were recorded as having commenced trading,

while 49 of those existing in 1825 had terminated. The total of firms extant in 1831 therefore was 166. In the following sample year of 1835 the number of firms extant fell slightly, but grew successively thereafter to reach 200 firms in 1851. Growth then faltered, but resumed in 1865 and, except for one small check, continued to grow to a peak in 1885 when the total of extant firms was 351. The number then fell considerably, but climbed again in the remaining decade to reach 343 firms in 1901. This data is tabulated in Table 1.

Table 1 also shows the number of firms extant by year, classified according to main trade, i.e. carpenter, builder, contractor or a combination of the three. The largest single main trade was that of the carpenters, although their numerical dominance was challenged at the close of the period. The same trade also was the most prone to fluctuations in numbers, in contrast to the other trades which showed a steadier growth. The trade of builder grew consistently for rather more than the first half of the period, but then tailed off except for an upturn at the close. The trade of contractor grew gradually and steadily after a late first appearance. Firms which embraced more than one main trade, or which changed main trade, were more likely to have commenced as carpenters than any other trade. However, relatively few remained as carpenters by the time that they terminated. The implication is that a common route by which to enter the industry was to begin trading as carpenter, and then to diversify or change builder or contractor. (Fig. 1)

A large majority of firms in the sample, 1,280 or 89 per cent, were in the name of a sole principal. This proportion included those firms in which one individual was succeeded by another during the life of the firm. The remaining 156 firms were jointly owned. At no time before 1871 did the proportion of jointly owned firms extant exceed 8 per cent of all firms extant. During the remainder of the period the proportion gradually increased, to pass 15 per cent in 1901. Over half (92) of the 156 jointly owned firms bore surnames of partners in which both (or all) partners had the same name. A majority of these partner-

Table 1. Number of firms by year and type

Year	Number of firms						
	Total extant	Total commenced	Total terminated	Carpenters etc. extant	Builders etc. extant	Contractors etc. extant	Mixed trades* extant
1825	141	—	—	103	6	—	32
1831	166	74	49	110	12	—	44
1835	155	35	46	104	9	—	42
1841	173	65	47	116	8	—	49
1845	191	60	42	130	13	—	48
1851	200	76	67	115	28	—	57
1855	191	42	51	103	28	—	60
1861	188	57	60	90	31	—	67
1865	204	52	36	100	37	—	67
1871	295	171	80	140	70	5	80
1875	299	68	64	136	72	7	84
1881	290	136	145	116	66	9	99
1885	351	158	97	140	67	12	132
1891	291	81	141	79	62	17	133
1895	292	68	67	75	67	20	130
1901	343	152	—	93	104	37	109

*Defined as: firms recorded in more than one of main categories of carpenter, builder and contractor, and firms changing over time from one main category to another.

Source: *Mathews's Bristol Directory* (Bristol, 1825 etc); *Wright's Bristol Directory* (Bristol, 1881 etc).

ships appear to have been between father and son, and presumably most of the remainder were between brothers. About one third (51) of all jointly owned firms were in the names of apparently unrelated individuals. This type of joint ownership was more common early in the period than later. There were 13 firms

which were described as companies and these appeared towards the end of the century. In the small minority of cases of jointly owned firms which changed from, say, partnership between two unrelated people to partnership between father and son, only the initial joint ownership was recorded above.

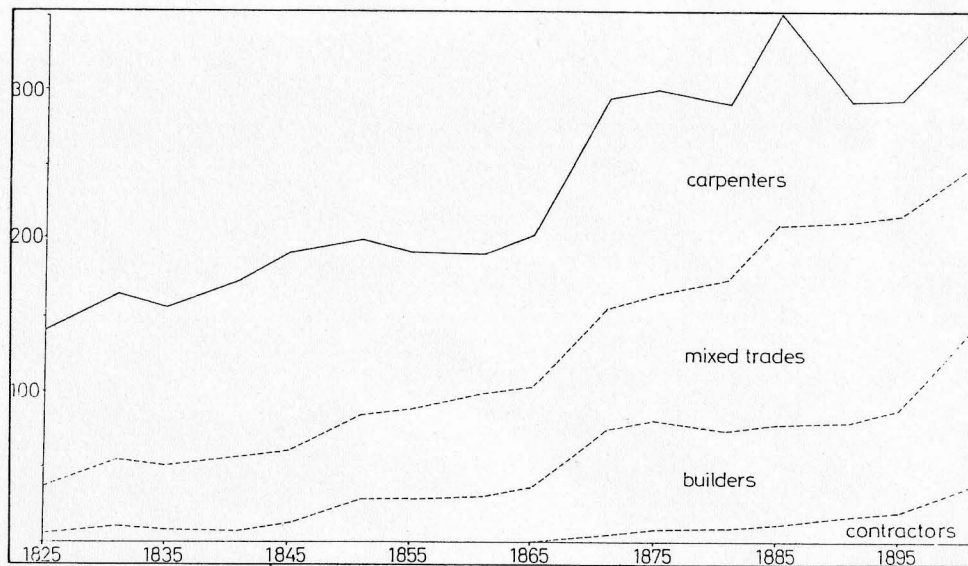


Figure 1. Firms by number and year

Life expectancy

The lifespan of firms was analysed by cohorts, that is to say by firms grouped according to the sample year by which they commenced, or in which their existence was first recorded. The cohort comprising firms which existing in 1825 diminished in number such that after a decade 46.8 per cent of the original number of firms survived. After two decades the proportion of survivors had fallen to 26.9 per cent, and after three decades it was 12.8 per cent. The rate of attrition of firms in this and succeeding cohorts up to that of 1895 is tabulated in Table 2.

The data in Table 2, from which Figure 2 was constructed, suggests that firms which commenced during the first half of the period terminated at a relatively consistent rate. The life expectancy of firms commencing in, say, 1851 was much the same, age for age, as those which had commenced in 1825. Some later cohorts were less fortunate and had shorter expectancy of life. The most unfortunate cohorts were those of 1865 and 1875, both of which suffered severe losses in their first five years. It may be recalled (Table 1) that the period 1865 to 1871, when such heavy losses were sustained, was a time of growth

in the total number of firms extant. Further, the period 1875 to 1881 was a time of only slight absolute decline in number of firms extant. Thus, periods in which young firms had shortest expectancy of life were not necessarily periods of absolute decline in numbers of firms extant.

The data in Table 2 was used also to examine the lifespan of firms in a way which combined all cohorts and regarded them in respect of age rather than date of origin.

In effect Figure 3 superimposes all cohorts shown in Figure 2, replacing lines with points. The figure shows that attrition of firms, generalised over the period, was such that after a decade of life rather over 40 per cent of firms were likely to survive. After two decades the proportion of survivors was likely to decline to somewhat over 25 per cent. After three decades the proportion was down to about 15 per cent. Put differently, life expectancy was such that one in two newly established firms could expect to survive more than about five or ten years. No more than one in ten newly established firms could expect to survive more than about 35 years.

Jointly owned firms appear to have had

Table 2. Attrition of firms, by date of origin of cohorts

Approx. age of firms (years)	Percentage of firms surviving by cohort of:														
	1825	1831	1835	1841	1845	1851	1855	1861	1865	1871	1875	1881	1885	1891	1895
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	65.2	73.0	65.7	70.8	60.0	72.4	52.4	70.2	34.6	71.3	30.9	57.3	50.6	74.1	54.4
10	46.8	48.6	45.7	47.7	46.6	53.9	42.9	47.4	28.8	35.7	27.9	36.0	41.8	45.7	
15	34.7	41.9	34.3	40.0	36.6	48.7	33.3	40.3	23.1	24.6	22.0	29.4	31.0		
20	26.9	29.7	28.6	33.8	30.0	35.5	31.0	26.3	17.3	14.0	14.7	21.3			
25	16.3	16.2	14.3	30.8	18.3	34.2	21.4	22.8	13.5	9.9	10.3				
30	12.8	9.4	8.6	21.5	18.3	22.4	14.3	17.5	9.6	7.0					
35	8.5	5.4	2.9	16.9	10.0	15.8	11.9	12.3	5.8						
40	8.5	2.7	2.9	10.8	8.3	10.5	7.1	8.8							
45	7.1	2.7	2.9	7.7	8.3	5.3	7.1								
50	5.0	1.3	2.9	6.1	8.3	2.6									
55	2.8	1.3	2.9	6.1	5.0										
60	1.4	1.3	2.9	3.1											
65	0.7	0.0	2.9												
70	0.7	0.0													
75	0.7														

Source: *Mathews's Bristol Directory* (Bristol, 1825) etc); *Wright's Bristol Directory* (Bristol, 1881) etc).

shorter life expectancies than all firms taken together. However, when a jointly owned firm terminated, one or both partners might well set up on their own account. Thus a jointly owned firm might be short-lived, but the people principally involved might continue trading under separate names. A resurrected version of the original firm may be said to have survived, although it would appear in this study as a new firm. Life expectancy also appears to have differed according to the main trade of the firm. Carpenters' firms had

shorter life expectancies than all firms taken together. Whereas about 60 per cent of all firms could expect to survive after five years of life (Figure 3), the proportion of carpenters' firms was only about 45 per cent. A differential persisted throughout the age range, suggesting that carpenters' firms were generally more prone than others to early termination. We can see why in Lewis Carroll's celebrated poem it was the Carpenter rather than the Walrus who 'shed a bitter tear'.

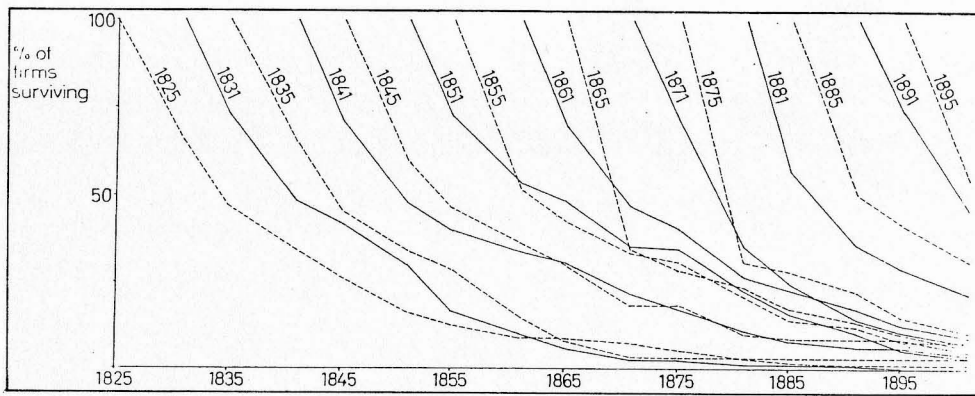


Figure 2. Attrition of firms by date of origin of cohort

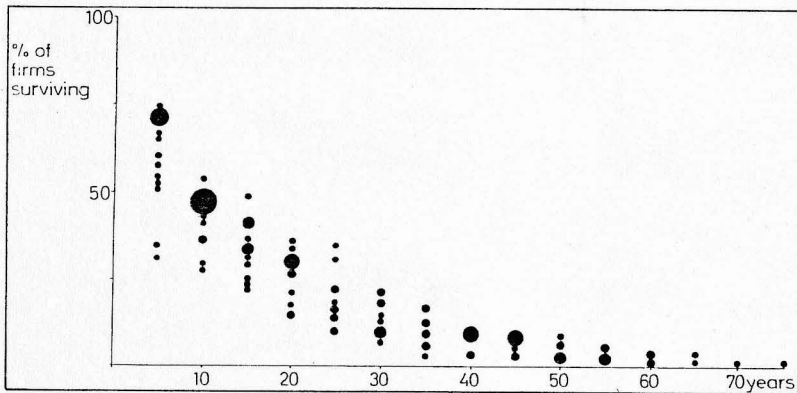


Figure 3. Attrition of firms by age of cohort

A word about the most able (or lucky) survivors may be appropriate in a paper which is otherwise preoccupied, perhaps morbidly, with the frailty of firms. Forty firms, or 2.8 per cent of those in the sample, succeeded in surviving for at least 40 years. In 25 of these cases the firm existed at the beginning or close of the period of study, so that the lifespan may well have extended beyond that uncovered by the sample. Seventeen firms were identified as surviving at least 50 years, and six were identified as surviving at least 60 years. There was one case only of a firm which existed throughout the period of study. Interestingly, this firm, J. Martin (later S. Martin & Son) survived at least until early 1985. At the time of writing it is subject to acquisition by another firm⁴.

Understanding attrition

This study shows one way in which the building industry of a city over an extended period may be investigated as a comprehensive entity. A tentative conclusion is that attrition among new firms proceeded at a fairly even rate for much of the period, and especially in the first half. Thereafter, and most particularly in the later 1860s and later 1870s, new firms became more prone to early termination. Comparisons with rates of attrition over longer periods, in other towns, and for larger firms alone, might prove instructive. Further investigation might clarify relationships between the building cycle and rates of termination (and commencement) of firms.

On the basis of this single sample it appears

that new Victorian building firms had a 'half life' of the order of between five and ten years. If true generally, this surely supports the view of the building proprietor as a gambler. The odds against individuals who commenced trading independently were high, and the likelihood that they would be forced back into the ranks of the employed (or worse) was ever present. High rates of attrition must have carried penalties not merely for individual proprietors, but also for the health of the whole industry. The words of Belioz, in a rather different context, spring to mind: 'Time is a great teacher, but unfortunately it kills all its pupils.' The price paid by the building industry for lost opportunities to accumulate experience can only be guessed.

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