Disasters and their short- and long-term impacts upon economies and societies have been studied extensively. As globalization spreads, this movement affects global and local economies, implying changes in disaster impacts. This paper looks at the impacts of disasters in urban areas in light of globalization. While not all agree that globalization benefits developing countries, this movement allows certain assumptions to be made based on the performance of industrialized economies and linkages that impact developing countries. Furthermore, it appears that the effect of disaster situations on the macroeconomy is negligible; therefore, disaster management activities should focus on communities and their resilience.

Urban Area and Urban Hazards

Urban Area. A city or urban area is a set of infrastructure, other structures, and buildings that create an environment to serve a population living within a relatively small and confined geographic area. The lives and livelihoods of the population are supported by interrelated systems around which the urban area and society function. Capital stock makes up much of the infrastructure that includes business fixed-capital machinery and equipment, structural capital (plant, infrastructure, overheads, offices, and social-physical capital), and residential capital (dwellings). A disaster can directly affect people and capital stock and, as a consequence, the systemic functioning of both.

Urban Hazard. An urban hazard is a risk that threatens a city, its population, and related socioeconomic activities. If a risk threatens a capital or large city, the risk may resonate beyond the area of impact. In the discussion that follows, the focus is mostly on major disaster impacts, since smaller ones are less destructive and more easily absorbed, though much of the discussion is also applicable for smaller disasters. First, a disaster impact is generally defined as major if estimated direct losses approach or exceed the average GDP growth rate of an affected country and/or the damage seriously affects economic activity, even if direct losses from the event are not a significant portion of GDP.

Second, the overwhelming majority of disasters, whether large or small, are geographically and/or economically localized, and a disaster impact is unlikely to have negative consequences for the economy as a whole. Third, unless indicated, this paper takes into consideration only sudden types of urban natural (earthquakes, floods, hurricanes, etc.) and technological (engineering, chemical, biological, etc.) disasters, with the latter traced mainly to institutional failure. Many sudden types of technological disasters are confined to small areas, but they often have larger consequences for the surrounding population and areas not directly affected. The direct effects of these disasters can generally be treated similarly to those resulting from natural disasters, but the responses tend to be different, since the institutional and internal political processes also affect the response.

Furthermore, it has been shown that urban natural disasters, and by extension technological ones, normally have low direct impacts on secondary (industrial) and tertiary (services) sectors. Residential capital tends to bear the brunt of damage and destruction. Social capital, associated with education and health services, does not normally suffer high negative impacts. Damage to service sources and networks is not normally high; therefore, it is short-lived. Social overhead, including infrastructure, is frequently damaged, though transport infrastructure is the most affected, followed by water supply and sewage systems. Within communities, those most frequently killed
and injured are the urban poor, who often lose their homes, many of which are constructed with low-quality materials on unstable and disaster-prone land. When accounted for as a percentage of GDP, such losses can be minimal, though the losses are devastating for many families. Rebuilding these areas may not be excessively costly on a per capita basis, but commitment to helping this vulnerable section of the population requires political will. This same population may also suffer when daily wage jobs are lost during a disaster. Ironically, particularly in urban areas, job creation often occurs following a disaster, as emergency and reconstruction activities bring employment, especially in the construction sector.

Considering the above and including substitutions, market reactions, and other endogenous and exogenous responses, the net effect of a disaster situation (considering both impact and responses) normally appears to have no negative macroeconomic effects. Expected negative effects on GDP and investment, employment and inflation, the trade deficit and foreign reserves, are largely absent and in the short term there is often an economic upturn of some two years due to the reconstruction and business opportunities brought by a disaster. The public deficit may rise as the government finances rehabilitation and reconstruction activities, but this rarely results in a long-term problem. Hence, one conclusion is that disasters may be “a problem of development, but not necessarily a problem for development” (Albala-Bertrand 1993a). The question then is whether globalization affects this pattern.

Globalization and the Business Cycle

Globalization involves a wider and deeper merging and interdependence of domestic economies into a worldwide arena of competitive multimarkets and exchanges. It encompasses the flows of goods (trade), capital (finance and direct), information (transparency and access), labor (including human capital), and culture (institutional patterns and dynamics). The expectations of the advocates of globalization are that as more countries, and agents within countries, join this movement, obstacles to access will be reduced, and transportation and information costs will decrease. Participants will have a wider and more penetrating reach in the worldwide arena, and globalization will benefit all.

Opponents, on the other hand, do not doubt that more integration might be economically beneficial, but they have doubts about globalization’s pacing, sequencing, and policies. Their concerns arise from worries that quick, unregulated, and socially unaccommodating transitions to advanced stages of globalization can have, and have had, deleterious consequences for the economies of developing countries and the general population, particularly the most vulnerable people. Thus, issues about institutional pre-conditions associated with the protection, pace, and sequencing of reforms to prevent increases in poverty, larger inequalities, and socioeconomic instability cannot be ignored (Stiglitz 2002; Nayyar 2002; Mansoob 2002; World Bank 2001).

The business cycle is a sequence of sustained upturns and downturns in GDP and employment associated with economic shocks and/or agents’ decisions that affect aggregate demand that in turn is mediated by a collection of not-well-understood societal factors and expectations of an economic and political nature. Until recently, the seeming absence of a synchronic cycle in OECD countries smoothed and softened the international business cycle, though recently the domestic cycles of OECD countries have become more synchronic and dependent upon phases in the U.S. economy. Business cycles of open developing economies have always been synchronic with that of the main OECD trading partner, but the possibility of diversifying trading partners has existed over time and this has reduced vulnerability to single-partner economic cycles. Globalization could provide similar stability through the diversification of exports and market transparency. It seems, however, that such diversification could become less successful as the cycle becomes more synchronic due to globalization and hence more countries are economically linked; then a major urban disaster in a developing country might have greater domestic impacts than had previously been experienced. The next section looks at this hypothesis within a disaster situation framework.

Disaster Situation in Urban Areas

A disaster situation is an analytical framework in which disasters are composed of three interdependent processes of one and the same phenomenon: a disaster impact, a
disaster response, and a societal interference wrought by the former two. Thus, globalization and business cycle synchronization may affect any of these phases. Their potential effects can be analyzed by focusing on each of them in turn. A society is a living organism, which by its very nature responds endogenously when disaster strikes. Human and societal responses, associated with in-built institutions, will then occur following a disaster (see Albala-Bertrand 1993a).

**Disaster Impact and Effects**

A *disaster impact* is normally the result of a physically or socially uncompensated tension that leads to fatalities, damage, destruction, and the disarticulation of societal frameworks. In the case of natural disasters, the uncompensated tension is due to the physical weakness of structures and societal processes that fail to take into account and plan for extreme natural events. As such, even if the natural event were fully exogenous to society, which might not be the case, physical resistance to the geophysical phenomenon would not be. Resistance depends upon disaster-proof technology and sociopolitical access to it, a mostly endogenous process to society at large. It is similar for technological disasters, but here the inducing phenomenon is also fully endogenous, in-built in social structure and location and management of industrial facilities. Technological failures are associated with institutional failure to ensure the safe production, containment, and use of risky technology. This brings to the forefront the issue of vulnerability.

Generally, vulnerability is the exposure of physical and societal frameworks to violent events. Exposure is in turn associated with the risk of item or framework failure. Societal vulnerability can then be defined more specifically as the exposure of institutions and organized people to violent and extreme events. The main factors influencing vulnerability to natural and technological hazards are unsafe living quarters (building quality and location) and unsafe economic activities (engineering quality and location of structures and risky processes). In turn, the main societal factors that may increase the likelihood and destructiveness of disasters are entitlement erosion (economic and political possessions, access, and rights) and environmental degradation (pollution and overcrowding).

The lack of political influence and economic alternatives, poverty, and overall disenfranchisement may be at the root of vulnerability, urban or rural. Increased vulnerability and disaster risk can often be attributed to the wholesale policy rearrangements demanded and imposed by a globalization process indifferent to societies. This indifference is manifested in policy inconsistencies in which institutional rearrangements are imposed with a pace and depth that are faster and more far-reaching than the ability of people, especially the vulnerable, and activities to adapt and re-accommodate with a minimum of stability. This often places people and their livelihoods in a precarious condition and safety vacuum.

**Disaster Impact Effects.** For all kinds of disasters, once a disaster impact has occurred, two main types of effects ensue: direct or stock effects and indirect or flow effects. Direct effects impact human populations (injury and deaths) and physical and animal stocks (damage and destruction). In turn, indirect effects derive from the former, affecting the interrelation between physical structures and between people. These two types of effects cause losses to society's stocks and flows. For socially made disasters such as complex emergencies and technological hazards, however, there is a third type of effect. This is an institutional effect where institutional failure builds up vulnerability until a triggering event unleashes a devastating breakdown.

Indirect effects can be broken down into four frameworks: household conditions (homelessness, shortages, displacement, livelihood erosion); the states of health and nutrition of the population (environmental degradation, hygiene problems, disease increase, food scarcity); the economic circuit (effects on intermediate markets, final markets, policy, and expectations); and public activities (overburden, discontinuities, fragmentation, politicization). These frameworks are not fully independent of each other, but the former two relate more directly to the human condition, including basic needs and welfare, while the latter two relate indirectly to people, but directly to the social system as a whole. With some qualification, these general effects are common to all types of disasters.

Regarding indirect impacts, disasters appear to be more remarkable for the effects they do not have than for...
those they do. Especially in urban areas, there is little evidence that a disaster's negative impacts are long-lasting even if the direct effects dramatically affect some vulnerable social strata. Still, only an effective emergency response may guarantee that the disruptions to society and the negative impacts and their potential effects are not only short-lived but the emergency itself is not wasteful (see Albala-Bertrand 1993a; 1993b; 2000a).

How could globalization affect the above potential effects in urban areas? First, urban disasters do not strongly impact exports, since export activities in most developing countries are overwhelmingly associated with primary activities such as agriculture, mining, and fishing. An urban disaster cannot affect these exports directly, and there is little reason to assume that indirect effects on this sector would be significant except in the very short term. The weakness or lack of manufacturing exports in most developing countries is not due to backwardness or general deindustrialization in favor of the service sector, but to clear-cut globalization policies that lead to this result, at least for the foreseeable future (Weiss 2002; Albala-Bertrand 1999; Chang 1996). Therefore, if globalization maintains the same trends, we should expect countries that join globalization to become even more primary-sector dependent than they are now. In terms of this increase in dependency, the issue is whether globalization can create conditions to reduce some of a disaster's direct and indirect effects through the reduction of losses to private and public buildings, dwellings, structures, and machinery and equipment.

The main mechanisms to reduce the physical vulnerability of a built-up environment are regulations, building codes, land use restrictions, and the siting of risky technology. Assuming that the knowledge of these aspects is sound, their effectiveness will depend upon legislation and transparency. Globalization, via dissemination of information about best practices, may contribute positively to a better understanding and drafting of disaster-related legislation. Globalization also assumes an increasingly more open society and greater transparency, which may favor the observance and application of legislation to reduce unchecked corruption. Adoption and implementation of new legislation, however, depend more on a society than on globalization.

There is another, safer area where globalization may play a positive role in reducing potential impact effects. One of the main planks of globalization is the support and development of domestic financial markets to receive foreign investment and tap international funds. Setting aside the issue of domestic regulation of foreign financial flows, a more developed financial market would include mechanisms to spread and reduce risk and vulnerability. If so, the impact of a natural or technological disaster could be reduced or even eliminated through improved loan access and insurance coverage. These mechanisms may help larger businesses and wealthier individuals, though not everyone has the means to borrow following a disaster. Insurance and reinsurance industries, however, are likely to develop significantly due to globalization and risk can be spread more evenly. Even more important, wider availability of insurance would act as a check on construction activities, location, and technology use, as these are generally preconditions for insurance coverage. Corruption in the use of land, materials, and the design of structures might also be reduced. The same would also be true for riskier technologies, where discipline and monitoring could be increased. Globalization therefore might bring a wealth of mechanisms to increase prevention and distribute risk.

But these positive developments are hindered by the ability of all people to afford insurance. Currently, the majority of vulnerable people are excluded from the insurance market. Much of this exclusion is created by the transition costs of globalization, which may not be prepared to protect the real-time losers at any one time. In addition, even if no one were excluded, the experience with natural disaster insurance shows that people and small firms rarely take it up, except after major disasters. People do not normally reflect on the possibility of large losses coming from very unlikely events (Kunreuther 1997; Giarini 1984).

Synchronization of the business cycle may cause some unintended negative effects by reinforcing insurance weaknesses in recessions and ignoring them in upturns. During recessions, access to insurance may be easy, but the capacity to pay policy premiums is reduced. In market booms, the insurance industry may downgrade de facto their standards so as to make inroads in a tight market. Therefore, globalization notwithstanding, the potentially good results in this story would all depend on state backing, tight regulations, and penalty
enforcement. In other words, the freer and wealthier the market, the stronger and more all-embracing should be the probity of the state and its regulation of economic activity.

**Disaster Response and Mechanisms**

Disaster Response. Disaster response can be defined as a wide array of endogenous and exogenous reactions, measures, and policies that mitigate, counteract, and prevent disaster impacts and effects. Response to a disaster can be described as follows: once a disaster has occurred, the impacts stimulate the unfolding of systemic response mechanisms and the creation of specially designed response measures. These two sets of responses aim temporarily to counteract functioning flow losses through emergency relief and rehabilitation activities and permanently compensate stock losses and institutional insufficiencies through reconstruction activities. The impact effects and derived compensatory responses also stimulate an anticipatory response aimed at the prevention and mitigation of future potential disasters (Albala-Bertrand 1993a). These responses generate three main areas of attention, which make up the response side of a disaster situation: (i) response mechanisms; (ii) compensatory response; and (iii) anticipatory response. In addition, as a disaster situation always generates varying degrees of societal interference, we should also focus on response-induced interfering effects.

Response Mechanisms. As introduced earlier, response mechanisms refer to endogenous and exogenous response processes. Endogenous response mechanisms are those channeled through society’s in-built institutional processes. These processes represent a series of formal and informal feedback mechanisms that are part of the existing self-regulatory social machinery (e.g., the family, informal finance, the informal sector, formal markets, political and administrative frameworks, cultural norms and customs, psychological attitudes and habits). These involve a wide array of activities that range from highly automatic to nonautomatic in-built responses. For example, extended family solidarity represents a highly automatic endogenous reaction, while the use of the hazard reserve item of the public budget is a planned and calculated response. Likewise, market reactions and emergent coalitions appear to lie somewhere in between. Exogenous mechanisms, in turn, are those channeled via ad hoc, unpatterned, unguaranteed, and irregular processes. They are expressed through actions, measures, and policies that formally fill gaps left by in-built responses, by-pass endogenous channels, shift initiatives away from regular actors, and superimpose alternative structures. This normally implies private and public interventions that go beyond in-built actions and international assistance and aid that goes beyond existing guarantees. In the long run, however, these two response types might not necessarily be independent. This is because the endogenization of societally useful exogenous initiatives, actions, and behaviors, via education, policy, and social interaction, is the normal way in which society strengthens and develops (see Albala-Bertrand 1993a; Cuny 1983; Davis 1981; Quarantelli, 1978; White 1974; Barton 1970; Dynes 1970; Sorokin 1942; Prince 1920).

Compensatory and Anticipatory Responses. In sudden natural disasters and technological failures, reversing the negative impacts is possible once the emergency response has contained the spread and worsening of indirect effects. These responses normally require a significant amount of public involvement and public finance, and in developing countries, foreign aid and credits are also required (Kunreuther 1997; Albala-Bertrand 1993a). These responses and the inflow of funds, materials, and finances interfere with normal activities that compete for the same resources. In addition, given the societal endogeneity of technological failure, intense critique and reassessment of the control and handling of risky technology, which also prompts an institutional reaction, will also arise. Anticipatory actions in turn may also have strong societal implications as they aim to modify behavior and institutions either to prevent disasters or to respond efficiently when prevention fails. Prevention also includes formal insurance, mortgage, and taxation systems that encourage less risky behavior and a better distribution of risk to reduce negative disaster impacts (Kunreuther 1997; Albala-Bertrand 1993a; Giarini 1984; Cochrane 1975; Dacy and Kunreuther 1969). These actions also include the monitoring of markets, migration, and reactions to maximize response effectiveness and minimize antisocial and speculative behavior.
How can globalization affect the above response mechanisms and their effectiveness? Community, defined as a stable array of institutions that set useful societal interaction and hierarchies within and between particular identity groups, like family, neighborhood, workplace, and formal and informal working relationships, might be the first casualty of fast and unfettered globalization (Stiglitz 2002). There is growing evidence that quick trade liberalization makes small and struggling urban firms uncompetitive and unviable. These would affect formal firms and their workers as well as the informal economic activity that depends on these firms, which may represent the overwhelming majority of urban economic activity in many developing countries (Thomas 1990). In addition, the current globalization push for privatization, deregulation of labor markets, and the general restructuring of firms seeking efficiency and productivity improvements, without heeding the ensuing social costs, will make matters even worse for a precarious social fabric. If there are neither alternative livelihoods nor public protection for potentially affected people and the transition to higher employment and stability is slow, the informal and formal endogenous mechanisms might be badly impaired at the time of a disaster impact.

In addition, the other plank of globalization, the liberalization of capital, is now known to create negative economic shocks and instability associated with unregulated capital flows. If this also comes to the fore, then any respite from poverty will be short-lived. There will also be little in the way of reestablishing the stability and strength of endogenous response mechanisms, let alone of improving them. Therefore, globalization as it has been conducted to date may significantly weaken endogenous response mechanisms at the time of disaster, thus demanding a stronger exogenous response from domestic and foreign sources when disaster strikes.

For example, if a country is facing economic difficulties due to the requirements imposed upon its economy and society by the globalization process, then it is unlikely that the domestic economy and budget would have enough laxity to respond appropriately to a hazard. In an ideal world, we would then expect that foreign aid would flow from institutions in support of globalization. This will not happen, however, unless there is a concerted international effort to improve the soundness and safety of globalization policies as an aim in itself, so that vulnerable people do not suffer as a result of globalization and a disaster.

On the other hand, if globalization makes the business cycle synchronic and there is a recession in the United States and other industrialized countries, then transitional economies would suffer in three ways. First, the recession would reinforce the negative situation described earlier. Second, as export demand, commodity prices, and capital flows fall off, there would be fewer domestic financial resources and already-depressed communities would be further harmed, weakening endogenous response mechanisms. And third, with a worldwide recession, the availability and willingness of countries to give foreign aid might be reduced. (Although if the world economy were in an upturn, international donors might be more generous, but developing countries might also be in better financial positions.) Reconstruction requirements, however, might put a strain on other activities, exportable or not, which might affect the economy indirectly.

A country in recession might have more idle capital resources to serve rehabilitation and reconstruction. Such activities might create a domestic demand stimulus, not limited to domestic activities related to disaster response, and positively affect the whole economy. This possibility is not always the case, however, since most capital is not fungible and cannot be switched to other types of production in the short run or even the medium term. Second, if the economy were significantly open, then most output would be geared for exports. The export sector and its backward and forward linkages would then be operating with significant idle capacity. Domestic demand might normally be satisfied with only a small fraction of these exportable goods, but then the level of domestic demand would also be affected. This would make disaster-induced expenditure less effective as a mechanism to compensate the economy than it would otherwise have been.

Most disaster legislation and arrangements follow major disasters. Fast globalization, of the current type may make the social fabric more unstable and fluid than it would otherwise have been. Fluidity may offer the opportunity and impetus to restructure institutions. Under what type of social contract would these rearrangements
be incorporated? This would depend most importantly on the type of society in question, followed by the disaster response. Instability and its results might make it more difficult to set up an organized type of institutional rearrangement, so authoritarian rule might come to the fore; this form of governance does not normally favor the most vulnerable people, hence the overall welfare may be worsened for a considerable period of time.

Visible Response Type and Origin. Notice first that a good deal of the endogenous response is not visible or amenable to quantification, which may normally underestimate the energy and effort made by society itself in the wake of a disaster (Albala-Bertrand, 1993a). The visible response usually comes in the form of finance, materials, technical expertise, labor, and organizations to manage such resources. The main response sources are domestic and foreign. The former can be subdivided into local and national, and the latter into bilateral, multilateral, private financial institutions, NGOs, and remittances. Commonly, the majority of resources are domestic in origin. However, significant expertise and financial resources from international sources are sometimes pivotal in disciplining the general response.

When disaster strikes, the stage of globalization and phase of the business cycle can affect funding sources and mechanisms in various ways. First, a cycle-synchronic recession might significantly affect local and domestic resources. This would also affect informal financial markets, which might become less flexible and effective in the wake of fast globalization, impairing recovery. Second, remittances from abroad would be strongly affected. As this is usually a very important type of informal financial response at the family level, recovery of household and individual livelihood conditions would likely be further impaired. Third, both bilateral and multilateral sources might become strongly procyclical, significantly reducing their role in recessions. Fourth, NGOs depend on donations from a variety of people and organizations. Donations might dry up with a synchronic recession. Finally, international private funding sources might be undergoing excess liquidity, which could contribute to easy, but risky, lending. The latter could be a short-term blessing but a long-term disaster if additional debt were taken on. On the other hand, during upturns, the concerns mentioned might be insignificant, but dependence upon foreign aid would also be less necessary than in downturns.

Conclusions

In the context of a disaster situation, as described above, the following conclusions can be reached:

- Urban disasters affecting large cities and megacities may impose large residential and infrastructure losses, as well as large death tolls and injuries.
- Losses of capital and activities, deaths, and injuries are unlikely to affect the macroeconomy negatively.
- It is unlikely that this pattern would significantly change by virtue of the negative features of globalization, but this does not mean that the people and activities affected by urban disasters would not be victimized.
- The negative features of globalization might make a significant difference for increased victimization, as the endogenous mechanisms of response are likely to be badly impaired.
- Given that globalization appears to make the cycle synchronic and dependent on the U.S. economy, financing disaster response might become procyclical, more adversely affecting a disaster-struck country in the event of a recession.
- Globalization could provide new opportunities for diversifying risk and improving prevention, but the useful incorporation of these opportunities into the economy and polity would depend more on the type of domestic society than on globalization itself. Furthermore, given that the macroeconomy might not suffer as a result of an urban disaster, communities and activities directly affected should be the main target of response policies. International response organizations can also participate, as they often attempt, in the endogenization of initiatives dealing with preventive and compensatory mechanisms at grassroots and national levels. These initiatives might bring strong political opposition from entrenched political elites who may perceive them as interference, but this should not be a reason to drop them. In addition, organizations that make up part of the globalization movement should take into consideration the social and economic problems that arise as a result of their policies, so that they
can design safer and more stable approaches to globalization in general and to hazards in particular.

**Notes**

1. For an analytical explanation of this situation illustrated by Latin American countries see Albala-Bertrand 1993b.

**Bibliography**


