

Actuarial Issues in the Insurance of Slaves in the United States South

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*This paper contains background information
on slave insurance. It does not consider the
ethical issues.*

ABSTRACT: The Insurance Department of the state of California has requested information from insurers with records related to life insurance policies covering slaves in the antebellum United States South. These records illuminate many actuarial aspects of this activity, and they enable us to make conjectures as to the profitability of slave life insurance.

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INTRODUCTION

Life insurance is today a common financial product, but it was not widely used until relatively late in history. The Romans had a sufficiently stable society that Ulpian was able to construct a rudimentary life table in about 200 A.D. The table is given by Dublin, Lotka, and Spiegelman (1949). Trenerry (1926) states the possibility that this table was used more for annuity and estate-settlement issues than for life insurance.

Kessler (1985, pp 186-187), along with many others, notes the first life insurance contract of which we have evidence. This contract was issued in 1583, insuring one William Gybbon. He was a citizen of London and worked as a salter (salting meat and fish). The beneficiary was Richard Martin, and the relationship was unknown. The contract was a simple one-year term policy. Gybbon died during the year, but the underwriters refused to pay Martin on the grounds that the contract was for a *lunar* year. The courts ruled otherwise, and Martin was paid. Life insurance was burdened with legal and ethical difficulties right from its inception.

Clark (1999, pp 115-117) provides the often-repeated story of John Graunt's enumeration of vital statistics in 17th century London. He also recounts the accomplishments of astronomer Edmund Halley; Halley went to Silesia to study the church records that allowed him, in 1693, to prepare the first modern life table. Halley's table was refined at various times and for various places, but his life table provided, in a format still used today, the basis for scientific life insurance.

Life insurance raises ethical objections, as it is commercializing a transaction that is thought to be the proper concern only of God. Zelizer (1979, p 33) notes European legal edicts from 1570 to 1681 that banned life insurance. Trenerry (1926, pp 154-156) provides other details.

Clark (1999, p 19) attributes this quote to Emerigon, about 1750:

Man is without price. The life of a man is not an object of commerce, and it is odious that his death should become the subject of mercantile speculation.

The legitimizing of life insurance took place first in the British Isles, and Clark (1999, pp 144-146) attributes this to the Church of Scotland. Concerned for the welfare of the wives of deceased clergymen, the Church solution was an annuity plan for these widows. As the Church had copious data on the life experiences of their ministers, the plan was scientifically organized and rather successful. The adoption of life insurance by a religious body was a major step to its general acceptance. Zelizer (1979, p 2) notes evidence of similar plans among the Presbyterian and Episcopal clergy in Philadelphia and New York about 1750.

Life insurance was also a part of the slave trade, although the policies would more properly be described as property insurance. We will claim that this distinction between

life and property insurance is obvious – the beneficiary upon the death of the slave was never the slave’s family. At those times and in those places where life insurance was illegal, tricky semantic maneuverings allowed the insurance on transported slaves; see Clark (1999, p 16).

Perhaps the most outrageous abuse of insurance, for all recorded time, was the *Zong* incident of 1781. The English slave ship *Zong*, headed from Africa to Jamaica under captain Luke Collingwood, was hit with an outbreak of disease. Collingwood was quite aware that slave deaths from natural causes were not covered by insurance, although deaths caused by necessities were indeed covered. Over a period of three days, Collingwood ordered 132 sickly Africans thrown overboard to their deaths. The claim was made that this action was necessary to save the remaining slaves and the crew. The insurers at first refused to pay, and the case reached the courts. The case was initially decided for the owners, but this finding was overturned on appeal. The legal issues, sadly, turned only on whether Collingwood’s actions were necessary to preserve property. The morality of throwing humans overboard was not the concern. There is an excellent account in Everett (1996, pp 59-61).

The practice of ensuring human cargo extended beyond African slaves. Buck (1975, pp 11-13) gives the details of a Manhattan Life Insurance policy which covered about 700 Chinese workers sailing on the Clipper *Sea Witch* from Swatow, China, to Panama, Republic of New Granada. No less that \$84,000 of insurance was desired, the workers being valued at \$120 each.

The Manhattan Life issued in 1854 a group policy, possibly the first ever written by an American company. The stipulations required the presence of an on-board doctor and that the *Sea Witch* be responsible for the sanitary conditions, food, and other factors affecting mortality. The Manhattan Life assumed one fourth of the total risk of the \$84,000; their risk was \$21,000 and they collected a premium of \$840. The remaining three-quarters was borne by Howard Life ($\frac{1}{4}$), New England Life ($\frac{1}{8}$), Aetna of Hartford ($\frac{1}{4}$), and Knickerbocker Life ($\frac{1}{8}$).

The *Sea Witch* carried 720 Chinese workers. Payment of losses, if any, was to be based on the report of Dr. Henry B. Dorrance, surgeon aboard the ship. Within twenty-four hours after sailing, three of the Panama-bound Chinese jumped overboard and were lost. Eleven others died of sundry diseases on the sixty-five-day voyage, according to Dr. Dorrance’s report of March 31, 1854, in the City of Panama. On April 29, 1854, The Manhattan Life paid \$408, one quarter of the total loss, and \$432 less than its premium. (Buck’s figures do not check exactly, so there may be other details.) This transaction, Policy No. 2645, dated February 22, 1854, was exhibited at the Panama Pacific Exposition held in San Francisco in 1915.

Though the ethical taint had slowly worn off by the mid 1700s, life insurance did not become a widely-used product until about 1840. Zelizer (1979) attributes the rise of life insurance at this time to the deployment of in-the-field sales agents.

It is shortly after 1840 that we have the first evidence of life insurance on slaves in the United States.

AN ETHICALLY TORTURED ISSUE

Life insurance has a complicated history, and it has aroused considerable passion. The issue of slavery has created even more passion, and here we bring these topics together. This paper, however, is not a philosophical exploration of the entanglement of slavery and life insurance; that will be considered elsewhere. The purpose here is a quantitative detailing of the facts and numbers, along with actuarial and financial questions.

Fogel and Engerman (1974) produced *Time on the Cross* as an economic commentary on American slavery. Their major conclusion, that slavery was an efficient economic system, met with enormous resistance, and the controversies showed the levels of passion associated with slavery. See Genovese (1967, 1976, 1979a, 1979b), Stamp (1956), and Horowitz (2002).

We take the point of view that slavery was a terrible evil, and its mere existence is a blemish on the history of the United States. Any subsequent findings on, say, the treatment of slaves because of insurability or whether the insurance companies made money, cannot possibly mitigate the level of evil.

WHY NOW?

In 2000, activist groups raised the possibility of suing for reparations from firms that profited from the business of slavery. Details can be found the web site <http://www.usatoday.com/money/general/2002/02/21/slave-insurance-policies.htm>. The prime motivator appears to be Deadria Farmer-Paellmann. Related articles can be found in New York Times accounts (2000a, 2000b, 2000c, 2001).

Fragmentary evidence of slave life insurance policies written by Aetna of Hartford made Aetna one of the targets. It was also known that New York Life insured slaves, as in this note from Clendenin (1932):

It is interesting also to note that the New York Life insured slaves, beginning in May, 1845 — and that of its first 1,000 policies over one-third were on the lives of negroes. *In fact, this company's first death claim was under a slave policy.* [Italics in original.]

In year 2000, the legislature of California required in bill SB 2199 that all firms selling life insurance in that state provide copies of all archived material related to slave insurance. Only three companies (Aetna, American International Group, and New York Life) were able to provide information. The facts have been made available to the public at several locations in California, and they allow us here to form serious conjectures

about the actuarial issues. The web site <http://www.insurance.ca.gov/SEIR/main.htm> contains an outline of the information available; this article uses details obtained from photocopies of the physical records.

The likelihood of lawsuits related to reparations is high, and it is important for us to state two disclaimers. First, neither of the authors is involved in the legal actions, and neither has been consulted to date by any of the parties. Second, the mother of one of the authors (GS) was a refugee from Nazi Germany and received post-war reparations. It is impossible to determine now the amount of those reparations, but the figure is likely to be between \$2,000 and \$10,000.

PREVIOUSLY KNOWN FACTS ABOUT SLAVE LIFE INSURANCE

Savitt (1977) worked from archives in Virginia and North Carolina and found copious evidence of slave insurance. The companies writing these policies no longer exist and would not have entered the California data bases; however the 1849 North Carolina Mutual Life report has been posted by University of North Carolina Libraries on the web site <http://docsouth.unc.edu/nc/ncmutual>. (The company currently operating as North Carolina Mutual Life dates its origin as 1898.)

Savitt claims that such insurance became prevalent as slaves were rented out for dangerous work (p 586), and that claim will be further supported here. Each slave policy was written for an amount below the slave's value and in no case to exceed \$800 (p 588). Savitt suggests (p 588) that this was done to avoid the possibility that the owners might consider their slaves more valuable dead than alive, but in fact such under-valuation is common insurance practice.

Savitt's Table 1 (p 594) provides summary data on slave policies issued by North Carolina Mutual Life. Losses per slave death are summarized in this table, and show a steady rise from about \$500 in 1850 to about \$800 in 1864.

Savitt also summarizes rates in his Table 2 (Savitt, 1978, p 163). This table works from the vantage point of Franklin Slaughter, an insurance broker, and we can summarize the rates that he charged to the slaveowners. Crudely, the premium rates for a one year policy on slaves aged 10, 20, 30, 40, 50, and 60 were about 1.3%, 1.4%, 1.6%, 2.0%, 3.0%, and 5.6% of policy value. Finally (p 600) Savitt notes that North Carolina Mutual had to cease operations in 1866, having paid more than \$175,000 in compensation for the deaths of 265 slaves. This represents an average payout of $\frac{\$175,000}{265} \approx \660 . Savitt's

Table 1, obtained from company records, reports slave loss rates at 1.00% (1857), 1.37% (1858), 1.47% (1860), 1.34% (1863), and 2.08% (1864). These rates were much smaller than those found in the California data base, as will be seen below.

The annual premium rates must have had an average near 3% of policy value. The annual loss rates were below 2%. Savitt claimed (p 597) that North Carolina Mutual was borderline profitable, but needed to raise rates. These rate increases are seen in his Table 2.

North Carolina Mutual made money on the slave policies, but it was not a large profit source.

CURRENT DATA SET

The data sets considered here are limited in scope. The information was read from photocopied records at the California Department of Insurance in San Francisco. As is to be expected with archival records, there were occasional difficult decisions in interpretation. Some entries were difficult to read, and some entries were made inconsistently. Fortunately the great majority of facts could be obtained with certainty.

This information base is clearly not complete, and it certainly cannot be regarded as representative. The California Department of Insurance contacted many companies, and only three claimed to have any records of policies written on slaves. It is highly likely that details disappeared over time. Some companies that operated in the antebellum period have gone out of business and their records would be lost.

We have different details from three insurers.

The Aetna records (here including one from Ace) cover 19 policies on 19 slaves. The information (not complete for all policies) includes:

- Name of slave, county of slave
- Name of owner, county of owner
- Identifying information, principally occupation
- Age
- Value
- Amount insured
- Rate
- Premium
- Term (duration) of policy
- Year of issue (1853 through 1860)
- Policy number

In noting the premiums, we have excluded clearly-stated overhead fees, such as fees related to medical examinations. There is a listing of slave deaths from 1846-1847, but these do not relate to the 19 policies.

The Aetna records had been around for a while. Hooker (1956) shows images of the policy of slaveowner Murphy, insuring three slaves.

The AIG records involve 173 policies on 173 slaves, with these facts:

- Name of slave, county of slave
- Name of owner, county of owner
- Amount insured
- Year of issue (1851 through 1853)
- Policy number
- Death details

The New York Life records involve 610 policies on 480 different slaves. The variables involved here are:

- Name of slave, county of slave
- Name of owner
- Age
- Amount insured
- Premium
- Term (duration) of policy
- Year of issue (1845 to 1850)
- Policy number

For the purposes of this study, the premiums were noted exclusive of overhead fees related to medical examination. Death information was available.

The New York Life records were not all organized in the same style. In most cases, policy renewals were given new policy numbers, but there are exceptions. In a few cases, multiple slaves were insured under a single policy number. We believe that we have made reasonable decisions in encoding these policies.

The three companies for which we have records make no claims that their records are comprehensive. The time periods are limited and completely non-overlapping: 1845 to 1850 for New York Life, 1851 to 1853 for AIG, and 1853 to 1860 for Aetna.

Of the 19 policies from Aetna, ten were from Missouri, not even part of the eventual Confederacy. The other nine policies were from Mississippi (1), Louisiana (5), South Carolina (2), and Virginia (1).

Of the 173 policies from AIG, 127 were from Kentucky and six were from the District of Columbia, neither part of the Confederacy. The remaining 40 policies consisted of two from Alabama and 38 from Virginia. Thus only two of the 173 policies were from the “deep” South. As will be noted below, the Kentucky policies were primarily related to riverboat operations.

For the 480 slaves insured through New York Life, fully 120 were insured in Kentucky. The slaves were from these states:

Kentucky	120
Virginia	100
North Carolina	92
South Carolina	54
Georgia	49
Alabama	31
Mississippi	22
Tennessee	3
Arkansas	2
Louisiana	1

This accounts for 474 slaves. The remaining six are classified as follows:

Richard Orouch's mines	1
Owners in North Carolina and Georgia	1
Not determinable	4

For four slaves, the listing was simply "Steamboat Uncle Sam." For another slave, this boat was noted as Kentucky-based, and thus these four were assigned to Kentucky.

The locations are the states of issue. Cabin boy Jack, whose policy was issued in Kentucky, died of drowning in Mobile, Alabama. Jack was fifteen years old.

We can identify occupations for some of the insured slaves. For the 19 Aetna cases,

- 10 were employed in domestic capacities
 - 3 female housegirls
 - 1 male houseservant
 - 1 female houseservant
 - 2 female nurses
 - 1 female cook
 - 1 female washer
- 6 were employed in unskilled capacities
 - 2 male laborers
 - 1 male farm worker
 - 3 male draymen
- 1 was employed in a skilled capacity
 - 1 male blacksmith
- 3 could not be classified
 - 2 males
 - 1 unspecified gender and unspecified occupation

These occupations are consistent with tasks that would be performed at the plantation.

The AIG data does not list professions.

The 480 slaves insured by New York Life can be classified by profession, based on the descriptions on the policies. Gender can be inferred from name, in most cases. Two miners with ambiguous names (Dabney, illegible) were presumed male. A blacksmith named Pleasant was presumed male.

Broad job category	Examples	Number
Farm worker	Farmer, agriculturalist, timber gatherer, fishing, woodchopping	19
Laborer	Laborer, drayman	52
Domestic	House servant, cook, baker, seamstress, washer, waiter, stove boy, nurse, tailor, mantua maker	71
Skilled laborer	Manufacturer, machine builder, mason, print shop worker, carpenter, cabinet maker, coach maker, book maker, shoemaker, butcher, bricklayer, brick maker, engineer, barber, blacksmith, wheelwright, gunsmith, barber	65
Merchant or office	Merchant, penman, furniture store worker, grocery store worker	6
Factory worker	Logging factory worker, mill worker, distillery worker, sawmill worker, turpentine worker	29
Miner	Miner	83
Boat worker	Fireman, ship servant, boathand, boat cook, boat waiter, stevedore, cabin boy	104
Not classifiable	Unstated, unusable record, "no particular occupation," slave, female, widow	51
TOTAL		480

In all categories except domestic, in which both men and women were found as house servants, the professions were completely gender-stereotyped.

Many of the slaves worked away from plantations, some at relatively dangerous professions. This supports Savitt's observation that slaves were insured when sent to risky situations.

This paper will provide *descriptive* statistics about these data sources, and we will refrain from *inferential* statements. We will describe these data bases, but we will proffer only guarded judgments about their applicability to the issue of slave insurance in general.

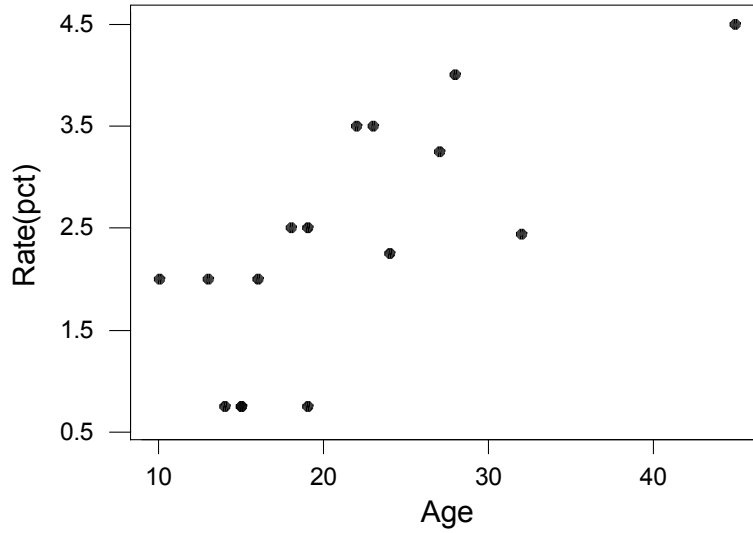
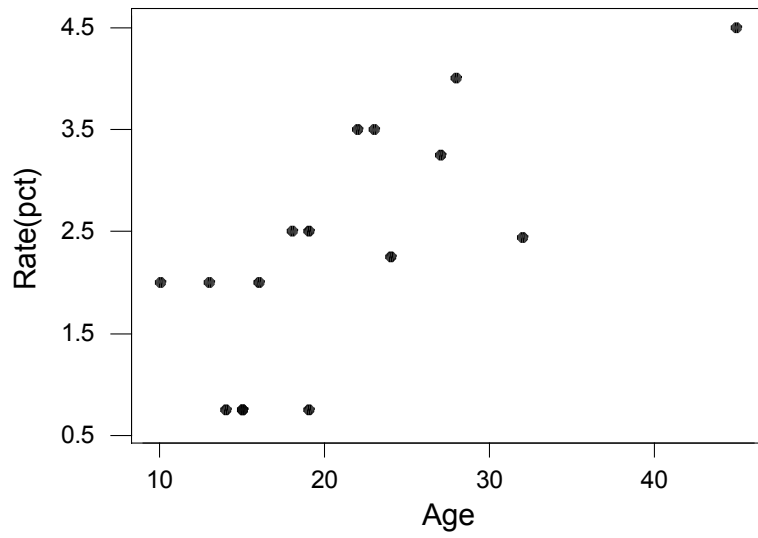
CALCULATIONS OF RATES

For the Aetna policies, there are 16 cases for which we have the rate per \$100 of coverage. These show the following statistical summaries:

Minimum	\$0.75	
Mean	\$2.34	Standard deviation \$1.20
Median	\$2.34	
Maximum	\$4.50	

Rates as “dollars per hundred dollars of coverage” can of course be interpreted as percents.

This graph shows the relationship between the rate and the age of the slave:



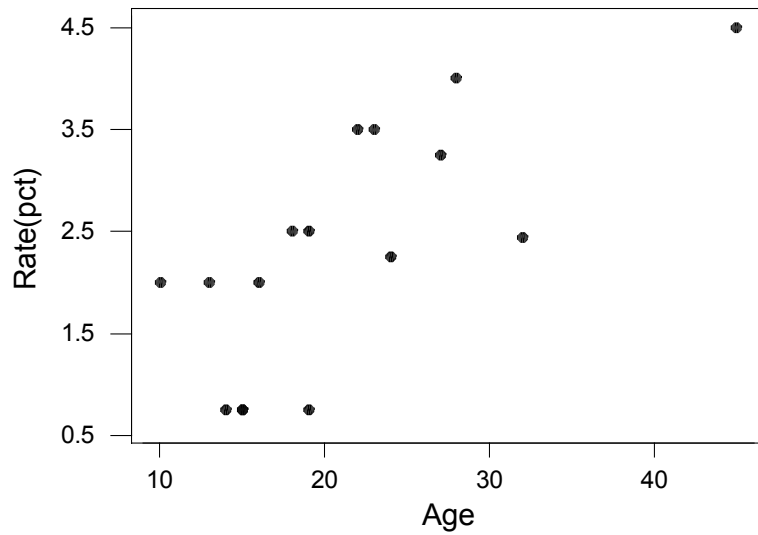
There are, separately, records of death payments, but they do not match the list of policies. Aetna's records are skimpy, and the surviving records are likely only a small fraction of the number issued.

For the AIG policies, we have records for 173 policies, but for two of the records, we cannot determine whether the insured lived. The remaining 171 policies covered 20 deaths. We do not have information about the premiums, so it is impossible to give a numerical profit-or-loss assessment. The death rate of $\frac{20}{171}$ seems extremely high, but we should correct for the fact that many of the AIG policies were multi-year.

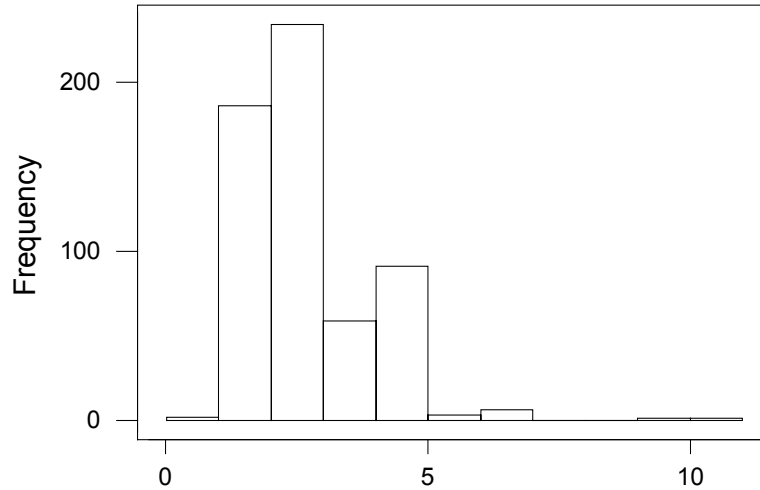
The $171 - 20 = 151$ survivors had a total survival time estimated to be 4,064 months. The 20 who died lived for an estimated 695 months under insurance coverage. Thus there were $4,064 + 695 = 4,741$ person-months of survival with 20 deaths. This gives an estimated annual death rate of $\frac{20}{4,741} \times 12 \approx 0.0506$, very close to 5% per year.

We do not have the premium payments for the AIG data.

The New York Life records were explicit on many variables. The data provide figures for dollar amount at risk and premium, so it's possible to compute the annualized premium per \$100 insured. These can of course be interpreted as percentages. Most of the policies were written for one-year periods. This required careful work with the data base, as some agents entered the annual premium and some entered the entire premium over the duration of the policies. Here is a histogram summarizing these values:



Annualized Premium per \$100 of Value



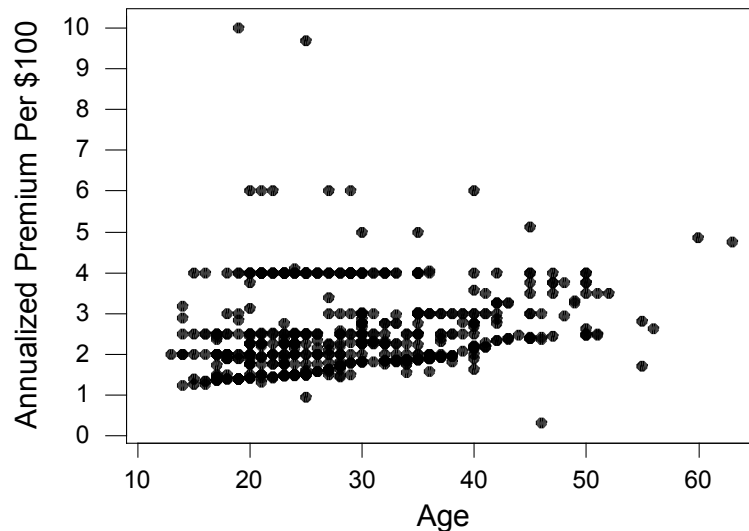
The figure covers 583 policies, of which some were renewals. For 27 policies, the information provided did not permit the calculation of the annualized premiums. For the rate per \$100 of coverage,

Minimum \$	0.31	
Mean \$	2.54	Standard deviation \$1.02
Median \$	2.25	
Maximum \$	10.00	

Most of the annualized premium were in the range of 1% to 4% of insured value. The two very large premiums in this histogram come from policies written for short time periods.

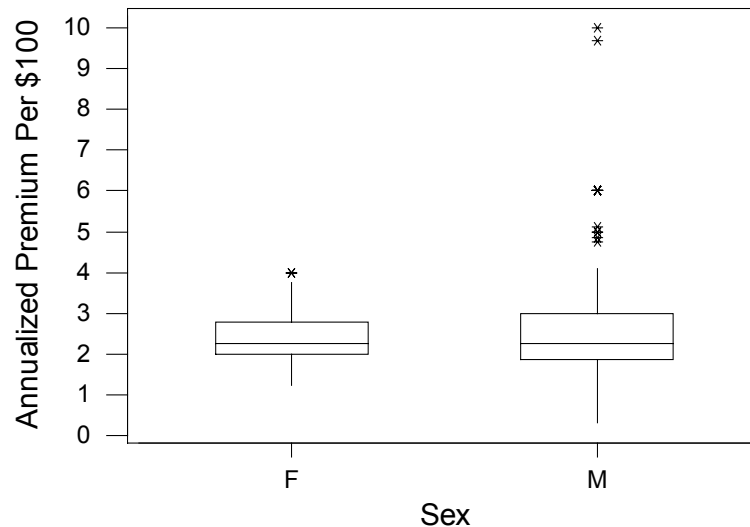
The rates were of course related to profession. Those working on boats (boatmen, firemen, cabin boy) were charged about 4% of insured value, on average. It is somewhat surprising that the miner policies were written at about 2% of insured value.

Curiously, these rates were not strongly related to age. This scatterplot shows the weak relationship:



The correlation is 0.185; this is statistically significant with $p < 0.01$, but not numerically impressive.

The premiums charged for male and female slaves were very similar, although nearly all the high premiums were charged for male slaves:



The two highest premiums, as noted previously, were for short-duration policies. There were eight policies at 5% and above:

Name	Age	Profession	Insured amount	Premium	Duration of policy (months)	Annualized rate per \$100 at risk
Abraham	20	Fireman	\$500	\$10.00	4	\$6.00
Bartlett	35	Fireman	\$600	\$30.00	12	\$5.00
Dennis	30	Not listed	\$300	\$15.00	12	\$5.00
George Cook	40	Fireman	\$500	\$15.00	6	\$6.00
Gustavos	27	Boathand	\$500	\$15.00	6	\$6.00
Ralph	21	Fireman	\$500	\$10.00	4	\$6.00
Tartan	45	Carpenter	\$300	\$ 0.96	(3 wks)	\$5.12
Tom	22	Fireman	\$500	\$10.00	4	\$6.00

The three policies of four-month duration were all written for slaves of John Buntai, of Union County, Kentucky, in 1846.

The lowest rate charged was for Jack, a 46-year-old wheelwright. He was covered for the period from 20 JAN 1846 to 13 JULY 1846 (about 5.75 months) for \$600. The premium is listed as \$0.89. If this represents the premium for the entire policy, the annualized rate per \$100 of coverage is 31 cents. It was not customary for the agent to list a per-month amount, and certainly not likely for an irregular time period. If, hypothetically, we assume that the agent collected six monthly payments of \$0.89, the total premium would

be $6 \times \$0.89 = \5.34 , and the resulting rate per \$100 would be

$$(12 \text{ months}) \times \frac{\$5.34}{5.75 \text{ months}} \times \frac{1}{\$600} = 1.86\%.$$

The next lowest rate was for 25-year-old Reuben Rucker, who was insured for \$450 for a standard twelve-month policy for \$4.20. The annualized rate works out to 0.93%. The policy was a followup to a previous twelve-month policy on which Reuben Rucker was listed as a miner. The previous policy was at a rate of 1.75%, surprisingly low for this profession.

The New York Life data base permits the regression of annualized premium per \$100 of value on the predictors Age, Year of Policy, and Gender. This regression is not impressive, with $R^2 = 4.8\%$, although it is statistically significant.

DID THE COMPANIES MAKE MONEY?

For Aetna, we have records for only a few policies, and we are unable to link them to the cases noted in Aetna's death list.

For American Internation Group (AIG) we do not have the premiums paid, but we can note that the New York Life premiums had an average of 2.54% per \$100 of value. If AIG charged premiums at anything near 2.5% of value, then AIG was a certain loser, since it experienced death rates around 5% per year.

For New York Life, we have records for 610 policies, and 15 of these were terminated by the death of the insured. These 15 policies collected premiums of \$182.50 (average \$12.17) and paid out \$7,474 (average \$498.30). This represents a loss to New York Life of $\$7,474 - \$182.50 = \$7,291.50$.

Here is a list of those deaths, by age (at date of policy) and amount paid:

Paid	Age		Paid	Age		Paid	Age
500	15		600	25		450	35
375	17		600	26		375	35
600	21		500	27		225	40
700	21		600	29		600	45
600	21		412	34		337	51

Of the remaining $610 - 15 = 595$ policies, there were 573 for which there was usable premium information. These collected premiums of \$7,049 (average \$12.30).

Since the losses related to the deaths exceeded the premiums collected for policies on the survivors, it would appear that New York Life lost money overall. The amount suggested here is $\$7,291.50 - \$7,049 = \$242.50$, which is very close to the break-even point. These

calculations do not include all the other supplies, salaries, and overhead borne by the company as well.

There are 592 cases for which we have complete detail on policy durations. Policies that ended with the covered slaves alive totaled 6,888 months. The policies that resulted in the 15 deaths involved 95 months. Thus, we have 15 deaths over $6,888 + 95 = 6,983$ person-months. This corresponds to an observed annual death rate of $\frac{15}{6,983} \times 12 \approx 0.0258$, meaning 2.58% per year. This is of course not an age-adjusted rate; however there were no very young children or very elderly among the insured, so that this is not a material issue.

This 2.58% is very close to the estimated premium rate for New York life of 2.54%. This is consistent with the observation that this was a near break-even enterprise for New York Life.

Again, it should be emphasized that we cannot determine whether this list of policies is complete. Should this list be incomplete, we also cannot determine whether it is representative.

One must hold out that adverse selection could here have created the impression that slave insurance was a money-losing operation. If all, or nearly all, the death records are extant, while large numbers of expiring policies have been lost, we would have created the impression of a higher risk of death than actually occurred.

One can ask as well whether these observed death rates were plausible. Evans (1962) presented estimates of death rates; these appear in Table 15 on page 212. These annualized rates for males were about 1% from age 10 to age 30, then about 1.3% to age 40, and then 2% to 3%. The rates for females were slightly higher until age 40, and then slightly better. These are reasonably consistent with the rates reported by Savitt. The New York Life experience was reasonably close to this picture, and so we find the accounting believable. The AIG estimated death rate of about 5% is seriously inconsistent, and we can only speculate as to the reasons. One possibility could be careless underwriting. There remains, of course, the worrisome possibility that we are seeing a censored data base in which the policies ending in deaths are faithfully recorded while many expiring policies are lost to followup.

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