

DISASTER AND RECOVERY

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Abstract

Although largely unexamined by economists, disasters are natural economic experiments. In community-wide ("middle-scale") disasters like floods or bombing raids, the problems are mainly technological and distributive: e.g., coping with resource scarcities and arranging fair compensation. Historical experience has shown that, in such disasters, individual and group behavior is mainly adaptive. Survivors help one another, and aid flows in from the outside. In society-wide ("large-scale") disasters like destructive wars and revolutions, however, the survival of the social order itself may come into question. The key problem here is the maintenance or restoration of the money-mediated division of labor, failure being frequently evidenced by a movement of population from the cities closer to sources of food in the countryside. For middle-scale disasters, the main policy issues concern the extent of government aid and its form, given that such interventions may subvert the adaptive efforts of private parties. Society-wide disasters are themselves typically due to massive government malfunctions (property confiscations, unrealistic price controls, monetary mismanagement), and recovery generally depends upon restoration of property rights and the market system.

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Defeated in battle and ravaged by bombing in the course of World War II, and subjected to territorial amputations and punitive reparations afterward, Germany and Japan nevertheless made postwar recoveries that startled the world. Within ten years these nations were once again considerable economic powers; a decade later each had not only regained prosperity but had economically overtaken, in important respects, some of the victors of the great war.

The surprising swiftness of recovery was also noted in previous eras. John Stuart Mill commented on:

...what has so often excited wonder, the great rapidity with which countries recover from a state of devastation; the disappearance, in a short time, of all traces of the mischiefs done by earthquakes, floods, hurricanes, and the ravages of war. An enemy lays waste a country by fire and sword, and destroys or carries away nearly all the moveable wealth existing in it: all the inhabitants are ruined, and yet in a few years after, everything is much as it was before. [Mill (1904), Book I, Ch. 5]

Still, successful recovery is by no means universal. Most famously, the centuries-long Dark Ages followed the fall of the western Roman Empire. And although Germany and Japan ultimately became success stories, seemingly well-grounded arguments were put forward, during the period of great privation in the immediate war aftermath, for doubting whether these economies would recover in the foreseeable future.

Sociologists, psychologists, historians, and policy planners have all devoted considerable attention to the nature, sources, and consequences of

disaster and recovery, but the professional economic literature is distressingly sparse. As a telling example, the four thick volumes of The New Palgrave: A Dictionary of Economics [1987] omit these topics entirely; the words "disaster" and "recovery" do not even appear in the index of that encyclopedic work. (The word "catastrophe" does appear, but only in connection with an esoteric topic in modern mathematics.) Yet disasters are natural economic experiments; they parallel the tests to destruction from which engineers and physicists learn about the strength of materials and machines. Much light would be thrown upon the normal everyday economy if we understood behavior under conditions of great stress.

THE HISTORICAL RECORD

While everyday small-scale tragedies like auto accidents and disabling illnesses are disastrous enough for those personally involved, only larger-magnitude events are of concern here. As extent and severity increase, existing problems take on increased intensity and new problems emerge. It will be useful to distinguish between (i) the community-wide (middle-scale) calamities exemplified by tornadoes, floods, or bombing raids and (ii) the society-wide (large-scale) catastrophes associated with widespread famine, destructive social revolution, or defeat and subjugation after total war. The former may involve deaths on the order of hundreds or thousands of people, the latter hundreds of thousands or millions. (As a special case, hyperinflations and great business depressions, although calamitous in terms of social disorganization and disruption of production, do not directly involve massive casualties.) In community-wide disasters the intact fabric of the larger social order provides a safety net, whereas society-wide

catastrophes threaten the very fabric itself.

Middle-scale or community-wide disasters are, on an historical scale, relatively frequent events, permitting generalizations from observed experience. In the main, individual and community behavior has been found to be adaptive. Survivors have proved not to be mere helpless victims; very soon after the shock they begin to help themselves and one another. In the immediate post-impact period, community identification is strong, promoting cooperative and unselfish efforts in rescue, relief, and repair. After the San Francisco earthquake of 1989, for example, inhabitants of a poor neighborhood spontaneously and at personal risk helped rescue motorists trapped by a freeway collapse. And after the Anchorage earthquake of 1964, local supermarkets kept the prices of necessities low while consumers generally cooperated by self-rationing. (On the other hand, there have been some serious instances of anti-social behavior, for example looting after Hurricane Hugo struck the Virgin Islands in September 1989.) As an even more reliable generalization, the crisis almost always triggers a flow of resource support, both human and material, from outside the immediate impact area -- a phenomenon that has become known as "convergence behavior." Surprisingly often, recovering communities even come to surpass previous rates of progress, owing to the emergence of new leaders, to enhanced social cohesion, and to the abolition of outmoded attitudes and regulations.

To direct attention more specifically to the economic picture, it will be useful to describe an event at the upper end of the intensity scale for community-wide disasters: the fire bombing attacks on Hamburg over a period of ten days in July and August of 1943. As normally occurs in such situations, people proved tougher than structures; the raids destroyed about

50% of the buildings in the city, whereas the fatalities were around 40,000 (under 3% of the population at risk, with about an equal number of injuries). In the immediate aftermath about half the survivors left the city; some 300,000 returned in the recovery period, while around 500,000 were permanently evacuated to reception areas throughout Germany. A "dead zone" of the city was closed off so that repairs could be concentrated in the less seriously damaged areas. Electricity, gas, and telegraph were all adequate within a few days after the attacks ended. Water supply remained a difficult problem, however; tank trucks had to be used, and privies were dug. The transit system recovered only partially, owing both to serious damage suffered and abnormally heavy traffic. But through rail service was resumed in a few days, on the seventh day the central bank reopened, and business began to function normally. Hamburg was not a dead city. Within a few months, the U.S. Strategic Bombing Survey reported, it had recovered 80% of its former productivity.

Turning now to truly large-scale disasters, the Bolshevik attempt to impose "war communism" in Russia in 1917-21 -- dispensing with markets and even the use of money -- provides an extremely instructive instance. During the civil war itself the Russian economy had already headed drastically downward; industrial production fell to only 20% of the pre-war level, and the sown area in agriculture to around 70%. But remarkably, it was only after the final Red victory that the economy, instead of recovering, went into a total downspin. Quoting Lenin:

On the economic front, in our attempt to pass over to Communism, we had suffered, by the spring of 1921, a more serious defeat than any previously inflicted on us by Kolchak, Denikin, or Pilsudsky.

Compulsory requisition in the villages and the direct Communist approach to the problems of reconstruction in towns -- this was the policy which ... proved to be the main cause of a profound economic and political crisis... [Baykov, p. 48]

The explanation appears to be that, initially, the Bolsheviks had established direct control only over the "commanding heights" of industry, i.e, over a relatively small number of large factories located mainly in the major cities. Elsewhere, a variety of private and cooperative arrangements kept industry and trade functioning, at least minimally. Military victory permitted the communist ideologues to turn their attention to liquidating these remnants; in addition, many small capitalists who had stayed on in the hope of Soviet defeat decamped and abandoned their enterprises. Consequently, the paradox of economic collapse after political and military victory.

The shift in mid-1921 to the New Economic Policy (NEP), restoring monetary exchange and allowing considerable scope to private enterprise, led almost immediately to a substantial recovery. As a remarkable feature, this very recovery, by creating a demand for a currency medium, permitted the Soviets to use the printing presses to acquire resources through a vast inflation of the money supply. The NEP allowed the economy a breathing space before the introduction of the Stalinist 5-year Plans, with their forced drive toward collectivization and industrialization.

ANALYTICAL ISSUES

Among the many issues of interest to economists are: (1) Is there a critical mass, a level of disaster beyond which recovery is impossible? (2)

Which are more vulnerable to disasters, primitive or modern societies? (3) Are there significantly different implications if the primary impact is upon population and labor supply (e.g., plagues, famines) or upon material property (fires, wartime bombing)? (4) To the extent that disasters elicit unusual altruism or community spirit, is there an economic explanation? (5) What government policies promote or hinder recovery?

It will not be possible to systematically address these issues, but a brief survey of economic forces favorable and unfavorable to recovery may be useful.

Looking first at the demand side, in the disaster-struck community there is an inevitable shift of concerns away from less essential wants ("luxuries"), thus freeing resources for urgent rescue, repair, and rehabilitation. On the supply side, resource imports -- gifts, insurance proceeds, commercial loans and the like -- will flow into damaged areas from outside support zones. More important, especially in the long run, is reserve productive capacity. Labor can work more hours, children can be taken from school, and the elderly from retirement. Machines and structures can be worked multiple shifts. Substitution, e.g., tents in place of houses, or trucks for buses and trains, enlarges the surviving resource base of essentials. Finally, since an impoverished community can scarcely afford the socially parasitical activities tolerated in normal times, crime and rent-seeking can be placed under stricter rein. Looters can be hanged, and lawyers can at least carry bricks.

On the other hand, there are points of danger. Modern technology relies on networks: electric power, water and gas, transportation, and communication/information. These ordinarily have considerable resiliency.

But, as evidenced by the power blackout of 1965 in the U.S. Northeast, beyond a certain level of damage there may be system failures which, if not promptly repairable, could lead to a downward spiral of production.

For the middle-scale community-wide disasters, the main problems have been technological and distributive in nature: e.g., localized resource scarcities, the provision of fair compensation. But in large-scale society-wide calamities, the survival of the social order itself is in question. Widespread famines, pandemics, destructive social revolutions, disastrous wars, and even severe business depressions and monetary hyperinflations -- all of these threaten the network of arrangements supporting the elaborate division of labor essential to the high productivity of modern economies.

Historically, the most immediately vulnerable aspect of this division of labor has been the food-manufactures exchange between rural and urban areas. Correspondingly, the most visible symptom of breakdown is a movement of population from the cities back to the countryside, as illustrated in ancient times by the emptying of cities in the declining Roman Empire. In modern times, during the Russian Civil War the population of Moscow and Petrograd fell by over 50% between 1917 and 1920. And, similarly though not to nearly so great a degree, the German and Japanese urban populations both declined substantially toward the end of and in the aftermath of World War II. And even in the United States, the depression of 1929-35 saw a pause, and even to some extent a reversal, of the long-run trend toward urbanization of the population.

Under Russian war communism, this breakdown of monetary exchange was due to an ideologically driven attempt to smash the system of private incentives that had previously served to feed the cities. For Japan and

Germany a somewhat different "repressed inflation" process was at work (as had often occurred earlier, for example during the French Revolution and in the southern Confederacy during the American Civil War). The process begins with military or economic stresses -- such as territorial losses, transportation interdictions, or inflationary war finance measures -- that inevitably raise food prices. The crucial false step is the introduction of food price ceilings (e.g., the Maximum in revolutionary France), possibly with the aim of "fair shares" or simply to hold down urban unrest. But the consequence is that farmers reduce their food deliveries to the cities. Unofficial mechanisms of distribution then emerge: black markets, barter, and trekking (day trips of city-dwellers to the countryside), all involving losses due to higher transaction costs. As the cities begin to lose population, industrial production declines. The government may then attempt to confiscate the crops by military force, threatening a general breakdown of food production. At this point if not earlier, governments have historically given way, for example when the Bolshevik government was forced to introduce the N.E.P. In postwar Germany and Japan, fortunately, the downward spiral had not progressed nearly so far before the Erhard and Dodge reforms restored the functioning of the price system.

POLICY ISSUES -- THE ROLE OF GOVERNMENT

Coping with disaster has long been regarded as a proper function of government. For the middle-scale or community-wide disasters, the policy question is mainly the extent to which government should engage in preparations and recovery activities that might conceivably hamper or displace private efforts. Evidently, grants or subsidized loans to

residents of officially designated "disaster areas" subvert the motive to adopt private self-protection measures. As another example, government below-cost flood insurance tends to induce excessive construction in flood-vulnerable areas. And similarly, some forms of government relief may hamper the recovery of normal business -- for example, free food distribution may slow the restoration of regular marketing channels. But on the other hand, it is perhaps debatable whether the price system in normal times provides proper incentive for disaster preparations, or even if it does, whether some paternalistic safety net is warranted even for those who were in a position to act but failed to do so. One interesting development is that, despite these considerations, a private "disaster protection industry" has actually begun to emerge.

When it comes to the large-scale or society-wide disasters, however, private parties can scarcely protect themselves at all, except possibly by emigration. Such disasters are often mainly the result of destructive state activities to begin with, e.g., wars or escalating inflations. In any case, recovery will hinge upon the ability of government to maintain or restore property rights together with a market system that will support the economic division of labor.

Finally, the subject of disaster and recovery can be regarded as a special case of the general problem of economic development. Most evident currently, the doctrines of socialism, or at any rate the practices of socialist governments, have subjected the nations of eastern Europe to a series of economic disasters from which they are now struggling to recover.

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