

Introduction and statistical data from
Harold Kunreuther, Recovery from natural
disasters: insurance or federal aid? Eval. Studies, 1973
no 10

Flood Recovery Fast Track

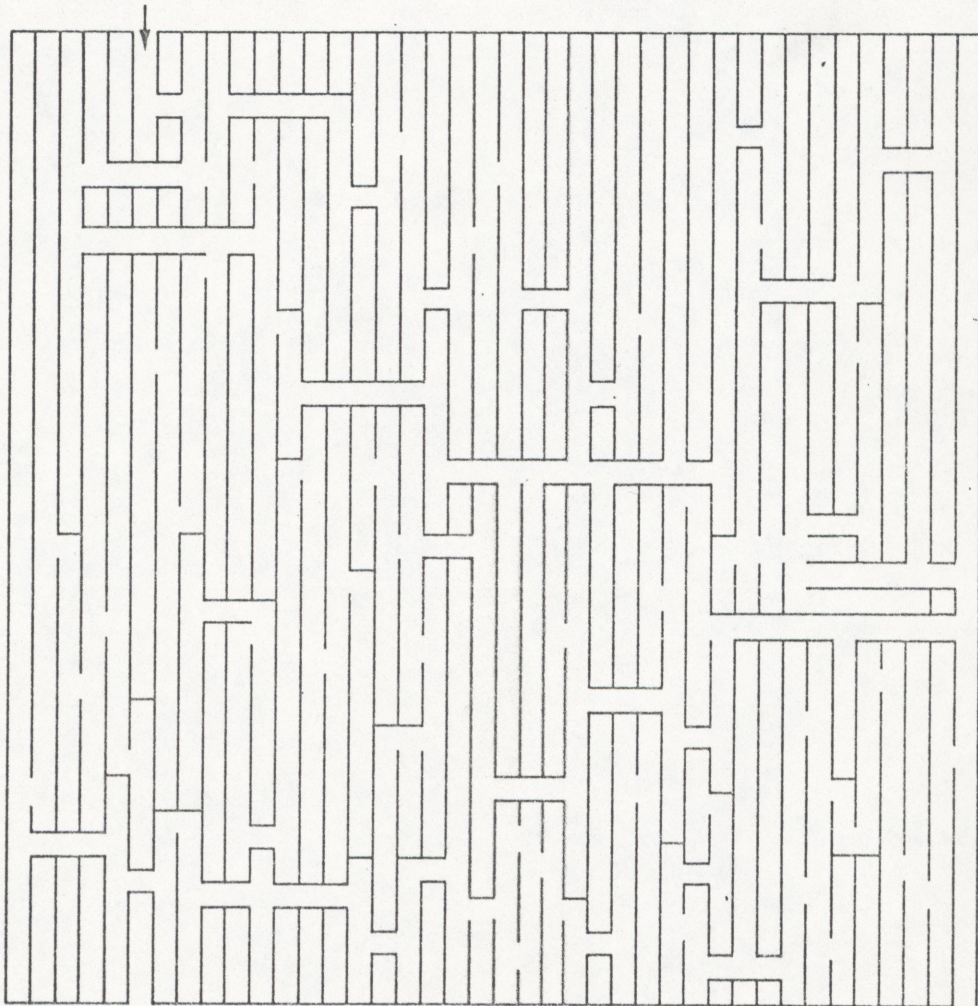


Evaluative Studies

RECOVERY FROM NATURAL DISASTERS

Insurance or federal aid?

Howard Kunreuther



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INTRODUCTION

Tropical Storm Agnes brought into sharp focus the problems of post-disaster relief and recovery. Total damage caused by the floods is estimated at over \$2 billion, making Agnes the costliest natural disaster in the nation's history.¹ Despite the fact that a number of the communities in the affected region qualified for the federal government's subsidized National Flood Insurance, very few people had acquired coverage before the flood. The Red Cross estimated that 5,222 dwellings and mobile homes were completely destroyed by Agnes and that an additional 44,662 suffered major damage. Total damage to private housing has been estimated at \$763 million.² However, only 1,583 claims, totaling \$5 million, were paid under the National Flood Insurance Program.

What is even more surprising is the lack of interest in coverage following the storm. In Harrisburg, where a large section of the city had been inundated and damage had been unusually severe, only 957 residential policies were sold during the first year following the storm despite concerted publicity efforts on the part of the insurance industry.

Few individuals have protected themselves voluntarily against the consequences of natural disasters, but many have turned to the federal government after having suffered losses, and Congress has responded with an increasingly open hand. The cost of repairing damage from natural disasters is now being treated as a public responsibility. The general taxpayer is being burdened with an increased role in the financing of recovery for those caught by misfortune despite the availability of insurance, of sites in less hazard-prone areas, and of construction methods that will reduce losses.

The current disaster relief program is perverse in its failure to discourage individuals from locating in hazard-prone areas. It may in fact even reinforce their decision to locate in hazard-prone areas and not to protect themselves against potential losses. A homeowner or business firm may actually be better off financially after the "disaster" than before. An extreme case from the August 1967 flood in Fairbanks, Alaska, illustrates this. A motel owner suffered damage estimated at \$140,000 but received a 3 percent loan for approximately \$894,000 to be paid over a 30-year period. Of this loan, \$704,000 was used to pay off outstanding debts and \$50,000 for working capital.³ Assuming the conventional loan rate was 7 percent, the present value of the loan was only \$566,000 instead of \$894,000. Thus despite the loss of \$140,000, the motel owner was \$188,000 better off after the disaster than before. It is no surprise to find residents of Anchorage and Fairbanks saying that the earthquake and flood are the two best things that have happened to Alaska in recent years.

This monograph will show that, on the average, disaster insurance is preferable to federal disaster relief from the point of view both of the homeowner and of the federal government. These conclusions are derived from a detailed analysis of Small Business Administration disaster loan files covering three recent major catastrophes: the San Fernando earthquake (1971), the Rapid City flood (1972), and Tropical Storm Agnes (1972). Chapter I provides a discussion of the changing federal role in disaster relief, including the National Flood Insurance Program, followed in Chapters II and III by an analysis of the three disasters chosen for specific consideration. The conclusion presents a brief summary. It must be noted that there is still a central question remaining to be answered. Should insurance coverage be voluntary or compulsory? Appendices A and B describe a program of research sponsored by the National Science Foundation designed to provide a data base for addressing the question.

Table 1
CHANGES IN SBA DISASTER LOAN LEGISLATION, 1953-1973

Laws and Regulations	Enactment	Relevant Dates and/or Disasters	Type of Declaration	Type of Loan	Interest Rate	Maximum Maturity	Maximum Forgiveness	Maximum Refinancing	Limits on Loan Size	Maximum Time Deferment of Payments	Remarks
PL 83-183 (Small Business Act)	7/30/53				3%	H-20 B-20	None	None	None	None	Those unable to pay referred to the Red Cross
PL 88-451	8/19/64	Alaska Earthquake				H-30 B-20					Mortgage forgiveness for houses held by Federal National Mortgage Association
Internal Directive		Alaska Earthquake		Hardship cases				No limit			
PL 89-41 (Pacific Northwest Relief Act of 1965)	6/17/65	Pacific Northwest Floods				H-30 B-20					
PL 89-59	8/30/65					H-30 B-30				5 Years	
PL 89-339 (Southwest Hurricane Disaster Act of 1965)	11/8/65	Hurricane Betsy	Pres.				\$1800				
SBA National Directive 560-1	9/15/67	9/15/67		Hardship cases				Monthly payments must never be lower than in pre-disaster period			
Internal Directive		1968							H - \$25,000 ^a B - \$100,000		
PL 91-79 (Disaster Relief Act of 1969)	10/1/69	7/1/67-12/31/71	Pres.	Non-hardship Hardship	6.75% ^b 3%		None \$1800	H - \$50,000 B - Included in loan limit	H - \$55,000 ^a B - \$500,000	3 Years	Refinancing for repair or replacement of property if damage is greater than 50% of pre-disaster value
			SBA		3%		None	None	None	None	

PL 91-606 (Disaster Relief Act of 1970)	12/31/70 4/1/70-12/31/70 ^c	Pres.	4 7/8-5 3/8 % ^d	\$2500	H - \$50,000 B - Included in loan limit	H - \$55,000 ^a B - \$500,000	3 Years	
		SBA	4 7/8-5 3/8 % ^d	None	H - \$50,000 B - Included in loan limit	H - \$55,000 ^a B - \$500,000	None	
PL 92-385	8/16/72 1/1/71-12/31/71		3%	\$2500	H - Monthly pay- ments must never be lower than in pre-disaster period B - Shall not exceed loss sustained	Same as in PL 91-606 ^f	3 Years	Refinancing for repair or replacement of property if damage is greater than 30% of pre-disaster value
	1/1/72-4/20/73		1%	\$5000			5 Years	
PL 93-24	4/20/73 4/20/73		5%	None	H and B - Monthly payments never lower than in pre-disaster period	Same as in PL 91-606 ^f	5 Years	
S. 1672	— Vetoed by President 9/22/73	Disaster victims can choose	1% 3%	None \$2500				

Note: H - Home Loans, B - Business Loans.

^a Does not include amount refinanced.

^b Based on average rate of U.S. securities having maturity of 20 years.

^c For disasters occurring between April 1, 1970 and December 31, 1970 applicants could apply for SBA loans based on either PL 91-79 or 91-606 provisions.

^d Based on average rate of U.S. securities of 10-12 years reduced by not more than 2 percent (rate determined monthly).

^e No limit on loan size for damaged businesses which are major source of employment in areas suffering a major disaster (Section 237).

^f In cases of extreme hardship administrator may waive limitations.

Source: Compiled by the author based on discussions with SBA personnel.

Table 2
ANNUAL FEDERAL DISASTER AID, FISCAL YEARS 1953-73
(\$ in millions)

Fiscal Year	President's Disaster Fund	SBA Disaster Loans	FHA Disaster Loans	Total
1953	8.1	—	44.1	52.2
1954	1.7	1.1	94.1	96.9
1955	14.5	8.2	89.1	111.8
1956	15.5	47.3	87.0	149.8
1957	15.6	14.8	66.7	97.1
1958	13.3	15.8	63.4	92.5
1959	8.4	4.4	39.8	52.6
1960	4.5	13.3	22.9	40.7
1961	13.0	16.9	26.5	56.4
1962	30.2	41.8	63.3	135.3
1963	33.8	22.4	62.5	118.7
1964	47.2	162.7	50.1	260.0
1965	86.2	72.7	78.4	237.3
1966	133.6	138.9	102.1	374.6
1967	22.0	10.6	95.8	128.4
1968	45.4	114.7	108.9	269.0
1969	29.2	17.2	115.6	162.0
1970	181.0	209.1	93.9	484.0
1971	145.7	422.7	132.6	701.0
1972	99.3	125.7	110.9	335.9
1973	474.4	1,523.7	565.2	2,563.3

Sources: President's Disaster Fund—Federal Disaster Assistance Administration, Reports and Evaluations; SBA disaster loans—Small Business Administration, Office of Reports; FHA disaster loans—Farmers Home Administration.

This table, taken by itself, does not indicate whether the recent increase in federal aid has been the result of a change in congressional attitude toward relief or of increased damage from natural hazards. It may be useful to look at specific disasters that have occurred since 1965 in order to gain a concrete picture of recent changes.

Table 3 presents figures on federal aid from the President's Disaster Fund and the SBA as well as insurance payments for ten major disasters occurring between 1965 and 1972.¹⁵ Federal aid did not exceed 20 percent of damage estimates for the first four disasters. Hurricane Celia began a period of increased federal aid (measured as a percent of damages) despite the fact that losses from Celia were caused primarily by wind rather than water and were therefore

insurable under a homeowners' policy. A homeowners' policy is normally required by financial institutions as a condition for a mortgage on property. Celia specifically illustrates that substantial insurance coverage on the part of victims does not preclude liberal federal relief.

In Figure 2 an attempt has been made to eliminate the influence of insurance availability on disaster relief. This has been done by showing federal aid as a percentage of all noninsured losses (that is, damage minus insurance payments). The difference between the first four disasters and the last six is even more pronounced in Figure 2 than in Table 3, thereby providing additional evidence that the level of federal aid for major natural disasters has substantially increased in the past three years. Figure 2 also shows that for two recent disasters (Hurricanes Celia and Fern) federal relief substantially exceeded the amount of noninsured losses. This may in part be the result of underestimating the damage caused by these two disasters. More likely, it is the result of recent legislation permitting low-interest SBA disaster loans for refinancing any mortgage or lien outstanding against damaged property. The next section will show how this provision has enabled individuals and businesses to profit financially from natural disasters.

Further evidence on increased federal disaster relief is provided by comparative data on the SBA disaster loan program. The growth of the program is easily seen in Figure 3, which contrasts the first ten fiscal years of operation (1954-63) with the most recent ten (1964-73). This growth is particularly significant in the case of home loans, where both the total number and total dollar values in the past ten years are more than twenty-five times what they were in the first ten years of the program. Part of this increase may be the result of a rising trend in damages from natural disasters. Even with this cautionary note, it is striking that the \$1.212 billion in SBA approvals for Agnes (see Table 3) represents more than 6.5 times the entire amount allocated by the SBA for all disasters between fiscal years 1954 and 1963.

It may be noted that the average size of all loans for the last ten-year period is more than \$3,600 lower than the average for the first ten-year period. However, the cost to the federal government has risen. The number of loans has shown a spectacular increase and, beginning in 1965, a portion of each loan has been forgiven.

The increasing role of the SBA in disaster relief may be seen by studying the ten major disasters occurring between 1965 and 1972. Loans approved for these disasters represent approximately 80 percent of all SBA disaster loans made during this eight-year period.

Table 3
FEDERAL AID AND INSURANCE LOSS PAYMENTS FOR SELECTED DISASTERS, 1965-1972
(\$ in millions)

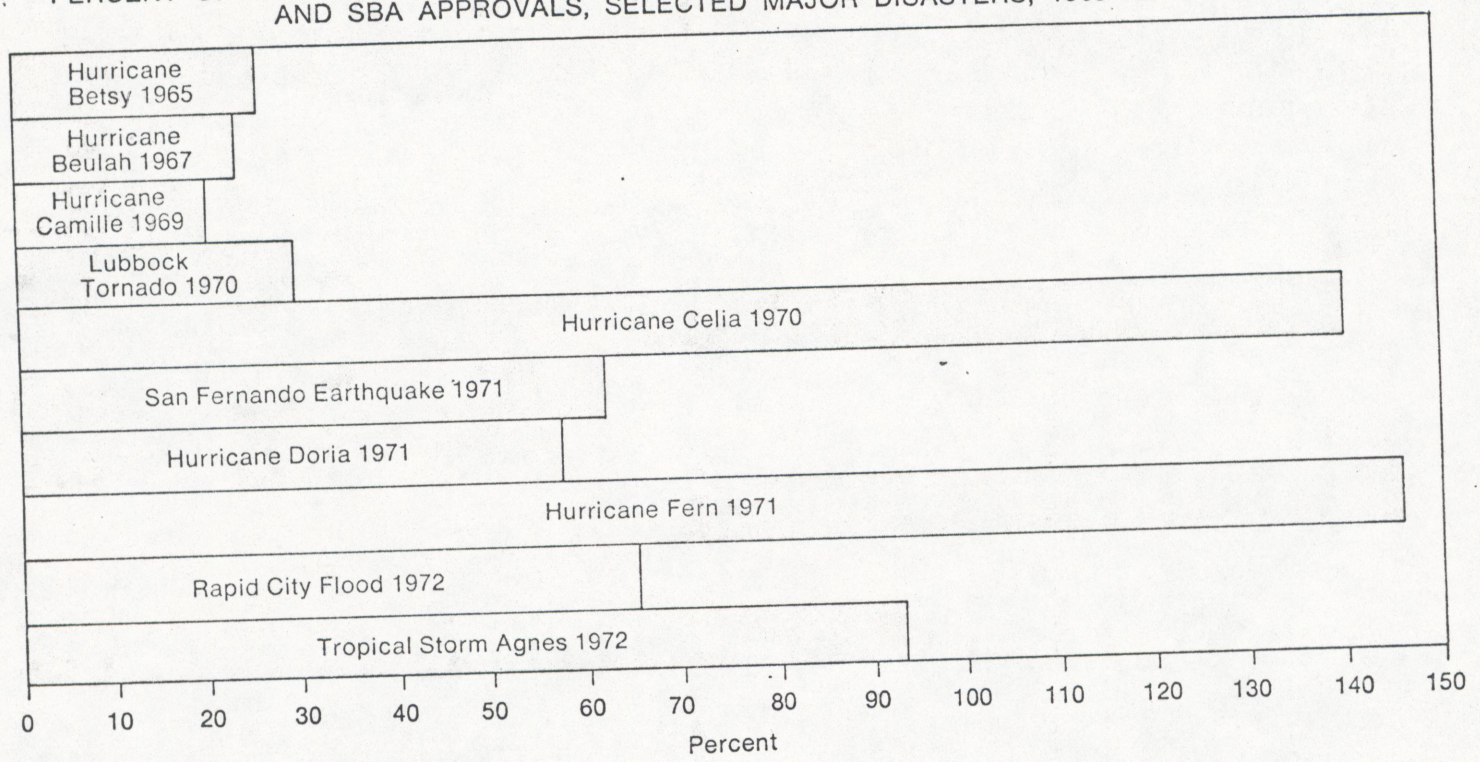
Date	Disaster	Damage	President's Disaster Fund Obligations	SBA Disaster Loan Approvals	Insurance Loss Payments	Percent of Damage			
						President's Disaster Fund obligations	SBA Disaster Loan approvals	Federal aid	Insur- ance
9/65	Hurricane Betsy	1,440	44	129	715	3.1	9.0	12.0	49.7
9/67	Hurricane Beulah	200	10	28	34 ^a	5.0	14.0	19.0	17.0
8/69	Hurricane Camille	1,421	90	160	225	6.3	11.3	17.6	15.8
5/70	Lubbock Tornado	135	6	19	50	4.4	14.1	18.5	37.0
8/70	Hurricane Celia	454	38	163	310	8.4	35.9	44.3	68.3
2/71	San Fernando Earthquake	500	37	257	32	7.4	51.4	58.8	6.4
8/71	Hurricane Doria	147	21	57	14	14.3	38.8	53.1	9.5
9/71	Hurricane Fern	30	6	36	1	20.0	120.0	140.0	3.3
6/72	Rapid City Flood	163	31	65	13	19.0	39.9	58.9	7.7
6/72	Tropical Storm Agnes	2,000	561	1,212	98	28.0	60.6	88.6	4.9

^a Includes fixed property losses only.

Sources: Damage—National Oceanic and Atmospheric Administration and Federal Disaster Assistance Administration, Reports and Evaluation; President's Disaster Fund obligations—Federal Disaster Assistance Administration, Reports and Evaluation; SBA approvals—Small Business Administration, Office of Reports; Insurance loss payments—American Insurance Association.

Figure 2

PERCENT OF UNINSURED LOSSES COVERED BY PRESIDENT'S DISASTER FUND OBLIGATIONS
AND SBA APPROVALS, SELECTED MAJOR DISASTERS, 1965-72



Inasmuch as the SBA believes that the characteristics of the other loans it has made since 1965 do not differ significantly in any respect from these, the conclusions derived from this analysis may be generally applied.¹⁶

The upward trend in dollar values of loans and amounts forgiven is clearly shown in Table 4, which covers home and business loan data for the ten disasters. One is immediately struck by the large increase in both these totals for disasters occurring in 1971 and 1972. This is the result of an increase in the number of loans made for these recent disasters and the liberalization of the forgiveness clause. In these two years the average portion of each loan forgiven was almost 70 percent for home loans and over 20 percent for business loans. These figures support the belief that individuals have not adequately protected or insured themselves against damage from natural disasters and have sought out the federal government as their principal source of financial relief.

The effect of the forgiveness feature on the size of home loans for these ten major disasters is seen in Table 5. For the first eight disasters the maximum amount of forgiveness was obtained if the loan was approximately \$3,000. A significant percentage of the

Table 4

SBA LOAN AMOUNT AND FORGIVENESS AMOUNT FOR
TEN MAJOR DISASTERS BY TYPE OF LOAN, 1965-1972
(\$ in millions)

Disaster	Home		Business	
	Total loan	Forgiveness	Total loan	Forgiveness
1965-1970				
Hurricane Betsy	92.0	37.2	37.0	2.8
Hurricane Beulah	15.6	6.9	12.5	1.7
Hurricane Camille	98.9	21.1	62.7	2.0
Lubbock Tornado	6.7	1.9	12.0	0.5
Hurricane Celia	115.2	35.6	48.5	2.8
1971-1972				
San Fernando Earthquake	212.8	156.0	43.7	8.9
Hurricane Doria	47.4	39.8	9.2	2.2
Hurricane Fern	35.2	27.1	1.9	0.8
Rapid City Flood	33.6	14.4	31.8	4.7
Tropical Storm Agnes	674.7	452.0	537.1	91.8

Source: Small Business Administration, Office of Reports.

Table 5

DISTRIBUTION OF SBA HOME DISASTER LOANS IN MAJOR DISASTERS SINCE 1965 BY LOAN SIZE

Loan Size	Hurricane Betsy	Hurricane Beulah	Hurricane Camille	Lubbock Tornado	Hurricane Celia	San Fernando Earthquake	Hurricane Doria	Hurricane Fern	Rapid City Flood	Tropical Storm Agnes
0-\$500	1.4%	10.8%	0.9%	10.8%	1.7%	2.0%	2.2%	1.7%	3.0%	1.7%
\$501 -\$1,000	5.3	27.1	4.3	16.7	6.3	5.9	10.0	7.0	7.6	3.4
\$1,001 -\$1,500	8.7	20.6	6.2	13.4	10.4	7.9	17.6	13.4	8.0	4.9
\$1,501 -\$2,000	11.2	13.7	7.3	10.7	13.0	9.5	19.6	15.1	8.0	5.7
\$2,001 -\$3,000	44.8	19.5	33.4	19.7	29.4	34.9	31.6	31.2	24.8	26.2
\$3,001 -\$5,000	13.2	3.8	14.6	8.2	24.1	37.3	17.6	27.2	19.5	32.4
\$5,001 -\$10,000	11.7	2.8	15.4	6.8	10.4	1.9	1.2	4.1	13.1	17.0
\$10,001-\$25,000	3.5	1.5	12.2	12.1	4.3	0.5	0.2	0.3	8.3	6.6
Over \$25,000	0.2	0.2	5.7	1.6	0.4	0.1	—	—	7.7	2.1
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number of loans	26,506	7,905	14,260	1,594	31,871	73,780	20,720	12,565	3,050	92,393
Average size of loans	\$3,469	\$1,970	\$6,937	\$4,228	\$3,616	\$2,886	\$4,374	\$2,687	\$11,023	\$5,521

Source: Small Business Administration, Office of Reports.

