

# Life and Death in the Construction Industry

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The share of construction establishments with payroll employees going out of business averaged 14.0 percent per year from 1990 to 1998. The 16.9 percent share disappearing in the year ending in March 1991 was higher than during the other years for which data are available, reflecting a decline in housing starts to the lowest annual total since 1946, combined with a credit crunch that affected even well-established builders. The highest survival rate (lowest establishment death rate) during the period was in the year ending in March 1997, with

87.5 percent of the builders operating in March 1996 still in business and only 12.5 percent ceasing operations as a continuing establishment with payroll employees (Table 1).

The death rate among construction establishments was greater than the rate among all U.S. business establishments. While a few specific industry groups such as apparel stores and videotape rental operations had death rates that exceeded the average among construction establishments, among broad industry groups none had a higher average establishment death rate than construction. As described below, how-

ever, the number of terminations may be understated for businesses in other industries to a greater extent than in construction.

While the death rate among construction establishments was higher than among establishments in other industries, the rate at which new establishments were created was also greater. From 1990 to 1998, the number of new construction establishments as of March of each year was equal to an average of 15.3 percent of the number of establishments operating in the preceding year. Since the birth rate generally exceeded the death rate, the number of construction

**Table 1. Establishment Death Rates**

SIC	1990	1991	1992	1993	1994	1995	1996	1997	1998	Mean
<b>Total, All Industries</b>	11.3	11.6	11.6	10.5	10.5	10.2	10.3	11.3	10.7	10.9
<b>Major Industry Groups</b>										
07-09 Agr svcs, forestry & fisheries	11.6	12.2	11.4	11.0	10.6	10.2	10.4	10.5	11.5	11.0
10-14 Mining	12.7	12.4	14.1	13.4	12.2	11.8	11.7	11.7	11.6	12.4
<b>15-17 Construction</b>	<b>15.0</b>	<b>16.9</b>	<b>15.6</b>	<b>14.1</b>	<b>13.4</b>	<b>13.0</b>	<b>13.0</b>	<b>12.5</b>	<b>12.9</b>	<b>14.0</b>
20-39 Manufacturing	9.4	9.7	9.8	8.9	8.8	8.4	8.5	8.7	8.6	9.0
40-49 Transport, comm, public utility	12.2	12.9	12.5	11.5	11.5	11.2	12.3	13.1	12.2	12.2
50-51 Wholesale trade	9.4	10.0	10.9	9.5	9.3	8.8	9.4	10.2	9.7	9.7
52-59 Retail trade	11.4	11.8	12.3	10.9	10.8	10.8	10.5	12.1	10.9	11.3
60-67 F.I.R.E.	10.8	11.7	10.9	10.9	11.5	10.0	9.9	11.8	11.3	11.0
70-89 Services	9.8	10.0	10.1	9.3	9.4	9.3	9.4	10.4	9.9	9.7
<b>Construction Industries</b>										
1500 General building contractor	18.0	20.7	18.8	16.9	16.0	15.7	15.8	14.9	15.4	16.9
1520 Residential building	18.4	22.0	20.3	18.5	17.2	16.7	15.8	16.0	16.7	18.0
1530 Operative builders	15.4	18.1	16.2	14.3	14.5	12.9	13.6	16.4	14.9	15.1
1540 Nonresidential building	11.1	12.1	12.1	10.8	11.7	10.8	10.5	12.3	11.1	11.4
1600 Heavy constr., ex. bldg	11.2	12.4	12.2	11.1	10.1	9.6	9.5	9.5	9.0	10.5
1610 Highway & street	9.6	10.4	10.0	9.8	8.7	8.6	8.3	8.8	8.3	9.2
1620 Heavy constr., ex highway	11.5	12.8	12.8	11.3	10.6	9.9	9.9	9.8	9.3	10.9
1700 Special trade contractor	14.0	15.5	14.4	13.1	12.5	12.0	12.1	11.6	12.1	13.0
1710 Plumbing, heating, A/C	11.0	11.8	11.2	10.4	9.4	9.0	9.3	9.2	9.7	10.1
1720 Painting & paper hanging	17.6	19.4	18.3	16.9	16.3	15.7	15.6	14.9	15.6	16.7
1730 Electrical work	11.7	13.0	12.5	11.2	10.7	10.2	10.0	10.0	10.4	11.1
1740 Masonry, stone, & plaster	15.0	17.5	15.9	14.6	14.0	13.3	13.5	12.9	12.9	14.4
1750 Carpentry & floor work	19.2	21.0	18.4	16.7	16.5	16.2	16.1	15.2	15.2	17.2
1760 Roof, siding, sheet metal	13.4	14.6	13.9	12.9	13.1	13.0	12.3	12.5	13.2	13.2
1770 Concrete work	13.1	15.3	13.8	12.8	11.5	11.2	11.8	11.4	11.9	12.5
1780 Water well drilling	8.6	9.9	8.6	8.7	8.0	8.1	7.6	7.7	8.0	8.4
1790 Misc. special trade	13.4	14.7	14.1	12.5	12.0	11.5	11.5	11.4	12.0	12.6

Note: Rates in percent, represent establishment deaths for year ending in March, as a share of establishments in March of preceding year.  
Source: U.S. Small Business Administration.

industry establishments grew from 1989 to 1998. The only years in which the number of new establishments in the industry was less than the number lost were 1991 and 1992.

Within the construction industry, the highest death rates occurred among residential general contractors, operative (for sale) builders, carpentry and floor contractors, and painting contractors. General contractors for heavy non-residential construction (e.g., highways and streets), water well drilling contractors, plumbing contractors, and electrical contractors tended to have somewhat higher survival rates than other types of construction establishments.

The disappearance of an establishment doesn't necessarily mean that the business failed to remain financially viable or that the business failed to meet the owners' objectives. A study of businesses across all industries that ceased operations found, for example, that a third of the former owners felt that their firms were successful at the time they closed.<sup>1</sup> Partly for that reason, the disappearance of an establishment is referred to as a death, rather than a failure. Another study asked the former owners of bankrupt companies, "If you were to do it all over again, would you have started your bankrupt business?" Of the respondents to that question, 61 percent said "yes."<sup>2</sup>

## Data Source

The data presented here come from the Business Information Tracking Series (BITS), compiled by the U.S. Census Bureau for the Small Business Administration.<sup>3</sup> Federal tax records are used as the primary source for identifying establishments, although the identification of additional establishments

within multi-establishment firms may depend on surveys and other data. Only establishments with payroll employees during the pay period that included March 12 are included. If an establishment with payroll employees in March of one year also has payroll employees in March of the following year, it is recorded as having survived.

The assignment of establishments to detailed industry categories is highly imperfect, especially for construction. Particularly in the earlier years of the period covered, some establishments were included in the major categories of construction, such as general building contractor or special trade contractor (in the Standard Industrial Category system, at the 2 digit industry group level), without being assigned to detailed subcategories (i.e., 3-digit and 4-digit SIC). This affected births more than deaths, because the assignment to a detailed category may only have occurred after the business had been operating for a few years. Table 2 shows the number of establishments in each of the SIC categories, including the number that were classified in broad industry groups but not detailed industries.

In general, an establishment is defined as a single physical location where business is conducted. The definition of an establishment is somewhat different in the construction industry than in other industries. In other industries, each separate location is considered to be an establishment. For example, a retailer with 5 stores located in different parts of town represents 5 establishments. For a builder with five subdivisions in a metropolitan area, each with its own sales office and construction trailer, only the builder's central office is considered to be an establishment. In many cases, the "central office" for a builder is the

builder's home.<sup>4</sup>

Most business firms consist of a single establishment, and that is especially true for construction firms, due largely to the way that construction establishment locations are defined. In 1998, for example, the average number of establishments per firm across all industries was 1.24, since the number of establishments with employees at any time during the year was 6,941,739 while the number of firms was 5,579,129. For construction, the average number of establishments per firm was only 1.01, based on the 674,704 establishments reported for 668,035 firms. A builder firm isn't likely to be recorded as consisting of more than one establishment unless it has operations in more than one metropolitan area. In 1998, only 772 of the 72,622 construction industry establishment deaths consisted of secondary establishments closing. Among the 653,253 establishment deaths recorded in 1998 across all industries, 112,652 were secondary establishments within multi-establishment firms.

## Defining Survival

The longitudinal BITS file from which the data shown in Table 1 were constructed considers an establishment to have survived if it moves to a new location but retains the same employer identification number for tax purposes. It is also assumed to be the same establishment if it is still operating from the same location, even if it has come under new ownership, with a different employer identification number, provided that it remains in the same industry or keeps the same name. Thus, if a restaurant that has gone out of business is replaced by another restaurant in the same address, it is considered to have survived,

**Table 2. Construction Industry Establishments with Payroll Employees**

	SIC	Construction Industry Establishments with Employees in March (BITS)								
		1989	1990	1991	1992	1993	1994	1995	1996	1997
<b>Construction</b>		503,351	512,050	496,505	497,027	499,569	513,987	535,723	550,819	564,765
<b>Gen. building contractor</b>	1500	150,481	154,510	148,197	149,009	146,525	150,682	157,020	161,054	163,121
Residential bldg	1520	56,321	57,697	57,603	61,270	97,561	101,224	98,263	114,128	114,436
Operative builders	1530	10,352	9,500	8,360	8,596	9,857	9,626	9,469	11,136	13,750
Nonresidential bldg	1540	22,619	21,729	20,940	20,271	28,354	27,990	27,219	31,302	34,798
Others		61,189	65,584	61,294	58,872	10,753	11,842	22,069	4,488	137
<b>Heavy constr., ex. bldg</b>	1600	29,125	28,995	28,259	27,848	30,210	30,171	30,330	31,016	33,483
Highway & street	1610	7,779	7,611	7,447	7,492	8,433	8,474	8,447	8,649	9,575
Heavy const, ex. highway	1620	18,963	18,698	18,283	18,005	21,393	21,279	21,258	22,197	23,780
Others		2,383	2,686	2,529	2,351	384	418	625	170	128
<b>Special trade contractor</b>	1700	323,745	328,545	320,049	320,170	322,834	333,134	348,373	358,749	368,161
Plumbing, heating, A/C	1710	65,712	66,299	65,637	65,752	68,300	70,323	72,677	76,486	78,728
Painting & paper hanging	1720	24,746	24,895	24,281	24,197	26,227	26,967	28,208	29,746	30,640
Electrical work	1730	47,807	48,268	47,734	48,029	49,636	50,976	52,854	55,920	57,611
Masonry, stone, plaster	1740	39,042	38,711	36,881	36,311	40,419	40,987	41,787	42,826	43,551
Carpentry & floor work	1750	35,150	34,402	32,690	33,550	38,592	40,340	41,985	43,948	46,570
Roofing, siding, sheet mtl	1760	20,662	20,680	20,471	20,710	23,407	23,957	24,305	25,342	26,300
Concrete work	1770	18,149	18,248	17,627	17,650	20,434	21,369	22,327	23,463	24,636
Water well drilling	1780	3,085	3,082	3,095	3,188	3,335	3,302	3,349	3,502	3,497
Misc. special trade	1790	46,324	46,407	45,765	46,545	49,510	50,879	53,283	56,380	56,440
Others		23,068	27,553	25,868	24,238	2,974	4,034	7,598	1,136	188

Source: U.S. Small Business Administration, Office of Advocacy, based on U.S. Census Bureau data.

although it might have been a French restaurant, with a French name and French (or pseudo-French) employees, succeeded by an unrelated Chinese restaurant with a Chinese name and a new set of workers. This would seem to indicate that there could be many cases where an establishment would be recorded as having survived simply because another business in the same industry moved into the same location. The number of cases where an establishment with a new tax ID is matched with a previous establishment based on having the same address and being in the same 3-digit industry may not, however, be very large. In the year ending March 1993, the number of establishments linked in that way represented only about 0.3 percent of all establishments.<sup>5</sup> Even if all of those cases involved unrelated establishments, classifying them as deaths would only have increased the overall death rate for that year from 10.5 percent to about 10.8 percent, although the

effect in other years may have been a bit larger.<sup>6</sup> For industries requiring specialized facilities and particular types of locations (e.g., restaurants) perhaps the impact is greater.

### Factors

There may have been builders who were recorded as having survived as an establishment, even though the firm went out of business, based on a new builder having the same address, but that situation was probably more common in other industries. This may partly explain why the death rate for construction establishments in the BITS data set is higher than for establishments in other industries, although other characteristics of construction firms, such as limited plant and equipment assets and high leverage, make survival less probable than in other industries.

Unlike the experience in the human population, the death rate among young business establish-

ments is much higher than among older, established businesses.<sup>7</sup> For the period from March 1996 to March 1997, the share of all construction industry establishments that died was 12.5 percent. For those that were formed in 1993 or later, the death rate was 20.4 percent, but for those formed before 1993, the death rate was only 8.8 percent. The pattern in other industries was similar, with 18.9 percent of the establishments that were less than 3.25 years old in March 1996 terminating in the year ending in March 1997, but only 8.1 percent of those created in 1992 or earlier disappearing during the year.<sup>8</sup> Businesses with few employees are also more likely to die than those with many employees. Establishments are generally a bit smaller in construction than in other industries, with about 59 percent of single-establishment construction firms having less than 5 employees in 1996, according to the BITS data, compared to 57 percent across all industries. They are also

slightly younger than establishments in other industries, with 32 percent of those in 1996 having started after 1992, compared to 29 percent for single-establishment firms across all industries. Those factors contribute somewhat to the relatively high death rate in construction.

## Changes Over Time

Comparisons of construction with other industries are distorted to some extent by the way in which the Census Bureau has defined the concept of establishment and measured survival. Looking at the overall construction industry over time, however, that's less likely to be a problem, since the same biases would apply to the industry in each year. The fact that the decline in housing starts from 1.38 million in 1989 to 1.01 million in 1991, and the subsequent increase to over 1.6 million in 1998, did not produce larger variations in the rate at which builder establishments "died" indicates that much of the movement

in and out of the industry reflects individual circumstances, rather than the vulnerability of builders to changes in the economy.

<sup>1</sup> Brian Headd, "Business Success: Factors leading to surviving and closing successfully" (U.S. Census Bureau, Center for Economic Studies, November 2000).

<sup>2</sup> Richard F. Fullenbaum and Mariana A. McNeill, *The Function of Failure* (U.S. Small Business Administration, 1994)

<sup>3</sup> The data set was previously known as Longitudinal Establishment and Enterprise Microdata (LEEM). For further information see Alicia Robb, "New Data for Dynamic Analysis: The Longitudinal Establishment and Enterprise Microdata File" (U.S. Bureau of the Census, Center for Economic Studies, December 1999 – CES 99-18).

<sup>4</sup> The Census Bureau's report on the Characteristics of Business Owners in 1992 (CBO92-1, issued September 1997) indicated that 74 percent of construction firms were home-based, compared to 50 percent of all firms, but most firms in that tabulation had no employees. NAHB's regular monthly survey of home builders asked about business office location in June 1997, and found that 30 percent of participants in the panel

were home-based. The NAHB panel consists primarily of larger-than-average single family for-sale builders.

<sup>5</sup> Zoltan J. Acs and Catherine Armington, "Longitudinal Establishment and Enterprise Microdata (LEEM) Documentation" (U.S. Bureau of the Census, Center for Economic Studies, May 14, 1998, Report CES-WP-98-9), pp. 39-40. Also, Catherine Armington, "Statistics of U.S. Business – Microdata and Tables" (U.S. Small Business Administration, June 4, 1998 [Internet: [www.sba.gov/advo/research/rs190tot.pdf](http://www.sba.gov/advo/research/rs190tot.pdf)]), pp. 20-21.

<sup>6</sup> According to Robb (op. cit.), p. 11, the percentage of surviving establishments with any kind of file number change during the 1989 to 1996 period, including situations like that described above, ranged from a low of 1.9 percent in 1992-1993 to 3.1 percent in 1991-1992.

<sup>7</sup> Actually, death rates among the human population are fairly high during the first year of life. It is only after age 11 that death rates rise with age.

<sup>8</sup> Based on special tabulations prepared for the Small Business Administration by the Census Bureau. The death rates by age exclude establishments in multi-establishment firms.

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