

CHAPTER 9

Globalization and Localization: An Economic Approach

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The aim of this chapter is to assess, from an economic perspective, ways in which actual globalization is likely to affect disaster vulnerability. We approach the issue by putting forward an economic concept of disaster localization. It is first shown that a localized disaster is unlikely to affect the macroeconomy in any significant way. In addition, development tends to make all disasters localized as an incidental consequence of its endogenous and exogenous processes. The people and activities directly affected by a disaster may still undergo severe difficulties, but these are likely to be less intense and more rapidly counteracted in countries with higher levels of integration, diversification, and general development. That is, as economic resilience and economic disaster confinement increase, disaster vulnerability is bound to decrease. However, the effect of current globalization on vulnerability seems to be double edged. On the one hand, globalization is likely to speed up the downgrading of vulnerability at the national level by helping to upgrade localization. On the other, however, at least in the short and medium terms, globalization may increase vulnerability at the local level by disenfranchising communities and individuals as well as adding new sources of economic instability. Does globalization help the process of disaster localization? Is current globalization beneficial for the people and activities that can be directly affected by a potential disaster? In other words, we look at the ways in which the main economic features of actual globalization might affect disaster vulnerability, at national and local levels.¹

GLOBALIZATION, THE BUSINESS CYCLE, AND VULNERABILITY

Globalization, the business cycle, and vulnerability are three interacting processes of economic life, which we use as a basic framework for an analysis of economic localization and resilience.

¹ Given restriction of space, there is no attempt at detailing some propositions and statements, but to refer them to reliable sources where they have been treated appropriately. The thesis proposed in the present chapter is novel and derives from my own approach and work, as referred to here.

As in themselves they are not the focus of our analysis, it is necessary to define them consistently so as to set up their boundaries to help our ensuing analysis.

Globalization

Globalization is a societal process that widens and deepens the interactions between each country and the rest of the world. In general, these interconnections refer to the institutions associated with the flows of goods, services, people, information, and cultural traits in a worldwide context. In particular, economic globalization refers to the institutions associated with the flows of traded goods and services, financial and direct capital, migrant labor and tourism, and economic information and ideas, within a global arena of cultural institutions and traits. All this will tend to make global administrative and communication structures more flexible and expedited, while transport and means of exchanging and distributing information become cheaper. The most forceful advocates of economic globalization, normally associated with the so-called “Washington Consensus,” claim that as more countries join their preferred and currently dominant policy package, economic and social benefits for everybody will come over time. The detractors normally agree that higher levels of global integration could be economically and socially beneficial, but have serious doubts about the type of economic policies that are currently pursued for this purpose. The main reason for their misgivings is that a rapid, unregulated, and socially unaccommodating transition to higher stages of globalization has often produced deleterious consequences for the economy in general and for the most vulnerable people in particular. The transition length toward the supposedly equitable benefits of a higher stage of globalization remains so far undefined (for a good collection on the issues above, see *Oxford Review of Economic Policy* 2004, Vol. 20, No. 1).

In short, the “Washington Consensus” represents a package of neoliberal policies agreed to mainly by U.S. officials, the International Monetary Fund (IMF), and the World Bank in the mid-1980s, in connection with the required stabilization and structural adjustment of the countries affected by the 1980s debt crisis (Stiglitz, 1998). This later became the policy package behind the dominant model of current globalization. Its main components are free foreign trade, specialization via static comparative advantages, liberalization of capital flows, the “flexibilization” of the labor market, balanced budgets and privatization, a minimal and subsidiary role for the state, and the deregulation of most if not all price signals (Fischer, 2003; Williamson, 1990). The main alternative, and seemingly more successful, model of globalization is the Asian Model, which is the one followed by Taiwan and South Korea, based on the economic experience of Japan after World War II. Here the state has an important role to play, as free markets are not considered as self-adjusting toward the best socioeconomic outcome, as regards industrial policy, employment, growth rates, technological sophistication, income distribution, and poverty. These Asian countries demonstrate the greatest success in all these areas among most countries, let alone developing countries (Chang, 1996; Chang & Grabel, 2004).

In a social vacuum, we can theoretically describe economic globalization as a continuum from autarky (a fully closed economy) to a fully liberal (fully free-market) world, just as if the world were to become a single unrestricted economy. In practice, however, the fully liberal ideal appears as economically farfetched and socially undesirable even within a country (Ibid.). In addition, there are increasing problems associated with the deepening and enhancing

of economic globalization via the currently dominant policies, which have been widely studied in the real world. First, there appears to be normally a short- to medium-term increase of vulnerability, especially of the poorest sections of society, increasing poverty, and inequality. The latter appears unchecked even in countries that the “Washington Consensus” would consider as prime example of success, such as Chile, which has the ninth worst income distribution in the world (Human Development Report, 2004; Pizarro, 1996). Second, a good deal of economic instability and economic destruction has also been associated with unregulated financial flows (Weisbrot & Baker, 2001; Weller, 2001). Third, this has also carried serious political instability and social victimization, such as in Argentina 2001 (Damill, Frenkel, & Maurizio, 2003; Frenkel, 2003). Finally, there appears to be a clear asymmetry in the compliance with current globalization precepts between the developed and developing countries (Guadagni & Kaufmann, 2004). In fact, no serious economist would argue about the existence of such actual problems, but about their interpretation and solutions, and not least about their socially acceptable time-length persistence. This may have not unimportant consequences for the globalization project as a whole, but it also shows that current globalization, in its purist “Washington Consensus” guise, may have significantly become a political ideology (Stiglitz, 2002; Wade, 1996; Weiss, 2002).

The main visible aspect of current globalization is the strength and speed of capital flows and secondarily the integration of domestic production into the world market. Restrictions on labor mobility, however, appear as an uneasy countertrend. Free-trade integration has already created serious transition cost associated with the fast, uncoordinated, and inequitable domestic structural change that seems required to fit into the global economy (Rudra, 2002). Free unregulated capital flows, in turn, have rendered economies even more unstable and less policy independent than before (Eichengreen, 2001; Grabel, 2002). Therefore, at least in the medium term, these processes are likely to render significant numbers of people more differentially at risk and hence more vulnerable than before. There are, however, proposals for other ways of inserting into the global economy, which do not require enduring the worse social and economic costs of this enterprise (Chang & Grabel, 2004; Mansoob, 2002; Nayyar, 2002; Stiglitz, 2002; Wade, 1990; World Bank, 2001).

The Business Cycle

Another point to consider is that globalization policies and effects occur in interaction with the business cycle, which means that some negative aspects of disaster vulnerability may be amplified in recessions. The business cycle is a sequence of sustained upturns and downturns of gross domestic product (GDP) and employment, associated with economic shocks and/or agents’ decisions, affecting aggregate demand (investment, consumption, trade, public expenditure), which are in turn mediated by a collection of societal factors and expectations of economic and political nature. The mediating aspects are not well understood and, therefore, policy attempts at preventing, rather than correcting, the cycle may not normally be forthcoming or successful (Bergstrom, 1995). Up until recently, the seeming absence of a synchronic cycle in the developed countries grouped in the Organization for Economic Cooperation and Development (OECD) contributed to smoothen and soften the world cycle. That is, when Japan was in a downturn phase, the United States and Germany (or the EU) would be in an upturn phase, and vice versa. Lately, it seems that the domestic cycles of OECD countries have become both more synchronic and more dependent on the phase of the U.S. economy than before, China

being both a dependent and modifying factor of the U.S. cycle. However, the business cycle of open developing economies, especially small ones, has always been very much synchronic with that of the main OECD trading partner. But there has also been the possibility of diversifying trading partners over time, so as to reduce their vulnerability to single-partner economic cycles. This is something that globalization could foster, but such a diversifying strategy may be tampered with in the presence of a business cycle that appears to be more synchronic with the U.S. world locomotive than before. Globalization itself seems to be behind this hegemonic tendency. If the cycle becomes more synchronic and more people are rendered increasingly vulnerable by virtue of the current dominant type of globalization, then the timing of a major disaster in the developing world may have more serious consequences than currently, as is shown later.

Vulnerability

A disaster impact is normally the result of a physically or societally uncompensated tension, which translates into death, 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 compensate for extreme natural events, such as earthquakes, hurricanes, floods, and the like. As such, even if the natural event were fully exogenous to society, the physical resistance to geophysical phenomena would not be. It depends on both disaster-proof technology and sociopolitical access to it, which is mostly an endogenous societal process. This is also true in the case of technological disasters, but here the inducing phenomenon is also fully endogenous, associated with the institutional failure to put a check on the production, containment, and the use of risky technology. This is then a societal process fully in-built in construction regulations and technology handling as well as technology monitoring and disciplining, control systems and warning, and a range of compensatory actions. In turn, a socially/politically induced disaster impact, such as riots, civil wars, wars, and the like (i.e., “complex humanitarian emergencies”) is normally the result of a societal/institutional weakness that fails to accommodate competing identity groups. This is a fully endogenous phenomenon, in-built in social structure and dynamics (Albala-Bertrand, 2000a). In this chapter, however, we concentrate on natural hazards only, as the other disaster types have characteristics of their own, which are beyond the scope of this chapter. This takes us to the issue of vulnerability.

We generically define vulnerability as the exposure of both physical and societal frameworks to violent events. The latter refers to the exposure of institutions and organized people to violent or extreme events. The degree of exposure is in turn associated to the risk of failure (or dislocation) of an item (or framework) to a potential event of a given magnitude. This gives rise to two not independent types of vulnerability: physical and societal. Society’s physical arrangements are paramount in explaining disaster damage. But these are the result of societal processes that confine people and activities to a physically vulnerable built-up environment (and unsafe technology) or to societal processes that increasingly weaken the physical environment where people live and work, or both. These societal processes are the result of prevailing institutions, and in turn institutional arrangements are also paramount in explaining resilience and recovery from a disaster impact.

The main processes behind physical vulnerability to both 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, which may increase the proneness and destructiveness of disasters, are entitlement erosion (economic and political possessions, access, and rights) and environmental degradation (pollution, deforestation, overcrowding, and the like). These four factors are the result of society's processes of production and reproduction, which may differentially affect some individuals and groups as well as increase overall risk in unpredictable ways. Hence, whatever the potential unleashing event (geophysical, technological, or political), the proneness of the social/physical system and its increased vulnerability to such events are largely part and parcel of society's ongoing structure and dynamics. It is therefore society itself that, by creating and modifying institutions, may increase or reduce its proneness and vulnerability to geophysical and socially made events (see Albala-Bertrand, 1993, 2000a, 2000b).

Lack of political influence, lack of economic alternatives, poverty, and overall societal disenfranchising may be at the foundation of vulnerability. A good deal of increased vulnerability and disaster risk can be attributed to the wholesale policy rearrangements demanded and imposed by a socially unconcerned globalization. Notice also that rural disenfranchising, associated with multinational cash-crop agriculture, with its enclosures, evictions, and capital-intensive technology, pushes masses of impoverished people to unsafe locations and buildings in both rural and urban areas (ravines, shanty towns, overcrowded inner city), increasing their vulnerability. In addition, some cash crops, which may be efficient to produce hard currency, might not constitute food to live on, like peanuts. So when a world recession comes, some communities may find themselves with less food available than before, with both countryside and cities affected (Albala-Bertrand, 1993).

This is translated into a policy inconsistency, in which institutional rearrangements are imposed with a pace and extent that are significantly faster, deeper, and wider than the ability of the most vulnerable people and activities to adapt and accommodate within a minimum of stability. This often puts people and activities in both a precarious livelihood condition and a safety vacuum, which could be aggravated by a synchronic business cycle. That is, some features of unfettered globalization might largely explain safety negligence, entitlement erosion, and environmental degradation.

DISASTER LOCALIZATION

Overall economic vulnerability to disasters, from a macroeconomic viewpoint, can be traced back to a weak, undiversified, and unresponsive economy. If after a disaster, the economy of a country holds, then there would potentially be more domestic capacity to respond both endogenously and exogenously to it. In addition, a more responsive economy would require less foreign aid, while aid and loans would be more forthcoming. In which circumstances would an economy then be more likely to hold in the face of a natural hazard? Are these circumstances favored by globalization? These questions can be answered by using an appropriate concept of localization.

In most studies, the word localization is used often, and usually refers to the geographic extent of either the event or the disaster impact itself in a rather ubiquitous manner. Given that this type of extent does not appear to mean much in the absence of the type of economy that is within the affected area, we proposed a combined concept in another work (Ibid.). That is, a disaster is localized if it affects a confined geographic area and/or a confined area of economic activity. This implies that a geographically widespread disaster can be economically localized (e.g., a drought in a diversified country) or widespread (e.g., a drought in an agriculturally

TABLE 9.1. The Issue of Localization^a

		Economic Viewpoint	
		Localized	Widespread
G	L	(11)	(12)
E	O		
O	C	<i>Most disasters</i>	<i>Some disasters</i>
G	A		
R	L	e.g., <u>Malawi</u> and <u>Bangladesh</u>	i.e., Capital city or key industry
A	I	(both in later years)	(e.g., <u>Ecuador</u> 1987 earthquake)
P	Z		e.g., <u>Bangladesh</u> (in earlier years)
H	E		
I	D		
C	W	(21)	(22)
V	I		
I	D	<i>Diversified economy</i>	<i>Undiversified agricultural economy</i>
E	E		
W	S	e.g., drought in Uruguay or hurricane	e.g., <u>Malawi</u> (in earlier years) and
P	P	in <u>Ecuador</u>	Sahelian countries
O	R		
I	E	e.g., <u>Dominica</u> (in later years)	<i>Small islands (with diversification.</i>
N	A		
T	D		e.g., <u>Dominica</u> (earlier years) and Montserrat's volcano

^aThis classification refers only to direct disaster effects (stock effects). Notice also that some countries are underlined when they appear in two different cells at different times. This is to show how similar disasters are likely to become more localized over time, as countries both generally develop and specifically protect against hazards.

undiversified least developed country, like a Sahelian country). Hence, our early conclusion is that as most disasters are economically localized, they are unlikely to have serious macroeconomic effects, especially on GDP (Ibid.). This assertion can be presented and analyzed by means of a double entry table and some useful examples, especially from Benson and Clay (2004), so that the concept of localization can be unambiguously defined for later usage (see Table 9.1).

Our concept of localization corresponds to the first column of Table 9.1: cells (11) and (21), that is, economic localization. As a corollary, the second column shows that a disaster can be economically widespread, whether it is geographically widespread or not. Cell (11) shows the most common case, as it is likely that the majority of geographically localized disasters are also economically localized. As examples, we can focus on Bangladesh (especially floods and cyclones) and Malawi (droughts). Since the 1990s these countries underwent geographically localized disasters, which had severe impact in the affected areas, but did not translate into significant losses for the economy as a whole. The initial impacts were short lived and more than compensated within a year or so. Cell (12) shows that some geographically localized disasters can also be economically widespread if they strike a key industry (normally an exporting one, like oil, bananas, etc) or a main industrial/political city (normally the capital city). For example, in 1987, an earthquake in Ecuador damaged the main oil pipe for this export. This is, however, a rare event, as even when major earthquakes struck a capital city (e.g., Managua 1972, Guatemala City 1976, Mexico City 1985) they do not translate into widespread economic effects, so this is more possibility than necessity. Another example would be the cyclone and

floods in Bangladesh (then East Pakistan) contributing to the separatist momentum and civil war of independence in early 1970s. The disasters appear to have acted as triggers of a growing institutional conflict with West Pakistan (Albala-Bertrand, 1993). But the above disasters were geographically localized, which in normal times would unlikely create significant widespread effects on the macroeconomy, as was shown in the previous point.

Cell (21) shows that geographically widespread disasters can also be economically localized. This is the case when a geographically widespread disaster strikes a diversified economy, mainly affecting one economic sector, normally the agricultural sector (e.g., droughts in Latin America or even widespread hurricanes in diversified islands like Dominica since the 1980s). It would be unusual that this unleashes important macroeconomic effects, unless the affected sector was pivotal for the rest of the economy, which is unlikely in diversified open economies. Notice also that even when one sector or industry undergoes the brunt of damage from a sudden disaster, such as a flood or an earthquake, this would unlikely be fully impaired, as disaster impact effects are never homogeneous. Finally, cell (22) represents the case of geographically widespread disasters that also have an economically widespread impact. This normally refers to a geographically widespread disaster that strikes an undiversified agricultural economy (e.g., droughts in Sahelian countries) or a small semidiversified island (e.g., hurricanes in small Caribbean islands, such as St. Lucia and Dominica in the late 1970s—fishing, agriculture, and tourism might suffer considerably). It also includes rare events such as the Monserrat's volcano in 1995. The latter would have been widespread however economically diversified the country was at the time, as all sectors would have suffered total or partial impairment, which might be expected to cause structural change (Benson & Clay, 2004). In most cases of widespread disaster, however, the persistence of the macroeconomic effects would be confined to around 2 to 3 years after the disaster impact, except in slowly developing disaster such as droughts (Albala-Bertrand, 1993; Benson & Clay, 2004).

If we look again at the table above, we can see that some disaster-prone countries, which were located in cells (12) and (22) in early years, reappear in cell (11) or (21) in later years, that is, the countries undergo more localized disasters from similar natural events over time. For example, Malawi moves from (22) to (11), while Dominica does from (22) to (21), and Bangladesh from (12) to (21). This is an indication that for disaster-prone countries, as a rule, development can be conceived as a process that transforms all types of disaster into economically localized ones, that is, toward cells (11) and (21). This appears to have been the case of the three countries mentioned above (Benson & Clay, 2004). This is then also an indication that development and reduced macroeconomic vulnerability to disasters might go hand in hand. This process would be reinforced and sped up by disaster policies that explicitly seek such an outcome, but such policies are more likely to come up in the aftermath of large natural disasters than in normal times. In what follows, the term “disaster zone” is used for any stock affected by the initial impact, whether this is located within a given geographic area or not.

From this and other studies (Albala-Bertrand, 1993, 2004; Benson & Clay, 2004; Charveriat, 2000) it can be seen that indirect (flow) effects on the economy do not appear to be highly significant or long lasting, but they are bound to become even less important as localization increases and therefore vulnerability decreases. This does not mean that directly affected people and activities are necessarily less vulnerable to disaster. This would depend on general institutions and disaster-specific ones. But it does mean that as development progresses disasters may have less intense and less widespread impact effects than otherwise it would have been. It does also mean that the affected economy would have more scope and resources for a rapid recovery, even in the absence of concessional foreign support.

ISOLATION AND INSULATION

An isolated, autarkic, local economy cannot by definition have spreading effects toward the national economy. If it were affected by a disaster, however large its direct or stock effects, the indirect effects would be contained within its boundaries, which may make the total local effects more intense. Without outside aid and endogenous macro integrative reactions the recovery would likely be more trying, as it would have to be met with resources and reactions within the local economy alone. From the viewpoint of the macroeconomy, the disaster would be localized and nonintrusive. In contrast, if the local economy is integrated to the national economy via mutual demands and supplies of factors, goods, and finance, then the disaster can remain local only insofar as the indirect spreading effects can be contained within the disaster (economic or geographic) zone boundary. From a national standpoint, the disaster would be localized if the macroeconomy could insulate itself from the indirect effects that originate in the disaster zone. For this to happen, the national economy has to create compensations via in-built economic and community reactions, which in addition are likely to be reinforced by exogenous domestic and foreign responses. This would initially insulate the disaster, and later help recover the disaster zone itself. The basic containment of wider indirect effects would normally occur rapidly via relief and local physical rehabilitation, at the time when the macroeconomic organism was already taking care of itself.

We then expect that a more developed country will be more economically diversified and more internally and externally articulated. This will make both its interindustrial and income linkages more all embracing and dynamic, less dependent on given domestic sources, and not least its people will more likely be institutionally integrated to a more responsive center of allegiance or state. This means that a disaster might have the possibility of spreading via linkages to the wider economy, through indirect or flow effects, which would not happen from an autarkic location. But at the same time the interlinked system is likely to generate market endogenous reactions via buffer stocks, substitutions, and new supply/demand opportunities that would dampen down negative effects. In addition, other in-built or institutional mechanisms, plus the standard exogenous ones, would also respond in the same direction (Albala-Bertrand, 1993). That is why, in this conception, both indirect effects and long-term effects from localized disasters are likely to be unimportant for the macroeconomy. In autarky they would be irrelevant and in diversified societies they would be rapidly compensated and outweighed, even in the disaster zone itself. So the direct disaster stock loss, which is associated with residential, infrastructure, social, business, and inventory capital, plus current production and labor, might represent almost all of the total loss. In sudden, localized, disasters this is unlikely to have major effects on the macroeconomy even in the short term, especially after relief and rehabilitation are well under way, as shown below (Ibid.). Globalization via trade, financial development, and speedy communications is bound to support and foster the general requirements for localization, despite its current shortcomings.

A MACROECONOMIC ARGUMENT

In the above context, even if the capital stock lost to the disaster were not completely replaced, it would be unlikely that the economy be affected in the short and medium terms, let alone in the long term. This can be shown by means of a macroeconomic argument. Setting aside the normally large overestimation of disaster losses, the argument can be based on well-supported facts about both localized disasters and developing economies. Among them are the facts

that capital losses to disaster are both not homogeneous and normally lopsided toward the less productive capital, that most losses are to the capital stock rather than to income and that reconstruction investment is likely to be of better quality than that of the capital lost. In addition, it is well known that the growth of output does not depend on the contribution of the capital stock alone, but also on labor, technology, and other societal requirements. Likewise, it is accepted that new investment opportunities are normally taken up when their risk is low, especially when private investment is publicly supported and protected. And it is also accepted that public investment in infrastructure normally complements or “crowds in” private investment (Albala & Mamatzakis, 2004; Aschauer, 1988; Taylor, 1983). Further, developing countries exhibit large levels of unused or underused productive factors, in terms of idle capacity, underemployed labor, and other resources, which may be one of the reasons why inflation is either not significant or very short lived after disasters. Idle capacity is mostly due to narrow domestic markets and single primary exports, lack of domestic credits and savings, lack foreign exchange and expertise, and not least lack of information about investment opportunities and know-how (Thirlwall, 2003).

In the context of a disaster situation, which includes the impact, the response, and derived societal interference, an economy would normally generate endogenous reactions from within and from outside the disaster area. For example, market reactions that follow opportunities, either by filling profitable gaps left by the disaster losses or by complementing new (disaster) public investment, or both. There will also be economic counteractions via the use of buffer stocks, like savings and inventories plus fast imported inputs, to partly make up for the initial losses to both final and intermediate goods. Buffer stocks in a disaster aftermath will contribute to contain both negative multiplying effects on the economic machinery and the spreading effects from the disaster zone to the rest of the country (Albala-Bertrand, 1993). The more diversified and openly integrated the economy was, the more important would these reactions be. In other words, the disaster itself endogenously creates domestic and foreign economic incentives and reactions, which are reinforced via public, private, and foreign exogenous responses. New concessional foreign exchange could even relax a complementary foreign-exchange constraint if this was present before the disaster, as can be shown via a two-gap model (Taylor, 1994, 2004), increasing investment and hence growth. The stimuli from disaster-induced incentives may also unlock and create economic opportunities, inducing a reconstruction investment multiplier larger than the disaster loss multiplier, making the recovery less costly to undertake and more rapidly to succeed than it would otherwise have been. But the main argument about localization would actually hold even if there were no multiplying effect from the disaster response, when the multiplier was equal to unity.

A MODEL FOR A LOCALIZED DISASTER

Within this framework, an economic model to assess the output effects of a localized disaster can be articulated as follows (for the full mathematical version, see Albala-Bertrand, 2004/1993). One unit of capital loss will always have a lower impact on future output than one unit of capital replaced via new investment. This is because the value of the productivity of capital is always smaller than the value of the investment multiplier, even if the latter were equal to unity. The average productivity of capital represents a fraction of the value of the capital stock, normally around 40% of it, that is, the ratio total output-to-total capital is around 0.4. That is, 2.5 units of average capital normally produce around 1 unit of average output. Given that disasters affect more the less productive capital types, like residential and infrastructure

capital, then the average productivity foregone to the disaster will be lower than normal, say half of it. That is, five units of capital loss would represent one unit of foregone output. And given that the less productive capital is the more affected within any capital type, say half of it again, then 10 units of average capital loss would represent only around 1 unit of average foregone output. That is, the capital–output ratio for the disaster loss will be equal to 10. If we also allow for noncapital contributions, then the impact of capital losses on future output will be even smaller, but to make our point we can stick to the moderate capital–output ratio above.

In turn, one unit of reconstruction investment will represent at least one unit of future income, and significantly more via the multiplier, say conservatively two units. This means that a unit of reconstruction investment would have 20 times more impact on income and output than one unit of capital loss. In other words, to recover the possible negative effect of disaster loss on future output, reconstruction investment can be only one-twentieth of total capital loss, in the first aftermath year. That is, if capital loss represented 10% of GDP, then the required ratio of investment to GDP would have to be only 0.5 percentage points more than otherwise it would have been. As this investment ratio is normally around 15% of GDP, after the disaster it requires to be around 15.5% of GDP, which is not an onerous additional effort. Most countries do fulfill such a requirement within a year or so. That is why only rarely a localized disaster has a negative impact on GDP even in the first accounting year. If anything, because of the new disaster-associated opportunities, related directly to reconstruction or otherwise, and the unlocking of potentials due to public expenditure, domestic finance and foreign exchange, it is likely that there will be a significant acceleration of growth. This will normally be confined to the first 2 or 3 post-disaster years, especially but not only in the case of earthquake disasters (Albala-Bertrand, 1993; Charveriat, 2000). It can also be shown that, after the first post-disaster year, the required investment ratio can be even more moderate than in the first year to keep GDP unaffected. Lastly, and not less important, this is partly the reason why it is unpersuasive that a localized disaster can have important indirect, let alone longer-term, effects on the economy. And it is also partly the reason why the assertions about the existence of harmful cumulative disaster effects on the economy are little convincing.²

An application of this model (Albala-Bertrand, 2004/1993) appears to confirm the patterns above. For example, the large Guatemalan earthquake in 1976, which reported a loss-to-GDP ratio of 17%, required a total expenditure ratio (including both investment expenditure and other expenditure) of 1.2 percentage points more than otherwise it would have been in the first post-disaster year, and significantly less afterwards. In turn, the Honduran Hurricane of 1974, which reported a loss ratio of 45%, required a total expenditure ratio of 8.7 percentage points more than otherwise it would have been in the first post-disaster year, which is huge.

² As indirect, long-term, and cumulative effects of disasters are intractable to direct observation, most disaster “experts” and other observers, like relief operators and journalists, normally get away with noncheckable and nonfalsifiable statements about their importance, which then feed back and are repeated by everybody else as a buzzword. In turn, some studies via abstract modeling also attempt to establish their importance. The latter are interesting but normally fail in their realism. For example, a study by Freeman, Martin, Mechler & Warner (2002), for some regions prone to floods and other localized disasters in some Latin American countries, relies heavily on fixed coefficients, an actuarial concept of losses, and an inert conception of society. Fixed coefficients would normally be a problem for any projection beyond 3 to 5 years, but more so in the case of a serious upheaval resulting from a disaster. The actuarial concept might be useful for isolated items, but certainly not for social processes. And associated with the latter, the inert approach to society is simply untenable. Society, including the economy, is not a collection of inert items or a static cake, which can be wound up as a toy or cut to size, but a living organism that generates societally endogenous reactions. These are bound to produce adaptations, substitutions, economic shifts, migration, diversification, and other in-built societal traits, altering somehow the dynamics and structure of the affected location and country (see Albala-Bertrand, 1993).

The difference is mostly due to the different proportions of current output lost to the disaster, that is, 2% and 18% of the total loss, respectively. However, Honduras current output loss is likely to have been grossly overestimated by the Economic Commission for Latin America and the Caribbean (Cepal) at the time (Albala-Bertrand, 1993). It can be shown that the ensuing GDP losses in the first two aftermath years were also due to the fact that the hurricane did seriously affect the key economic sector of banana plantation. In this sense, the disaster was significantly less localized than the one in Guatemala, that is, closer to cell (12) in Table 9.1. However, there was here also an economic conflict with the banana multinationals who were boycotting production as a reaction to a higher tax. Not surprisingly, as soon as a more pliable dictatorship dropped the tax, banana production and the GDP jumped up to unprecedented levels (Ibid.). Whatever it is, in all the cases in this study, the required investment ratio was generally fulfilled, making potential growth losses more than compensated either in the year of the disaster or within the first two post-disaster years. That is, even in the worse cases, the negative disaster effects on the economy were short lived and more than compensated afterwards.³

Therefore, reactivity via domestic and foreign linkages in a diversified economic environment is paramount to explain why disasters might not have the dramatic negative economic effects that are so commonly portrayed in the mass media and other sources. That is, market behavior and information, economic diversification and integration, public institutions and expenditure, and domestic and foreign interactions will all endogenously and exogenously help counteract, if not outweigh, actual and potential disaster effects. These processes are likely to be enhanced by globalization.

VULNERABILITY IN THE CONTEXT OF GLOBALIZATION

One conclusion so far is that globalization does appear to help the process of localization in general by endogenously enhancing economic diversity and synergy via all-embracing economic networking. These enhanced interlinkages are bound to increase the resilience of an open national economy, making it more able to insulate from general local failures. But does globalization also contribute to reduce vulnerability to natural disasters in particular? This can be analyzed in the context of a disaster situation by looking at the characteristics of a potential impact and a potential response, within their likely societal interfering effects.

Societal Interference

Societal interference is the result of the impact and its effects as well as the responses and their effects, which are bound to have some variable degree of intromission in normal society and economy, making the prevailing resources undergo some rationalization and redirection. Some societal interference effects are normally called “secondary effects” in the literature, but they are normally confined to a few economic accounting results, such as inflation and the public deficit. This is incomplete, as they do not appear to come from societal channels

³ A disaster with similar geophysical or hydrological characteristics, striking the same places today, would highly likely have significantly less negative economic consequences on GDP than then. This result would come from the upgrading of the economic conditions for localization that development itself brings. Not surprisingly, as a rule, disasters in developed countries are always economically localized.

that have been affected by both the impact and the response, but mostly by an overall disaster claim on finance. In addition, they appear too confined to visible financial traits, ignoring endogenous societal processes. Societal interference can be expressed in short-term changes in the public and trade deficits, in inflation and relative prices, in capital flows and remittances. But it can also be seen in terms of institutional changes, which can translate into fragmentation and politicization, technological changes and migration, corruption and speculation, and in less common long-term changes in economic and political structures. In the case of natural disasters, this interference is for the most part an incidental effect of the impact and the response to a disaster situation. But there could also be some interference that intentionally seeks to reduce societal vulnerability to future disasters via preventive policies, which may in addition have a developmental component (Ibid.).

The emergency and especially reconstruction may be highly invasive, but they are likely to have different degrees of potential interference. In natural disasters, emergency response is likely to have a high degree of incidental interference, derived from general institutional stress. But it may also stimulate some deliberate political interference, derived both from the fragmentation of the state apparatus and the ensuing inward activities of identity groups (Albala-Bertrand, 1993; Chakrabarty, 1978; Geipel, 1882). This interference is unlikely to be dramatic and is usually the incidental effect of physical, rather than institutional, demands. In some cases, however, like the Sahelian drought/famine of 1974, the emergency response itself became the problem for long-term recovery, as it created a strong foreign-assistance dependency, weakening the domestic capacity for autonomous social and economic recovery as well as further general development (Lateef, 1982).

Disaster Impact Effects

Once a disaster impact has occurred, two main types of effects ensue: direct or stock effects and indirect or flow effects. Direct effects have an impact on the quality and levels of human populations (injury and deaths) as well as on the quality and levels of physical and animal stocks (damage and destruction). In turn, indirect effects derive from the former, affecting the interrelationships between physical structures and between people. These two types of effects cause losses to society's stocks and flows. For example, for the economic system, direct effects represent losses to the capital stock and labor, whereas indirect effects represent losses to functioning flows, in terms of foregone production and income, savings and investment, productivity and efficiency, and the like. For socially made disasters, like complex emergencies or technological hazards, there is also an institutional effect, as the triggering event, the proneness, and vulnerability to breakdowns are themselves both institutionally based and due to institutional failure.

Indirect effects can be usefully decomposed into four disarticulations of societal frameworks, which are not independent from each other. Two disarticulations, while secondarily affecting the social system, primarily affect people's basic needs and welfare. These represent the effects that can potentially come from the disarticulation of both household conditions (i.e., homelessness, services shortages, displacement, and livelihood erosion) and the states of health and nutrition of the population (i.e., environmental degradation, hygiene problems, increase in disease and food scarcity). The other two disarticulations, while secondarily affecting people, primarily affect the social system, and represent the potential effects from the disarticulations of both the economic circuit (i.e., effects on intermediates markets, final markets, policy and expectations) and public activities (i.e., overburden, discontinuities, fragmentation, and

politicization). With some qualifications, these potential disarticulations and potential effects are common to all types of disaster.

Indirect effects, however, appear to be more remarkable for the effects they do not have than for those they do. There is little evidence that the consequences of the disarticulation of household conditions are long lasting, even when the direct effects can dramatically affect some vulnerable social strata. The case is similar with the disarticulation of health and nutrition frameworks, where its potential consequences normally appear to be small, containable, or nonexistent. The economic circuit may be initially disrupted, especially in the directly affected zone, but there is no much evidence that a localized disaster would have significant macroeconomic repercussions, even in the short term, as was shown above. Lastly, the disarticulation of public activities might have more serious consequences than the other ones, especially if an administrative center or a capital city is directly affected, but it normally does not. Fragmentation of institutions and politicization of the response activities are common traits of disasters, but only rarely do they translate into a major structural change or are they significant beyond the emergency activities. Notice these two traits also represent endogenous mechanisms to counteract disaster effects. Disaster-induced structural change appears to depend more on the affected society's prevailing structure and dynamics than on the disaster effects themselves. But only an effective emergency response may guarantee that the potential disarticulations and their effects are not only short-lived, but also the emergency itself is not wasteful (Albala-Bertrand, 1993).

Direct Impact Effects

It is well known that the most affected capital stocks by the direct effects from natural disasters are normally both residential capital and infrastructures, usually representing more than half of the total loss, private housing and roads being the most affected. The former would impinge on household conditions directly, while the latter would initially disarticulate utilities and the transport system, potentially affecting economic flows within the disaster area and between this area and the rest of the economy. This would indirectly rebound on households and the local economy. It is also known that business capital, especially the fixed assets of the secondary (manufacturing) and tertiary (service) sectors, normally undergo a small share of direct losses, between negligible losses (floods) to around 10% of them (earthquakes and hurricanes). Primary sectors can bear an important share of the total capital loss in sudden hydrometeorological disasters, mainly in terms of agriculture and cattle losses, but it can also be shown that this is often macroeconomically compensated in the short run (Ibid.). At any rate, the less productive capital and labor are normally the more affected, which also means that the required investment to compensate for potential growth losses is smaller than otherwise it would have been, as was shown in the previous section (Albala-Bertrand, 2004/1993). Can globalization alter favorably the above patterns?

GLOBALIZATION AND IMPACT PREVENTION

Prevention is also part of the anticipatory response to disasters, as discussed below, but here we concentrate on prevention of the impact itself, that is, the interface between a geophysical event and a social system. How could globalization modify the intensity of the direct effects of a disaster impact? This would depend on factors that could modify either the strength of

the geophysical event or the physical resistance of a disaster-prone community. As regards the event, there is little that globalization can do directly, as it would mostly depend on highly sophisticated technology to alter the strength of earthquakes, hurricanes, floods, and volcanoes at source, which is hardly available (Kunreuther & Rose, Vol. I, Part V, 2004).

Economic globalization, however, does appear to be damaging to the environment and also to some sections of society. For example, vulnerability of both the people and the environment can increase when cash crop agriculture evicts and pushes already vulnerable people to marginal lands, also when the rain forest succumbs to trade, or when carbon dioxide pollutes the environment, or when urban areas undergo accelerated overcrowding. Some of these factors may increase the frequency and magnitude of floods and other natural events. Carbon dioxide emissions, arguably associated with global warming, might intensify desertification, erosion, hurricanes, flooding, and tsunamis (Albala-Bertrand, 1993; Haas, 2003). This is a current debate that has captured the public imagination and can be exemplified by the Kyoto Protocol to control emissions. But for as long as the United States does not appear willing to participate there will be little changes, as this economy is still the largest polluter. As a countertrend, however, the global community has become closer by virtue of globalization, so it has also become easier to point the finger against violators of world well-being, and press more effectively for positive changes. Hence, debate about economic, political, and legal aspects of environmental and human protection have also become more expedient. The likes of the Kyoto Protocol would not have been approved only a decade ago (Faure, Gupta, & Nentjes, 2003; Hanley & Owen, 2004).

As regards the community's exposure and resistance to disasters, a first contribution from globalization would be the setting up of early warning systems associated with preparedness for appropriate responses to them. This is likely to modify the intensity of direct impact effects on people, via organized evacuation toward less exposed areas and buildings (Mileti & Sorensen, 1988; Tsuchiya & Shuto, 1995). It is likely that the massive death toll from the 2004 Asian tsunami would have been largely avoided had early warning systems been in place in that area of the world. Globalization can create more awareness about the need for concerted regional safety systems and can also pool the costs of such systems more easily (e.g., <http://tsunami.report.ru/>).

As regards the strength of the physical built-up environment, the main mechanisms to reduce the disaster impact vulnerability are regulations of buildings and structures, such as construction codes, land use licenses, and regulations about land location and the handling of risky technology. Globalization, via dissemination of information about best practices, may contribute positively to a better understanding of design and use of structures as well as their monitoring and legal enforcing. In addition, insurance can also play a role at this juncture, by disciplining construction and land use, as conditions to qualify for insurance cover. Also, the requirement to introduce disaster-risk factors in both cost-benefit analysis and private investment projects, as a condition for international and domestic loans, can also work toward this aim (Mechler, 2003). Globalization also assumes an increasingly more open and transparent society, which may favor the observance and application of legislation, and at the same time that also contribute to reduce traditionally unchecked corruptive practices.

This is not unimportant, but its effective implementation depends more on the type of society than on globalization itself. So the role of the state, as a necessary complement or substitute for private markets, should not be overlooked. Current globalization, however, does not primarily favor this role in any significant way, which is another insufficiency to address. In addition, it can be shown that the current dominant, but increasingly criticized strain of globalization, the Washington Consensus, even when successful at the macroeconomic level,

generates and perpetuates large income inequalities and disparities in purchasing power, at least in the short and medium terms. It can also be shown that this type of globalization does not count with many unqualified successful cases, even at the macroeconomic level (Rodrick, 2004; Taylor, 2000). This means that if current trends remain unchecked and unmodified, more people in more countries are likely to be rendered more vulnerable than currently are. There are, however, alternative roads to a more all-embracing type of globalization, like the Asian model, but Washington and its followers have so far resisted such alternatives on arguably ideological grounds (Chang & Grabel, 2004; Wade, 1996). But if the disaster impact itself cannot be fully prevented, how would globalization fare in the area of actual disaster responses?

DISASTER RESPONSE

Disaster response can be defined as a wide array of endogenous and exogenous reactions, measures, and policies that are aimed at mitigating, counteracting, and preventing disaster impacts and effects. The response side of a disaster situation can be articulated as follows: once a disaster impact has arisen, the impact effects themselves stimulate both the unfolding of systemically incorporated mechanisms of response and the creation of especially designed response measures. These two sets of responses aim at compensation via emergency activities that temporarily counteract functioning flow losses (i.e., emergency relief and emergency rehabilitation) and at reconstruction activities that permanently redress the consequences of stock losses and institutional insufficiencies. The impact effects and the derived compensatory responses also stimulate an anticipatory response aimed at prevention and mitigation of future potential disasters. This then generates three not independent main areas of attention, which make up the response side of a disaster situation: response mechanisms, compensatory response, and anticipatory response (Albala-Bertrand, 1993). In addition, as a disaster situation always generates varying degrees of societal interference, then the disaster response should also be contextualized in terms of response-induced interfering effects, as described earlier.

RESPONSE MECHANISMS

Response mechanisms refer to endogenous and exogenous processes of response. Endogenous response mechanisms are those channeled through society's in-built institutional processes. These processes represent a series of formal and informal feedback mechanisms, which are part of the existing self-regulatory social organism, for example, the family, informal finance, the informal sector, formal markets, political and administrative frameworks, cultural norms and customs, psychological attitudes and habits, and so on. 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 mostly a nonautomatic in-built response. Likewise, market reactions and emergent coalitions appear to lie somewhere in between. A good deal of these processes may act as an informal insurance mechanism, associated with social cooperation and solidarity as well as individual reciprocity and altruism, both societally founded processes, which can be resorted to in times of distress (Albala-Bertrand, 1993; Hirschleifer, 1975).

Exogenous mechanisms, in turn, are those channeled via ad hoc, irregular, processes that are not patterned or guaranteed. These are expressed in action, measures and policies that may

formally fill gaps left by in-built responses, by-pass endogenous channels, shift initiatives away from regular actors, or superimpose alternative structures. This normally implies private and public interventions that go beyond in-built actions, and international assistance and aid that go beyond existing guarantees. In the long run, however, these two response types might not be necessarily independent. This is because the endogenization of societally useful exogenous initiatives and behaviors, via education and other social institutions, is the normal way in which society strengthens and develops (see Albala-Bertrand, 1993; Barton, 1970; Cuny, 1983; Davis, 1978; Dynes, 1970; Prince, 1920; Quarantelli, 1978; Sorokin, 1942; White, 1974).

Some of these response mechanisms might be helped by globalization. One of the main planks of globalization is the deepening and enhancing of international trade. Foreign trade benefits a country by unlinking the domestic structure of production from that of demand. Domestic production then can also satisfy a foreign structure of demand via exports, while domestic demand can also be satisfied via imports of final and intermediate goods. This diversifies the sources and markets of inputs and outputs. In addition, in countries with small markets, it allows using capacity at a higher level than otherwise it would have been. This is bound to increase the localization of a disaster, as the output and capital losses as well as the ensuing demand losses in the disaster zone can now be more easily made up with alternative domestic and foreign markets. This may not only reduce even more effectively the potential for widespread effects on the macroeconomy, but also change the structure of supplies and demands toward more stable markets. Although this may promptly shelter and compensate the macroeconomy from unwanted indirect flow effects, it may also put out of business a number of affected economic activities in the disaster zone. That is, even if foreign-free trade may contribute to confine and isolate the potential for widespread indirect effects, it might not necessarily contribute directly to the recovery of activities and people in the affected zone. This may make the disaster even more economically localized than before, but it might also worsen the plight of affected communities by passing them over. But if the macroeconomy is not affected, then it should be more expedite and less onerous for the affected country to counter the effects in the disaster zone both exogenously or otherwise. So again the main focus of exogenous disaster response should be people and activities directly affected in the disaster zone, as an open macroeconomy is highly unlikely to be affected in any significant way by localized disasters, even in the absence of important exogenous public and foreign responses.

A wide opening to international trade, however, has also a number of downsides for developing countries. Among other problems, first, there will be an initial destruction of indigenous uncompetitive firms and a probably long-lasting confinement to the production of primary products (Weiss, 2002), increasing general and disaster vulnerability in passing. This is the consequence of the elimination of tariff and other trade protections, which is demanded by the WTO for foreign trade agreements (FTAs), not always readily observed by OECD countries. Second, it may also make the economy more vulnerable to international fluctuations, again weakening domestic response in the event of disaster. Third, it may also stifle domestic technological sophistication and the economic efficiency of domestic intermediate inputs, which may in the long run make an economy less flexible to adapt to sudden changes. Hence the positive aspects of free trade have to be balanced against the negative ones when analyzing it, let alone when designing policy for the real world and current generations (Albala-Bertrand, 1999; Andersen, 2003; Chang, 1996; Chang & Grabel, 2004; Stiglitz, 2002). Both exogenous and endogenous responses may become strengthened via enhanced communications, regional free-trade agreements, or by attracting foreign tourism. This may increase international solidarity and concessional aid to deal with emergency relief and emergency rehabilitation. But

on the downside, free trade may affect standard endogenous social mechanisms of response in negative ways by disenfranchising traditional economic activities via foreign competition. This translates both in losses of traditional livelihood and lack of alternative livelihood in the short to medium terms. It also translates in increases in inequalities and instability of especially the most vulnerable sections of society, which normally represent the overwhelming majority in developing countries. Both the extended family and community support are bound to be weakened by this kind of societal disenfranchising. This means that the well-known endogenous reactions in the disaster zone, which are paramount to deal with the early relief and rehabilitation, are bound to be impaired, requiring faster and larger exogenous and endogenous responses from outside the disaster zone than otherwise it would have been.

It is, however, not enough that an open macroeconomy has available resources to deal with an actual disaster, as countries with acceptable GDP per capita and good growth rates can and do carry unacceptable levels of inequalities and poverty, that is, the so-called “trickle down” does not appear to work. Therefore, a policy balance between positive and negative aspects of free-foreign trade should actively consider the formalization of well-funded and well-managed public and private mechanisms of response to potential disasters (Benson & Clay, 2004).

COMPENSATORY AND ANTICIPATORY RESPONSE

If the disaster impact cannot be prevented, we then should look for ways to reduce and effectively absorb and counteract its effects as they occur. Emergency relief and emergency rehabilitation are likely to be enhanced by globalization via macro insulation, local integration, buffer reactions, and general exogenous resources vis-à-vis the said impairments to endogenous reactions. Once the emergency response has contained the spread and the deepening of indirect effects, the basis for starting to reverse the direct effects would be feasible. This would come in the shape of physical reconstruction plans, which is partly an exogenous type of activity, but financing from insurance, market reactions, and other in-built systems would also be involved. These responses do require public involvement out of public finance via contingency funds, new grants and subsidies, tax and bills write-offs, and the like. But it would also require foreign aid and credits, including material, technical, and labor assistance. These responses are therefore bound to interfere with standard activities that compete for the same resources, but it may create or unlock new resources that were not available before the disaster (Albala-Bertrand, 1993). These responses can also be made less intrusive and therefore more effective by resorting to in-built financial mechanisms that transfer risk and that increase the available funding for reconstruction, that is, the use of financial anticipatory mechanisms either as a specific disaster aim or as an incidental by-product of financial deepening.

This takes us to the second main plank of globalization, the development of domestic financial markets and its integration with a global financial market, in terms of bank loans, portfolio investment, and foreign direct investment. These are meant to increase greatly in coverage and depth, via the development and creation of financial instruments and products. Setting aside, for the moment, the serious problem of domestic regulation of foreign financial flows, a more extensively developed financial market would include some mechanisms to fund, spread, transfer, and reduce risk and vulnerability. Instruments such as disaster insurance and reinsurance, catastrophe bonds and weather derivatives, hedge funds and disaster credit, reserve funds and remittances, are all part of the current need to establish a financial architecture

aimed at disaster vulnerability reduction (Andersen, 2003; Doherty, 2000; Keipel & Tyson, 2002; Kunreuther, 1996).

If this was the case, then the impact of a natural or technological disaster might be at least partly absorbed, via improved access to the above instruments and better information about risk vis-à-vis materials and design. But for as long as the collateral requirements were not readily available, loans and other forms of financial protection might not reach the people who need it most in the wake of a disaster. Insurance premiums might be an unaffordable cost for precisely the people and activities more likely to be directly affected by a disaster impact. Still, the easier availability of these products for firms and employers, by virtue of globalization, might reduce the livelihood vulnerability of employees, even if the latter cannot afford insurance of their own. But, even if the domestic and international financial market for insurance were easily available, voluntary insurance and other risk-transfer instruments, as a norm, are poorly demanded (Albala-Bertrand, 1993; Cochrane, 1975; Dacy & Kunreuther, 1969; Giarini, 1984; IDB, 2003; Kunreuther, 1997). These anticipatory actions would also involve the monitoring of markets, migrations, and general people's reactions, so that response effectiveness can be maximized, while antisocial and speculative behaviors can be minimized. Most of these responses may have strong societal implications as they aim to modify people's behavior and institutions. State involvement, as a guiding drive, becomes of paramount importance. These include the setting up of land-use regulations and building codes, with their associated legal enforcement. It also includes the supervising of financial transfer mechanisms and people's participation in prediction/warning, preparedness, and self-help systems, including microfinance. All this requires government intervention at all levels for effective reactions to potential and actual impact effects (Albala-Bertrand, 1993; Dreze & Sen, 1990/91; Godschack, Beatley, Berke, Brower, & Kaiser, 1998; Mileti & Sorensen, 1988).

DISASTER VULNERABILITY AND GLOBALIZATION

We have seen above that globalization is likely to help the process of localization, hence helping insulate the macroeconomy from disaster effects. We also saw that trade and financial resources can act in favor of reducing disaster vulnerability by increasing disaster-specific absorption capabilities and the resilience of those who can afford it. But lower macroeconomic vulnerability is perfectly compatible with higher social vulnerability at a local level, especially that of those directly affected by a disaster.

Globalization and Social Exclusion

Community, defined as a stable array of institutions that set patterned societal interaction and hierarchies, within and between particular identity groups, like family, neighborhood, workplace, formal and informal working relationships, might be the first casualty of fast and unfettered globalization (Chang & Grabel, 2004; Stiglitz, 2002). As indicated earlier, there is plenty of evidence that the fast opening of trade is bound to make small and financially precarious firms especially uncompetitive, and therefore unviable. These would affect formal firms and their workers as well as informal economic activity that depends on these firms, which may represent the overwhelming majority of economic activity in some developing countries (Thirlwall, 2003; Thomas, 1992). In addition, the current globalization push for privatization,

deregulation of labor markets and general restructuring of firms, which seek fast efficiency and productivity improvements, does not generally pay much attention to the ensuing social costs. This is bound to make matters even worse for the precarious social fabric of many communities and people. If there were no alternative means of livelihood, nor was there any public protection on these affected people, and the transition to higher employment and stability was slow, then both informal and formal endogenous mechanisms might well be badly impaired at the time of a disaster impact.

The hope is that this will only be a short-term passage to a stronger economy and society. But as it happens, this transition is slow to deliver better general conditions and access. And even when things might be improving, the trickle down to poorer social strata would either be too slow or not forthcoming. In addition, the liberalization of especially short-term capital flows is now well known to create negative economic shocks and instability associated with lack of regulation and controls, which is bound to further impair the stability and strength of endogenous response mechanisms. Therefore, globalization, as it has been carried so far, may significantly weaken useful local endogenous response mechanisms at the time of disaster, thus demanding a stronger exogenous presence of domestic and foreign sources when a disaster strikes. There might then be the requirement of international concerted efforts to improve the soundness and safety of globalization policies as an aim in itself, so that the masses of vulnerable people and activities get a better deal than currently, especially in the face of natural hazards.

Synchronization of the Business Cycle

If globalization makes the cycle synchronic, and there is a recession in the US locomotive, then the downturn will become global, affecting globalizing economies in a number of ways. First, it would reinforce the negative effects coming from unfettered globalization, as described earlier. This would also affect informal financial markets, which might become less agile and effective in the wake of fast globalization, again impairing recovery. Further, people's remittances from abroad would be strongly hindered. As this is usually a very important type of informal financial response at the family and local level, recovery of household and individual livelihood conditions would likely be additionally impaired. Second, as export demand, commodity prices, and capital flows decline, then both less domestic financial resources will be available and the already depressed communities would be further impaired, which would further weaken endogenous response mechanisms. Third, in a similar vein, both bilateral and multilateral sources of foreign finance might become strongly procyclical, reducing significantly their role in recessions. Fourth, nongovernmental organizations (NGOs) depend on donations from a variety of people, which might dry up with a synchronic recession, curtailing their functions. Finally, international private sources might, however, be undergoing excess liquidity, which can contribute to easy, but risky, lending.

A country in recession may, however, have more idle capital resources to put in the service of rehabilitation and reconstruction, which may be stimulated via appropriate domestic demand policies in the aftermath of disaster. This would be expected to engage other domestic activities not directly related to disaster response, and so affecting the whole economy positively. But globalization itself may make this useful expansionary policy less effective than otherwise it would have been, as most capital is not malleable and therefore cannot be switched to alternative types of production in the short and medium terms. So if the economy were significantly open, then most types of output would have already been geared for exports. A recession then will

have both the export sector and its backward domestic linkages operating with significant idle capacity. Domestic demand can normally be satisfied with only a small fraction of these exportable goods. This would make disaster-induced expenditure less effective as a mechanism to compensate the economy and stimulate other sectors than in a closer economy. On the other hand, if the world economy is in an upturn, then the situation for foreign aid and resources would likely be relaxed and forthcoming, but also domestic financial resources would be more readily available. This can contribute to speed recovery from disaster, although it could affect the economy somehow via inflation, uncoordinated sectoral shifts, labor shortages, and other bottlenecks.

CONCLUSIONS

Our main conclusions are as follows. First, disasters may impose large residential, infrastructure, and agricultural losses as well as large death tolls and injuries within the disaster zone, but it is highly likely that these losses and problems will be economically localized. Second, economically localized losses of capital and activities, death tolls, and injuries are unlikely to affect negatively the macroeconomy in the short term, let alone in the longer term. Third, it is unlikely that this general pattern would significantly change by virtue of the negative features of globalization; if anything, the positive features of globalization may help make a disaster even more economically localized than otherwise it would have been. Fourth, development itself appears to be a process whereby all disasters become more economically localized. That is, “disasters are primarily a problem *of* development, but essentially not a problem *for* development” (Albala-Bertrand, 1993, p. 202). Fifth, the negative features of current globalization may, however, make a significant difference for increased direct local victimization, as the local endogenous mechanisms of response may be seriously impaired by both the structural changes associated with international trade competition and the potentially recessionary effects of unmanageable capital flows. But successful globalization itself may also provide the resources for speedy local recovery if there was political will. Sixth, given that globalization appears to make the world business cycle synchronic and dependent on the U.S. economy, a U.S. recession would also become a global situation. Hence, financing disaster response might become procyclical, affecting a disaster-struck country more adversely than it would otherwise have been. The jury is still out about the issue of synchronization, so time will tell how relevant it is. Seventh, globalization can provide new opportunities for both improving physical prevention and diversifying risk, via information about best practices, access to appropriate technology, disaster insurance, equity mechanisms, international cooperation, and the like. But the useful incorporation of these opportunities into the economy and polity would depend not only on domestic society and its ruling regime, but also on globalization policies and their social concern. A good deal of work is being carried out by academics and international institutions, but it would always be useful to entertain a further diversity of positions and studies.

As a main suggestion for disaster research, it would be useful to enhance the duality thesis proposed here by explicitly assessing disaster events within this framework in a systemic manner. First, it would be useful that future studies start classifying disaster impacts according to some meaningful concept of economic localization, within the general definition proposed here. This may allow establishing some useful patterns at more focused levels (regional, demographic, political, and the like). Second, many studies have unintentionally shown that localized disasters do not have significant effects on the national economy, but shy away from making

this connection explicit. The framework proposed here might help overcome such reluctance and encourage making such connection both systematically and in the appropriate institutional context. Given that different institutional frameworks are likely to unleash different response patterns, knowing more about them may contribute to recovery, reducing victimization and costs. Third, as regards development, it would be useful to look at the particular development factors and policies that can incidentally make a contribution to enhance disaster localization, therefore reducing vulnerability in both given countries and in general.

Therefore, I would suggest that approaching the study of disaster vulnerability via a framework of economic localization vis-à-vis the actual globalization experience of disaster-prone countries could produce useful understanding and policy rewards.

Finally, given that a macroeconomy would unlikely be affected by an economically localized disaster, communities and activities directly affected should be the main target of response policies, rather than the unwarranted belief that the economy as a whole would be impaired. In addition, apart from early warning, disaster preparedness and general resource management in the case of hazards, the design of more inclusive and stable approaches to globalization should be a fundamental way to reduce the natural hazard vulnerability of most people in developing countries.