

WINNERS AND LOSERS: SOME THOUGHTS ABOUT THE POLITICAL ECONOMY OF DISASTER

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While it is obvious disasters are negative events causing injury and death, damage and destruction, macro-economic studies show little long-term economic effects from disaster. That is because disasters create both losers and winners and these balance out. Who loses and who wins is not random but a result of public policy decisions. The losers include individuals who are injured, lose their jobs, lose their home and families who lose a wage earner or a place of residence. The winners include individuals who earn extra money because they are involved in emergency response or restoration. They include wage earners and their families. They include some businesses, not others. They include communities which, because of substantial assistance, end up better off because of the disaster. Winners and losers are created by decisions about where to build a dam, who should receive what sort of assistance. This article is not based on new research but on an analysis of existing material. More research needs to be done on the economic effects on individuals and businesses and on communities and of the economic impact of policy decisions.

The Oxford dictionary defines disaster as a "sudden or great misfortune." *Encyclopaedia Britannica* puts it under fires, coal mines, floods and earthquakes:

Probably the most famous of all earthquakes [it reports] is the one which destroyed Lisbon on November 1, 1775. . . . Within six minutes at least 30,000 people were killed, all large public buildings and 12,000 dwellings were demolished.

Charles Fritz's class definition says a disaster is:

an event, concentrated in time and space, in which a society or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of society is prevented. (Fritz 1961, p. 655)

Disasters are, in other words, negative events.

Disasters **do** cause stress, injury and death, dislocation, damage, destruction. Yet--in economic terms--there's another side to the story. Three alternatives have been put forward: that disasters (at the community level) produce no discernible effects; that disasters produce positive economic effects; that disasters produce mixed economic results, winners and losers.

THE THEORIES

The finding there were no effects came out of research by Paul Friesema and others when they looked at four disaster-stricken United States cities:

The conclusions of this research are striking and straightforward. They can be summarized rather simply. So far as we can determine, none of these disasters led to major long-term economic losses to these communities. . . . The pervasive conclusion . . . is that the disaster caused little economic change. (Friesema et al. 1979, pp. 176-177)

The finding disasters can be positive (in economic terms) was by Samuel Henry Prince, the first person to seriously study disaster. (He studied the response to the explosion which devastated Halifax, Nova Scotia, Canada, on December 6, 1917):

the effects may not stop with mere recuperation. Suppose a city becomes in a trice more prosperous and progressive than ever. Suppose she begins to grow populous with uncommon rapidity; her bank

numbers; new companies come looking for sites. . . . Perhaps we shall find progress innate in catastrophe itself. (Prince 1920, p. 117)

Dacy and Kunreuther support Prince:

Communities hit by a natural disaster are often rebuilt so they emerge bigger and better than they were before the event. (Dacy and Kunreuther 1969, p. xi)

The proposition disasters create winners and losers was put forward by C.C. Carstens. Writing in December 1917, just 22 days after the Halifax explosion, Carstens (his work was quoted approvingly by Prince) predicted:

The Halifax disaster will leave a permanent mark upon the city for at least a generation. . . . But it is possible that the disaster may leave a mark of another sort . . . that Halifax will gain as well as lose . . . the death and suffering at Halifax will not have been in vain. It will not have been all loss. (Carstens 1917, p. 361)

This article suggests macro-economic research, which shows no appreciable economic effects of disasters, misses the many individual gains and individual losses, gains and losses which cancel each other out. As Wright and Rossi point out, while disasters may not affect the overall community, they

are not trivial from the point of view of the victims involved, and there may be quite serious long-term effects on the health and economic well-being of the householders and firms that have been direct victims of the smallest natural disaster events. (Wright and Rossi 1981, p. 20)

The article, in short, accepts Carstens' view: there are winners and losers.

But it goes further. It argues the gains and losses are not random but the result of several things including public policy. And it argues that

those public policy effects take place at all stages of the disaster experience--from mitigation to recovery.

The idea disasters create winners and losers has not been entirely ignored. In addition to being first enunciated by Carstens and quoted by Prince, it was mentioned by Peter New: he referred to "Fun and Profit" in discussing disasters crediting the idea to Irwin Deutscher (New 1957, p. 32).

However, while the idea is not original and while there is empirical support for many of the specific points put forward, the concept of winners and losers has not been tested empirically. Therefore, the propositions advanced here are presented as material for discussion.

To make certain this paper is not misinterpreted, it must be made clear this article does not suggest disasters do not bring on human suffering, perhaps leave permanent emotional scars on some persons. It also does not suggest "winners" are exploitive.

Finally, this article accepts that there are economic costs to disaster. As Dacy and Kunreuther have stated:

The total economic cost of any disaster to the nation is the replacement value of the property destroyed. This is true regardless of whether or not there is a relief program. (Dacy and Kunreuther 1969, p. 206)

What this article is suggesting is that those economic costs are not only not evenly distributed, they are so unevenly distributed that while there are some who lose (and that loser could be the national treasury) there are others who win. Some persons, families, organizations, communities get specific economic benefits as a result of disaster.

INDIVIDUAL LOSERS

The most obvious losers are individuals who are injured, perhaps permanently, by the disaster. No aid program, no economic recovery can ever make up for what happened to them. And injuries are not just physical, they lead to costs--such as health costs--and to loss of earning power.

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But injuries aren't the only reason why persons suffer economically. A person's place of work may have been destroyed. Perhaps his or her place of employment can't produce a product. Perhaps the product can be produced but not shipped. (That happened to farmers in Prince Edward County when a snow emergency blocked roads and prevented them shipping milk.) (Scanlon with Taylor 1977)

What people have before the disaster may also affect what they will get after it:

lower income groups consistently bear a disproportionate share of the losses. They receive, in most instance, the smallest proportion of disaster relief, they are the least likely to be insured (for either health, life or property) and they live in dwellings which are of the poorest construction and most subject to damage. (Cochrane 1975, p. 10)

Family characteristics that will affect their recovery potential include the stage in the family's life cycle and the family's socio-economic status. The stage of life cycle position of families is important in the sense that older persons have a greater sense of loss and deprivation in the aftermath of disasters. These feelings have objective bases since older families are more likely to have mortgage-free homes and other objects symbolizing a lifetime of work and experience which may be lost in a disaster. (Bolin and Trainer 1978, p. 235)

Robert Geipel, who studied the Friuli earthquakes, suggests even a person's influence and connections affects his ability to recover from a disaster:

The ordinary people were pushed into the background while reconstruction . . . was going on, so that, for them, the after effects of the catastrophe have been getting worse. . . . (Geipel 1982, p. 78)

better contacts and the possession of superior information permit

reconstruction immediately, whereas the little man trying to build his own home is put off. . . . (Geipel, 1982, p. 78)

INDIVIDUAL WINNERS

As some individuals are losing money, others will be doing better. Emergency workers--police, fire, ambulance, hospital, utility crews--especially those who get paid overtime will obtain substantial increases in pay.

Lawyers may be the biggest winners of all. Many disasters--air crashes, train wrecks, shop wrecks, toxic spills--are followed by inquiries and civil litigation. These procedures involve numerous lawyers, who, no matter what the outcome, will be well paid.

Other winners may be those who--perhaps because they surface as emergent leaders--gain status and income as a result of a disaster. Sometimes emergency organizations promote persons because of effective performance in a disaster.

Sometimes persons doing the same job will receive different compensation. During a flood threat to Princeton, British Columbia, some emergency workers were considered volunteers and were not paid while others doing the same thing were paid as ambulance personnel. (Scanlon with Prawzick and Conlin, 1988)

Economic benefits to individuals may spread well beyond the impact area. Power companies, to use just one example, normally assist each other in major disasters. That means increased wages will be paid to individuals from outside the area of impact. (Scanlon with Brisebois and Lachance 1986)

Sometimes a decision by one company can create winners and losers. After the Terrace, British Columbia, floods the railway laid off train crews (with the rail lines washed out the trains couldn't run). But it hired independent truckers to haul fill to restore the washed out road bed. (Scanlon with Taylor and Jarzab 1978; Scanlon 1980)

In *Tornadoes Over Texas*, Moore found that same sort of uneven unemployment takes place when certain types of skills are needed in restoration of damaged properties:

in the construction industry, the initial demand was for roofers and carpenters rather than general construction workers. (Moore 1958, p. 51)

FAMILIES

If the head of a family is killed or injured or loses employment, the family suffers, too. And the family can suffer in other ways.

Haas, Kates and Bowden state:

It is easy to recognize how death and serious injury within the immediate family may make recovery difficult. Having the family residence damaged to the point that it is uninhabitable produces major disruption for most families. If income stops for an extended period of time because the employer of a family wage-earner is closed down or the job is abolished due to the destruction of the work place, this can cause problems for even a healthy family whose home is intact. Even a situation where the employer moves some distance from the pre-disaster location, this change in the trip to work can be disruptive. (Haas et al. 1977, p. 35)

Even if a family evacuates to avoid a threat, they will probably be forced to spend money on transportation or, if they don't go to a public shelter or to friends or relatives, on accommodation.

And--as always--there is the other side. Some families may be economic winners:

My house was completely blown away. I just went and settled with my own insurance company. Now I want to tell you this. If your home is built for \$12,000 and it's been destroyed and you build another for \$10,000 that \$2,000 goes into your pocket and not into the insurance company or the contractor's. That's your money. (New 1957, p. 32)

A report in the *Los Angeles Times* suggests this type of behavior is not atypical:

Homeowners were given funds to repair damage not caused by earthquakes; homeowners frequently got more money than they needed to repair damages; homeowners used funds to remodel their homes. . . . Homeowners did their own work when loans were based on a contractor doing it. Some pocketed the difference; the SBA [Small Business Administration] sometimes gave money for personal property without any proof of loss. (Rawitch and Reasons 1972)

BUSINESSES

Businesses, too, can fall into either category.

In a snow emergency in Prince Edward county, Ontario, a quarrying operation was forced to stop because of a whiteout (Scanlon with Taylor 1977). In Terrace, logging operations ceased because of heavy rains and flash floods (Scanlon with Taylor and Jarzab 1978; Scanlon 1980). In Woodstock, Ontario, after a tornado, some businesses shut down because of damage, others closed because the tornado knocked out the town's water supply (Scanlon with Brisebois and Lachance 1986).

Yet in Terrace--where logging operations stopped--the ferries did a land office business because the normal route by road was out. The helicopter companies could not handle the demand. Motels and hotels were jammed by stranded motorists and with those who had responded to the disaster--highway crews, repair crews, truckers, helicopter crews, even researchers. (Scanlon with Taylor and Jarzab 1978; Scanlon 1980)

Businesses' sales can also be affected by disaster-related needs. Hardware stores may experience a run on candles and oil lamps. Insurance agencies may find new interest in certain types of coverage.

One furniture store in Terrace, certain the government would eventually compensate those who lost furniture from flood damage, offered special deals for disaster victims; buy now, pay when the government pays you. It did enormous business. (Scanlon with Taylor and Jarzab 1978; Scanlon 1980)

A single company may be a winner and a loser. A telephone company may increase revenue from the huge increase in long distance dialing. It may also be repairing damage caused by the same disaster.

The Terrace floods knocked out the rail lines which connect the wheat-growing prairie provinces to Prince Rupert, the nearest Canadian port to the Orient. Ships were forced to take the longer trip to Vancouver where they had to wait in line to load. The losses included not only the extra steaming time and the delay in Vancouver, but the possibility those delays would lead to further delays--missed orders in the months ahead.

After the same disaster, a lumber firm could not use its gas kiln to dry lumber because the gas pipe was broken. Kiln employees were laid off. They lost. The lumber was shipped green at a lower price. The company lost.

The lumber was also shipped west through Prince Rupert then by ship through the Panama Canal instead of east by rail. That meant the railways lost (a short trip to Prince Rupert instead of the cross-continent trip east). But Prince Rupert gained. The Panama Canal gained. The east coast ports gained. (Scanlon with Taylor and Jarzab 1978; Scanlon 1980)

These were the kind of complications Kenneth Prewitt had in mind when he discussed the article by Rossi and his associates (1978) entitled "Are There Long Term Effects of American Natural Disasters?"

But there is a level of effect which has not been explored . . . and indeed probably could not be explored in any extant data base, that is the effects on the system as a whole. We have a very intertwined national economic structure, with communications, transportation, and economic systems criss-crossing the nation. (Prewitt in Wright and Rossi 1981, p. 38)

Prewitt could have also cited international complications. (The effects of the Chernobyl on Lapland--radiation in moss is affecting reindeer and thus the economy--show how widespread impact can be.)

COMMUNITY

At the community level, the situation is more complicated partly because impact is increasingly hard to measure as the measurement base

The losses experienced by an individual or household are large compared to that unit's resources, while for a city, county or state, the ratio of losses to available resources is small. (Wright and Rossi 1981, p. 20)

A community may lose if damage reduces its tax base or if firms decide to relocate. It will gain if expenditures on disaster recovery or restoration exceed losses.

Seward, Alaska, was in economic decline before the 1964 Alaska earthquake. It was devastated by the earthquake.

The cards lay face up on the table: (1) An economically declining town had been almost totally destroyed; and (2) competitive facilities at Anchorage and Whittier were relatively unscathed. (Dacy and Kunreuther 1969, p. 177)

It made sense not to rebuild the damaged areas of the port at Seward. But--because of pressure from a United States Senator--Seward was rebuilt. It was a winner. (Dacy and Kunreuther 1969, p. 177)

A community may also gain if income paid to disaster workers (such as overtime to hospital staff) is funded from outside the community or if damage is covered by compensation or insurance. But if a community is a winner, the money must come from somewhere. Gilbert White made this point quite tellingly:

If the economic impact of a tornado on a community turns out to be relatively modest, this is due to some extent to transfers from government. . . . To pursue the argument further, it might be asserted that if only the modes of making income transfers in the wake of disasters could be improved, there would be virtually no significant economic losses in the communities and only a much greater drain on the national treasury. (Gilbert White in Wright and Rossi 1981, pp. 174-175)

The community may be the winner, the country is the loser.

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Specific public agencies may also benefit from a disaster. In Medicine Hat, Alberta, after a train derailment, police persuaded the municipal council to buy a new mobile command post (Scanlon with Osborne forthcoming). After the earthquakes the Alaskan Disaster Office got a new radio system:

In the summer of 1964, the state legislature appropriated \$25,000. . . . By the fall of 1965 . . . this . . . included a 15,000 watt base station . . . to be installed in Juneau, Anchorage and Fairbanks. . . . Another physical resource change was the acquisition of a new office. (Anderson 1969, p. 59)

Agencies like the Salvation Army and Red Cross can benefit as well. Their high profile during disasters affects their image and ability to solicit members and volunteers and funds.

WHO DECIDES?

Some persons win or lose simply because of chance. If a tornado cuts a swath through a community, it will hit some homes and businesses and miss others, and often the hits and misses are just metres apart.

Some persons and/or businesses lose because of their own actions. A firm which has taken precautions--moved equipment up high above the projected level of a flood--may be less affected than one which has not.

Public policy decisions are also important. Building dikes or a floodway (as was the case in Winnipeg, Manitoba) can alter the impact of a potentially catastrophic event. A dam may even alter the economic structure above it (water may replace villages and or farmland) and the value of property below it.

the Corps of Engineers is, against its inclinations, one of the major real estate development agencies in the country. (White et al. 1958, p. 235)

Economic effects also occur during the warning period. In Princeton,

mill and mine to evacuate relatives. The mill workers were paid even if they left. The mine workers lost pay for missed time. The mill also lost production, therefore revenue. The mine--despite the absences--kept up normal production. (Scanlon with Prawzick and Conlin 1988)

The reaction to the warning made mine workers losers (they lost pay), the mill a loser (it lost production) and the mine (same output with fewer workers therefore less costs) a winner.

Sometimes decisions made prior to the onset of the problem affect what happens. In Manitoba, with floods approaching, decisions to move animals, move people, stockpile resources reduced the impact of the subsequent floods. (Hannigan and Kueneman 1974)

Even after impact, policy decisions can affect winning and losing. After the snow emergency in Prince Edward County, a decision had to be made about which roads would be cleared first. That determined which farmers would ship milk first. (Scanlon with Taylor 1977)

Even tax policy can be relevant. The ability to write off disaster losses is a function of an individual's income and tax situation.

Some individuals for reasons of sickness, age (fixed retirement income), unemployment or a low, paying occupation would have relatively low income against, which these losses could be applied. (Cochrane 1975, p. 72)

The same applies to businesses. Dacy and Kunreuther even argue the form of outside assistance--grants versus repayable loans--in fact the very existence of outside help will affect recovery:

It is thus not surprising to find that Anchorage, which received a substantial amount of funds in the form of Federal grants, was practically fully rebuilt two years after the quake, where as Skopje, Yugoslavia, with limited outside help, has made a much slower recovery. . . . (Dacy and Kunreuther 1969, p. 76)

COMMENTS

Total economic effects may be far more complicated than this article

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response but may lose over the long-run because of disaster-related injury or stress problems. One firefighter had to quit his job after inhaling chlorine gas at the Mississauga, Ontario, train derailment. A number of police quit the San Diego police department as a result of the stress of dealing with bodies at the 1978 air crash. (Scanlon and Prawzick 1985)

It will take substantial empirical research to test the ideas presented here, to develop the data base necessary to achieve a fuller understanding of the economic consequences of disaster. Yet this article does produce substantial evidence that the concept of winners and losers is valid and that decisions by persons in public positions affect who wins and who loses.

There is also evidence that the economic issues related to disaster are not totally ignored by the public. A judge conducting a Royal commission inquiry into flooding in Ontario reported:

There exists a large body of opinion in the watershed which takes the view that those who take risks and live in the flood plain should not expect the rest of the residents to pay for their gamble. They feel this is inequitable. (Leach 1975, p. 27)

Jacquelyn Bleyer pointed to the same problem:

The dilemma for rational flood damage reduction . . . is that relief measures and emergency assistance unless properly designed tends to encourage persistent occupance. (Bleyer 1974, p. 271)

Since the original version of this article was written, ECRU, the Emergency Communications Research Unit at Carleton University in Ottawa, Canada, has unearthed more winners and losers.

In Medicine Hat, when a train derailed, caught fire and spilled toxic chemicals, businesses were evacuated (they lost money) by policemen working overtime (they made money). Fire equipment was brought in from several hundred kilometres away (the firm made money) and the cost billed to the province (it lost money). (Scanlon with Osborne forthcoming)

In Gander, Newfoundland, after an air crash killed 256 persons,

Companies were working overtime, the hotels were crowded (some persons had to share rooms). The airport had increased commercial traffic as media, investigators and researchers poured into Gander. (NBC even brought a charter aircraft with satellite equipment in from London.) There were certainly losers: the soldiers and their families and the charter company; but there were also winners. (Emergency Communications Research Unit 1987)

In the July 31, 1987, Edmonton, Alberta, tornado some persons were killed, others injured, others left homeless. Many lost their jobs at least temporarily when a steel plant shut down. But police and firefighters at in day after day of overtime as did repair crews from the various utilities. Some private contractors stayed on call 24 hours a day (fully paid) for several days. (Scanlon with Prawzick and Osborne 1987)

Disasters clearly produce winners and losers.

This article indicates two fruitful lines of inquiry into the economics of disaster:

- * an examination of disasters from a micro-economic point of view, that is the effects on individuals and individual businesses;
- * an examination of disaster-related transfer payments to see who loses and who benefits.

Like much in this article, these ideas are not entirely new. Wright and Rossi have already suggested:

An extremely important direction in which future research should go is to estimate the effects at the level of households and businesses. (Wright and Rossi 1981, p. 184)

Gilbert White implied the second in his comments quoted earlier.

The purpose of this article was not so much to break new ground but to pull together evidence which suggests there may be a pattern to the economic effects of disasters, that such events create winners and losers and that who is in each category is at least in part the result of public policy; and to stimulate further research.

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