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Mexico: Political Implications of the 1985 Earthquakes—A Comparison With Nicaragua and Guatemala

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An Intelligence Assessment

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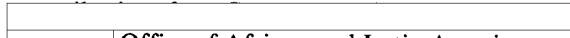




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An Intelligence Assessment


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Operations. 

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Comments and queries are welcome and may be
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**Mexico: Political Implications of the
1985 Earthquakes—A Comparison
With Nicaragua and Guatemala**

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Key Judgments

*Information available
as of 25 March 1986
was used in this report.*

The two earthquakes that struck Mexico last September added to the short-term difficulties facing the government of President de la Madrid, but—if the government maintains its initial performance—they seem unlikely to affect the country's long-term political stability. We compared Mexico's emergency performance and consequent political fallout with the experiences of Nicaragua and Guatemala following similar disasters in 1972 and 1976, respectively. Although the Mexican performance is mixed, it seems sufficiently differentiated from the Nicaraguan example and similar to the Guatemalan experience to warrant the conclusion that the earthquakes will not prompt a serious challenge to the present political structure. Several factors unique to the Mexican experience seem to reinforce this conclusion.

Nicaragua and Guatemala were selected for benchmark comparison because, while both their earthquakes were devastating, there is a generally held belief that Nicaragua's quake in 1972 contributed to the eventual overthrow of the Somoza government, while Guatemala's response to its disaster in 1976 strengthened backing for the regime. Using 16 generally accepted instability indicators—modified to make them quake relevant—we compared these earthquakes with the recent disaster in Mexico. Our comparative analysis of the Mexican, Nicaraguan, and Guatemalan experiences highlighted three variables where responses were divergent and which may serve as indicators of quake-related instability in Mexico:

- Corruption in the relief process.
- Portion of affected populace assisted.
- Ability to handle the quake.

Quake-related corruption is unlikely to influence future political stability in Mexico, in our judgment. Although some business leaders in the opposition and quake survivors have complained of improprieties in the relief effort, we have no evidence of major misuse of emergency aid for personal gain. Most charges have been tied to individual acts by low-level officials and military personnel, not the type of widespread corruption likely to threaten stability. In Nicaragua, the exposure of large-scale corruption during relief efforts contributed to a decline in the legitimacy of the regime, according to our analysis. Guatemala's performance in the aftermath of its quake was characterized by little disaster-related corruption and the government's efforts were generally viewed by the population as honest and efficient, according to published accounts of the period.

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April 1986

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We believe most Mexicans affected by the quake should eventually receive some benefits, even though Mexico's reconstruction effort is somewhat lacking in direction and is achieving mixed results. This appears to be an important factor in minimizing public discontent. In Nicaragua, the distribution of emergency supplies and reconstruction planning were determined by favoritism and class bias, adding to the alienation of large portions of society. In Guatemala, by contrast, most of those affected by the quake benefited from the relief and reconstruction efforts.



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Various published accounts of the Nicaraguan disaster note that the Somoza leadership was viewed by the people as inept in handling their needs, and its poor response worked to weaken the stability of the regime. Guatemala, however, again followed a course that was stability enhancing. Its government was perceived as skillful in providing initial relief and in returning many essential services as early as one day after the quake struck, according to press  reports.

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During our analysis of the earthquakes, we noted three developments that were unique to the Mexican disaster:

- The lesser level of destruction.
- The supportive role of the military.
- The formation of popular self-help groups.

Mexico's position for the first two factors is generally favorable for stability. Comparing the amount of destruction in each of the three countries, Mexico clearly can absorb the impact of the quake more easily. For example, less than 2 percent of Mexico City was destroyed, leaving fewer than 1 percent of its population homeless. In Managua and Guatemala City, however, 80 percent and 20 percent of habitable buildings, respectively, were destroyed, with 75 percent and 17 percent of the respective populations left homeless.

The relative lack of damage did not prevent Mexico from attempting to exploit the quakes to strengthen its case for financial assistance. The government successfully used the disaster to obtain a six-month deferment of a \$950 million principal payment due in installments on 1 October and 4 November 1985. Beyond this, however, creditors were unwilling to

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provide additional debt relief. In their estimation, the damage was not sufficient to justify most Mexican requests. The quakes have thus ceased to be a justification for Mexico's inability to pay creditors since the government now explains its financial gap as a result of decreased oil revenues.

Although disputes over control of relief operations strained the relationship between military and civilian leaders in Mexico, the armed forces performed well and remained steadfastly loyal to the government. The government continues to seek ways to lessen this strain; however, in our judgment, additional attempts to diminish the role of the military would jeopardize the traditional supportive relationship between the two groups. This was not a problem in either Nicaragua or Guatemala. The military leadership in Nicaragua remained supportive of Somoza throughout the disaster; and, in Guatemala, a military leader ruled the country.

The third area, formation of popular groups, is being closely monitored by de la Madrid. Such popular groups were not in evidence in Nicaragua and Guatemala after their disasters, so it is difficult to fully assess the longer term threat they might pose to the Mexican ruling party's hold on power, if any. In our judgment, the Mexican Government's monitoring of these groups virtually ensures that they will not suddenly become a threat to stability.

Overall, we consider the direct risk of political instability resulting from the aftermath of the quake as small. Although Mexico will continue to face increased problems in other areas, particularly economic, the disaster, in our judgment, should not make these existing difficulties insurmountable. There are several indicators, however, that we believe would be warning signs of an increased threat. These include:



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- Failure to follow through on reconstruction efforts, particularly housing for quake victims.
- Additional civilian usurpation of what the military considers its role, or military disaffection with civilian leadership.
- Increased activity from the newly formed quake-relief groups, or the emergence of a charismatic leader among them, rather than the now widely expected, gradual fading away of these organizations.



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	<i>Page</i>
Key Judgments	iii
Introduction	1
Methodology	1
Overview of Survey Results	2
Factors To Watch	4
Corruption in the Relief Process (Variable A)	4
Portion of Affected Populace Assisted (Variable B)	6
Ability To Handle the Quake (Variable C)	7
Unique Mexican Developments	8
Level of Destruction	8
The Role of the Military	10
New Popular Organizations	11
Outlook	11
Appendixes	
A. Complete Country Survey	13
B. Multidimensional Scaling	15

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Figure 1
Central American Major Earthquake Epicenters



Boundary representation is not necessarily authoritative.

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Mexico: Political Implications of the 1985 Earthquakes—A Comparison With Nicaragua and Guatemala [Redacted]

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Introduction

This paper assesses the potential impact of Mexico's recent earthquakes on political stability by contrasting the de la Madrid administration's postdisaster efforts with the reactions of the respective governments to two other regional quakes—in Nicaragua in 1972 and in Guatemala in 1976. These countries were selected because their quakes were devastating, and because there is a generally held belief that Nicaragua's quake contributed to the eventual overthrow of the Somoza government, while Guatemala's response strengthened the support for the regime. [Redacted]

Analysts currently working on Guatemala, Nicaragua, and Mexico ranked their countries on a scale of 1 to 5 for each variable at periods of six months and two years (except Mexico) after their respective quakes. These responses were also coordinated with published accounts of the period. In each case, a ranking of 1 or 2 was considered conducive to stability, 3 indicated no change, and 4 or 5 represented a possible threat to political stability (see table 1). By contrasting the Guatemalan and Nicaraguan experiences, patterns emerged indicating which variables were more or less likely to affect political stability. Comparing the current situation in Mexico with these experiences, we could then judge whether the de la Madrid administration was effectively handling the quake-related problems that might threaten stability. [Redacted]

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An explanation of the methodology used for this comparison is included in the first section of this paper. The study then focuses on three earthquake-related factors that were determined to be possible indicators of impending political instability. In addition, other developments, which our analysis identified as unique to the Mexican disaster, are examined in a separate section. An overall assessment is included in the final section. [Redacted]

During this examination, we also identified three developments unique to the Mexican quake that could influence stability. The areas were: level of destruction, the military's role, and the formation of popular groups. These areas, which could have an impact on political stability, are examined in a separate section. [Redacted]

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Methodology

Our method for determining the possible effects of an earthquake on political stability focused on identifying and examining key indicators before and after the disaster. The Office of Global Issues has defined 85 indicators associated with instability. Using that work, we modified some questions—making them quake relevant—and developed a list of 16 variables to study the events surrounding earthquakes that may lead to political instability (see appendix A). These variables were grouped into the following five categories:

This methodology has limitations. It would have been desirable to have had more cases for comparison. However, the Mexican disaster was only the 10th major earthquake in Latin America since 1900. Of the nine previous quakes, relatively little data were available on the five disasters prior to 1971. One, which occurred in 1985, could not be used to provide examples of long-term effects. Two of the three remaining earthquakes were selected because the results in each case provided clear examples of a positive and a negative outcome. Another limitation was that it was not always possible to determine if a change was attributable to the quake or to some other event, particularly if a year or more had intervened since the quake. The fact that the Mexican quakes occurred relatively recently and definitive information on their implications is not yet available also constrains this analysis. It should also be noted that we do not consider the variables used as an all-inclusive list. [Redacted]

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- Level of alienation.
- Ruling elite cohesion.
- Government repression.
- Opposition activity.
- Economic changes. [Redacted]

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Table 1
Variable Data

Variable	Guatemala		Nicaragua		Mexico
	6 Months	2 Years	6 Months	2 Years	4 Months
Level of alienation					
A. Skillful/inept in dealing with quake?	1	2	4	5	4
B. Relief aid benefits elite or many?	2	2	5	5	3
C. Example of success or failure?	1	3	5	5	3
Ruling elite cohesion					
D. Conflict increase among ruling elite?	3	4	3	4	4
E. Military view of civilian actions?	3	3	3	3	5
F. Win/lose major postquake elections?	3	3	4	4	3
Government repression					
G. More crackdowns on the people?	4	5	4	4	3
H. Change in government repression?	4	5	3	4	3
I. Change in reasonable concessions?	4	4	3	3	3
Opposition activity					
J. Increase in opposition groups?	4	4	3	4	4
K. More foreign aid to opposition?	3	4	3	3	3
L. Increase in riots/protests?	4	4	4	4	3
M. Growing sympathy for opposition?	4	5	3	4	3
N. Growing criticism from common people?	4	4	4	4	4
Economic changes					
O. Changes in cost of living?	4	4	4	4	3
P. Changes in foreign aid/investment?	4	5	2	2	2

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Overview of Survey Results

The data in table 1 show that responses for most variables were similar, suggesting that many quake-related factors have little unique impact on the long-term political stability of a country. Moreover, similar occurrences, such as increased repression and opposition activity, followed the quakes in both Guatemala and Nicaragua, suggesting that these factors alone cannot be considered indicators of the potential threat an earthquake can unleash for the future stability of a government.

Significant differences surfaced, however, between the responses for Nicaragua and Guatemala as concerns the following three alienation and one economic variables:

- Was the government skillful or inept in dealing with a quake? (Variable A)
- Did most people or only the elite benefit from relief efforts? (Variable B)
- Was the government's handling of the disaster viewed as a success or a failure? (Variable C)
- Were there changes in foreign aid or investment as a result of the quake? (Variable P)

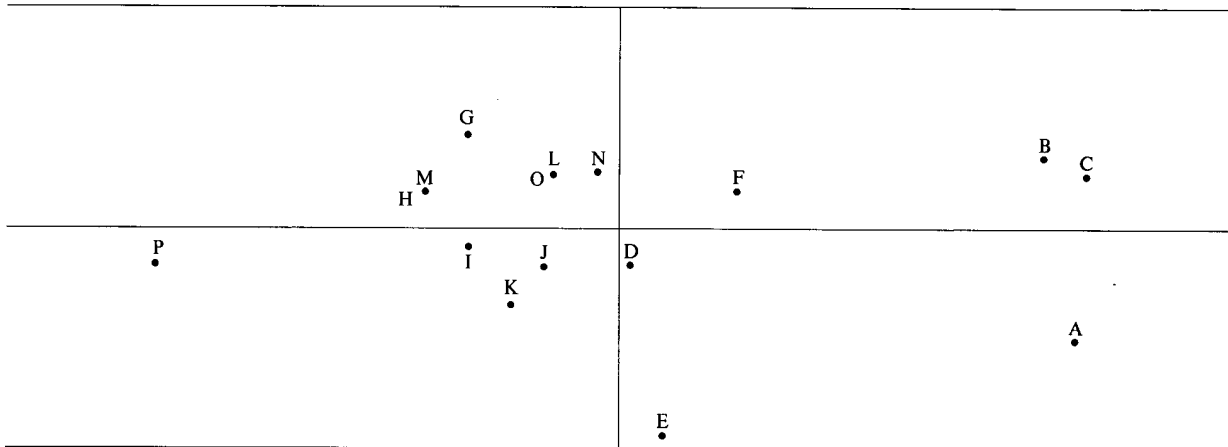
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Figure 2
MDS Scattergram Showing Similarity
Between Variables



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This observation is supported by examining all the factors with a statistical research technique known as multidimensional scaling (MDS) (see appendix B). Figure 2, produced by using MDS, shows the similarity between the variables. Twelve of the 16 are loosely clustered in the center of the diagram, representing the relative similarity of most variables. Four points (A, B, C, and P) are clearly distinct from this group and could therefore be considered the best indicators to explain why the earthquakes affected political stability in Nicaragua and Guatemala so differently. The diagram also provides a graphic representation that the economic factor (P) varies in a different, almost opposite, manner than the alienation variables (A, B, and C). Closer examination reveals that Nicaragua's results on the economic variable were significantly more positive, indicating that it was acting as a

force for political stability. The effect of this factor, however, was apparently overridden by the extensive government corruption that negated its impact. Consequently, we concluded that the economic variable was misleading as a predictive variable in this case.

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The three variables concerning alienation are treated in the following section as factors that may have an impact on political stability. Mexico's current condition is compared with that of Guatemala and Nicaragua for each point. The remaining 12 variables are not examined because they did not show variation and, therefore, cannot be used as indicators.

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**Guatemala and Nicaragua:
Conditions Before the Quake**
Guatemala

The political order in place at the time of the 1976 earthquake was based on an informal coalition of military officers, wealthy businessmen and plantation owners, and some rightwing middle-class politicians. This group, which dominated Guatemalan politics for most of this century, was overwhelmingly conservative and opposed to social, economic, and political reform. One of the primary concerns of the succession of military or military-backed regimes that ruled Guatemala after 1954 was the largely rural insurgency that had been active sporadically since the early 1960s. As the Army extended its presence into isolated guerrilla-infested areas, it could justify use of national resources and foreign military assistance for counterinsurgency efforts, to the exclusion of economic development. [redacted]

Prior to the quake, Guatemala was undergoing a slow process of political moderation to stem the tide of urban political violence of the early 1970s that was marked by the persecution of labor unions and middle-class critics. President Kjell Laugerud Garcia came under increasing criticism from the right for his tolerance of unions and his support for cooperatives. The quake struck just as Guatemala was beginning to feel the negative effects of the sharp increase in world oil prices and reduced revenues for traditional exports. [redacted]

Nicaragua

Some 10 months before the 1972 quake, President Anastasio Somoza's National Liberal Party (PLN) defeated the opposition Conservative Party (PC) by almost a 10-to-1 vote margin. Based on a pre-election agreement to circumvent a constitutional mandate limiting the President to one term, a triumvirate—consisting of two members of the winning PLN and one from the losing PC—was formed to rule the country. This arrangement left the opposition virtually powerless because the junta answered to Somoza, allowing him to maintain control without the title of president. [redacted]

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Opposition parties found it difficult to contend with Somoza's divide and conquer tactics. Formation of the three-member junta, for example, two of whom were Somoza's supporters, fostered another split in the opposition. Its leaders disagreed over joining an alliance in which they would lack power but add to the legitimacy of the regime. [redacted]

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Since the mid-1960s, Nicaragua had also enjoyed some degree of economic stability. Inflation averaged about 2.5 percent a year from 1965 to 1971, and the country's balance of payments was stable, with the public sector playing only a modest role in the economy. [redacted]

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25X1**Factors to Watch****Corruption in the Relief Process (Variable A)**

One notable outcome of the earthquake in Nicaragua was the exposure of corrupt practices during relief efforts, which, according to academic studies, contributed to a decline in the stability of the Anastasio Somoza regime. Initially, Somoza used the disaster to consolidate political power by brushing aside the figurehead three-man junta, which then ruled the country. He also assumed the position of head of the

National Emergency Committee. According to academic studies and press accounts, the former President profited from reconstruction efforts by purchasing large parcels of quake-devastated land in Managua and constructing high-rise apartment buildings on several of the sites. There were widespread rumors at the time, which we generally accept as accurate, that Somoza appropriated relief funds and

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never spent them on earthquake reconstruction. Press reports indicate that some relief money was spent on the luxury apartment buildings and land speculation, rather than on low-income housing. In a book on Somoza's life, a reporter who knew the family since 1952 reports that half of the \$32 million in US Government funds sent to Nicaragua were never registered in the Nicaraguan treasury. According to the biography, no one in authority was concerned with finding an explanation for the discrepancy. [redacted]

In contrast to Nicaragua's efforts, which highlighted weaknesses in the political system, Guatemala's performance in the aftermath of its quake was characterized by little disaster-related corruption. Then President Kjell Laugerud Garcia, possibly mindful of Nicaragua's experience, kept corruption to a minimum by appointing generally honest administrators, according to published accounts. The government's relief effort, coordinated by the National Reconstruction Committee and administered by the military, was honest and efficient, these sources report. The Army, although in control of the relief effort, allowed foreign contributors to distribute their own relief supplies, reinforcing a sense of Guatemalan honesty in the international community. Some antigovernment protests were directed against the uneven or slow distribution of disaster aid, but they were neither widespread nor serious enough to raise doubt about the efficiency of the national relief effort, according to press reports. [redacted]

Mexico, in our judgment, is pursuing a course that more closely follows the Guatemalan example, suggesting that quake-related corruption is unlikely to influence future political stability. Although some business leaders, opposition members, and survivors have complained of improprieties in the relief effort, we have no clear evidence to confirm or deny a major misuse of emergency aid for personal gain. The lack of an overall public perception of large-scale corruption, however, seems to suggest that this important issue has not become a threat to stability. The few reports of manipulation of relief funds center on transfer of these funds into the operating budgets of government ministries. This involves the redirection of

relief funds, but not for personal gain, as was the case in Nicaragua. Moreover, a variety of press reports indicate that the de la Madrid administration is requiring detailed accounting of quake reconstruction money. [redacted]

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The US Embassy in Mexico City has noted that the potential for official corruption in the relief effort exists but is unlikely to become a stability-threatening problem for several reasons:

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- Much of the cash aid has been donated directly to private organizations or is being administered by the donors themselves.
- The administration has announced steps to ensure accountability.
- There have been fewer allegations of official corruption under de la Madrid than under his immediate predecessor.

Most charges of corruption have been tied to individual acts by low-ranking officials and military personnel. [redacted]

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[redacted] military personnel assigned to safeguard private possessions located in abandoned buildings occasionally participated in looting. Even these reports, however, occurred only during the first few weeks of the disaster and since that time there have been few—if any—new charges of such misbehavior.

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Although, in our judgment, large-scale official corruption is remote, the greatest potential, and therefore an area to watch, lies in the government's expropriation of quake-damaged property in the capital. [redacted]

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[redacted] a

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few critics have already argued that the properties, originally seized to resettle earthquake victims and defuse the threat of civil unrest, were selectively chosen, ignoring land held by influential owners. Mexican officials could use the decree to gain control of property for personal profit, but there is no evidence that this has yet occurred. Although the opportunity for fraud remains, such government expropriation is still popular with the general populace, according to the Embassy. [redacted]

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Portion of Affected Populace Assisted (Variable B)

Nicaragua's relief effort alienated large portions of the society by incorporating favoritism and class bias in the distribution of emergency supplies and reconstruction planning. According to a university study, families of National Guard members and government employees had preferential access to relief supplies, which added to public discontent. Even businessmen and professionals, traditionally supportive of the President, were dismayed by Somoza's profiteering during the disaster's aftermath, according to published accounts. A variety of academic and press sources report only a small group consisting of members of established elites truly benefited from the quake assistance, although about 75 percent of the residents in the nation's capital were left homeless. [redacted]

In contrast, various reports note most of those affected by Guatemala's quake felt the positive results of the reconstruction effort, and Laugerud was successful in using disaster aid to improve the general condition of the nation. Press reports note that spending, while admittedly uneven, went toward repairing housing, transportation, and other facilities, primarily in the hard-hit rural areas. The government planned an initial housing reconstruction program financed by \$17 million in foreign loans, two-thirds of which was designated for rural areas. Unlike in Nicaragua, however, the homeless in Guatemala benefited significantly from reconstruction efforts. [redacted]

The reconstruction effort in Mexico is somewhat lacking in direction and is achieving mixed results. Nonetheless, most people affected by the quake should eventually receive some benefits, in our judgment, minimizing public discontent with the administration. Last November, de la Madrid announced a public housing program in which \$120 million would be spent over the following 15 months to rebuild homes damaged in the earthquakes. The government news agency reported that the program would benefit 41,750 families left homeless. If fully implemented, this program would house most of those the quakes left homeless and limit threats to stability from public discontent. Much will depend, however, on whether the government delivers on its promises and does so expeditiously. Meanwhile, political opposition groups will continue to attempt to exploit the plight of the homeless for political advantage. [redacted]



Figure 3. Local citizens assist in Mexican relief efforts. [redacted]

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Figure 4. Cleanup operations begin in Mexico City. [redacted]

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The government's land expropriation also exemplifies the Mexican Government's desire to placate victims of the disaster, while demonstrating the difficulties it has experienced in implementing its plans. [redacted]

[redacted] the sudden expropriation of private properties in October was intended to defuse the threat of social unrest that some officials feared was "hours away" in two suburbs of Mexico City. Although, in our judgment, it is unlikely that the capital was ever that close to major uprisings, this display of concern for the poor and the homeless is indicative of Mexico's desire to monitor and dampen public discontent. The haste with which this action was taken also highlights the difficulties the government has had in attempting to meet the needs of the affected populace. Numerous parcels of land unaffected by the quake were included among the 7,000 properties originally seized. A special panel was established to review these problems and some properties were removed from the expropriation list, but complaints continued. This action also shook the confidence of Mexican businessmen when they were initially told they would be compensated over a 10-year period, but only if the budget allowed it. In early December, Mexico City announced a more immediate compensation package, financed by the sale of bonds, after the realization that the loss of business confidence was a contributing factor to increased capital flight. [redacted]

Ability To Handle the Quake (Variable C)

In the case of Nicaragua, the capabilities of the government were stretched beyond their limits, and the inadequacies were apparent to all. A large portion of Managua burned as long as 15 hours after the quake struck and continued to smolder for several days, according to press accounts of the disaster. Three weeks after the quake, some essential services were gradually being restored. The press also noted that it was American, not Nicaraguan, experts who repaired the capital's water, electricity, and communications systems. Although Somoza was originally skillful in using the disaster to consolidate his political power, his relief effort was viewed as inept and

sometimes cruel by the lower- and middle-class victims [redacted] the distribution of relief supplies could not take place without the signature of a member of the Somoza family, so all activity would occasionally stop. [redacted] the government held up food supplies in an effort to force out some 150,000 people who refused to leave the devastated capital. [redacted]

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Somoza's administration was blamed for the rising inflation that resulted from increased energy and food costs in the quake's aftermath. Published accounts note that increased labor militancy on the part of construction and textile workers in 1973, as well as strained economic growth, played a part in alienating many in the business community. [redacted]

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By all accounts, the Government of Guatemala was viewed as very skillful in its handling of the earthquake. One day after the disaster, water and electricity were reconnected in the lightly damaged middle-class neighborhoods, and some shops reopened, according to press reports. The bulk of reconstruction spending went toward public services, such as roads, water systems, and buildings, mainly in the hard-hit rural areas. Almost half the housing for the poor was destroyed in the capital and over 1 million (one-sixth of the population) left homeless countrywide, but the government was swift in its rebuilding efforts. As a result, increases in the price of food after the quake were not blamed on Laugerud, but seen as due to scarcity caused by hoarding and speculation, according to independent open sources. Nonetheless, there was noticeable criticism of the government and an increase in strikes that were, in part, related to the economic and social dislocations caused by the disaster. In our judgment, however, the demonstrations were not directed against the government's reconstruction efforts but primarily against Guatemala's generally poor economic conditions. [redacted]

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Both ordinary citizens and opposition leaders have criticized Mexico's handling of the relief effort [redacted]. The administration's actions highlighted weaknesses in the government that could pose a threat if Mexico were not trying to correct its mistakes.

[redacted]

[redacted]. A public opinion poll was published five weeks after the quakes by the Mexican Institute for Public Opinion (IMOP), one of Mexico's most respected and reliable polling firms, according to the US Embassy. The IMOP survey of a representative sample of 1,000 Mexico City residents found that 56 percent of the respondents thought the reaction of the authorities was not timely, and 57 percent felt it was inadequate. At the same time, however, 73 percent rated the government's overall response as fair to excellent. These results suggest that, while discontent may have risen somewhat as a consequence of the quake, it is not of stability-threatening proportions. [redacted]

Unique Mexican Developments

During our analysis of the earthquakes, we noted three developments that were unique to the Mexican disaster as contrasted with the Guatemalan and Nicaraguan examples. They were the comparatively lesser extent of destruction, the generally supportive role of the military, and the postquake formation of public, self-help groups. The first two developments clearly are generally favorable. The spontaneous formation of popular groups, however, could become a threat to the ruling party's grip on power if the government's awareness of and attention to this potential problem wanes. These points are examined in more detail in the following sections. [redacted]

Level of Destruction

The quake that struck Nicaragua in December 1972 was devastating. The official death toll reached 10,000, but private estimates went as high as 20,000. Official announcements and press reports estimate that more than 30,000 people were injured and damage was \$1 billion, with a reconstruction cost of

almost \$1.5 billion. Nationwide, 10 percent of the industrial capacity, 50 percent of the commercial capacity, and 70 percent of the government facilities were inoperative, according to geographers, sociologists, and political scientists who studied the quake.

[redacted]

In the capital, Managua, the extent of the destruction was even more dramatic, covering 589 city blocks—a 6-square-kilometer area. Of the population estimated at 420,000, at least 4,200 were dead and 16,800 were injured. The press noted that only 20 percent of the city's structures were intact, and nearly 75 percent of the population were homeless. Fifty percent of those previously employed were jobless. Although construction jobs increased in the wake of the quake, they absorbed only half the positions lost elsewhere, according to an academic source. [redacted]

Many observers consider the earthquake that hit Guatemala an even worse disaster, at least in human terms. More than 25,000 people were killed and more than 74,000 injured. Three hundred villages suffered extensive damage and many were completely destroyed. Over 1 million people were left homeless countrywide and President Laugerud estimated damage at \$1 billion. A missionary involved in relief efforts in both countries had no doubt that the extent of the destruction and loss of life were greater than in Nicaragua. [redacted]

There was little damage to Guatemala's economy, however, and the capital, Guatemala City, survived with relatively less damage than Managua. Only 1,000 people died in the capital, compared with 13,500 of the nation's dead from a band of settlements in the adjacent department of Chimaltenango, according to press reports. Twenty percent of all buildings in Guatemala City were destroyed, although most hotels, office buildings, and homes in upper-class neighborhoods survived. Press reports also note that the collapse of 60,000 houses in the capital left 250,000 people, or 17 percent of the city's population, homeless. [redacted]

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Table 2
Devastation Comparison

	Year	Killed	Injured	Homeless	Damage (billion US \$)	Damage as a Percent of GDP	Damage in the Capital City	
							Homeless ^a	Destroyed ^b
Nicaragua	1972	> 10,000	> 30,000	> 300,000	1	16.5	75	80
Guatemala	1976	> 25,000	> 74,000	1,000,000	1	22.9	17	20
Mexico	1985	> 10,000	30,000	> 100,000	3.5	3.4	<1	<2

^a Percentage of people in the capital city left homeless.

^b Percentage of the capital city destroyed.

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Compared with these quakes, the damage in Mexico would have to be considered relatively minor, making the disaster less of a threat to stability (see table 2). Less than 2 percent of Mexico City was destroyed, according to Embassy and press reports. The Embassy estimates that, of the approximately 1 million buildings in the capital, only 3,000 were damaged. Of these, just over one-third were demolished or considered beyond repair. The homeless amounted to less than 1 percent of the city's population. Areas outside the capital were less severely hit, even though the damage in at least a half dozen central and western states was still significant. []



Figure 5. The Hotel Regis was one of several hotels destroyed in the Mexican earthquake. []

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Little damage was done to the country's industry and manufacturing, although some 1,300 small-scale textile plants in the downtown area of Mexico City were destroyed. The country's petroleum facilities, largely concentrated in southeastern Mexico, were virtually untouched. While the number killed and injured—10,000 and 30,000, respectively—is similar to Nicaragua's casualties, population differences make the impact less severe in Mexico. And, when damage estimates are considered as a part of a country's GDP, Mexico is again in a significantly more positive position. []

The relative lack of damage did not prevent Mexico from attempting to exploit the quakes to strengthen its case for financial assistance. The government successfully used the disaster to obtain a six-month deferment of a \$950 million principal payment due in installments on 1 October and 4 November 1985. Beyond this, however, creditors were unwilling to provide additional debt relief. In their estimation, the damage was not sufficient to justify most Mexican requests. The quakes have thus ceased to be a justification for Mexico's inability to pay creditors since the government now explains its financial gap as a result of decreased oil revenues. []

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The Role of the Military

The role of the military in maintaining order and its relationship with the civilian leadership is clearly tested during a natural disaster, and the Mexican and Guatemalan experiences were generally positive. By contrast, the quake in Nicaragua may have underscored the military leadership's support for Somoza, but it negatively highlighted its command structure and internal discipline. In the aftermath of the quake, public order dissolved. Many members of the National Guard based in Managua left to tend to their families, while some joined in the looting of the commercial sector, according to US Embassy reporting. Somoza could barely raise 100 men and, by his own admission, had to ask for all available troops from the rest of the nation to reconstitute the military and police forces in the capital. [redacted]

[redacted] Somoza retained the loyalty of his military leaders throughout the disaster, however, prefiguring the support he would later receive from them during the revolution that ended his reign. [redacted]

The response of Guatemala's military was immediate and effective—providing a positive example of its ability to maintain control. The government immediately declared a state of "national catastrophe," mobilized the Army and the police, and began relief efforts under the National Emergency Committee (NEC) headed by Defense Minister Fernando Romeo Lucas. The relationship between the government and the military was not a problem because a military leader ruled the country. Within hours of the earthquake, the NEC was urging residents of the capital to bury their dead to avert an epidemic, according to independent press reports. Food, shelter, and other relief supplies began arriving the following day. To help maintain control, Laugerud ordered soldiers to shoot looters on sight. Press reports indicate that at least seven looters were shot and little subsequent looting or public disorder occurred in the capital.

[redacted]

If civilian authorities had allowed the Mexican military to fully institute its disaster plan, Mexico City's response to the earthquakes would have been even closer to the reaction in Guatemala, in our judgment. The Mexican armed forces immediately began imple-

menting their plan and maintained their command and control structure throughout the emergency, a positive sign of the military's abilities, if called upon by the government, to assure stability in a civil crisis. Within minutes after the quake, the Navy deployed over 1,800 personnel, including six admirals, to help in the relief effort [redacted]. Three thousand troops were on the scene within an hour. The military was soon relegated to providing support to the civilian effort, however, after an ad hoc civilian coordinating committee, headed by Mexico City Mayor Aguirre, assumed control at the President's direction. [redacted]

[redacted]

Although we judge that the military remains steadfastly loyal to the government, future incidents similar to or more severe than this might increase strains to the breaking point. The government, for its part, clearly recognizes the need for a supportive military, and has taken a number of steps to smooth its ruffled feathers. [redacted]

[redacted]

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New Popular Organizations

One of the greatest concerns of the Mexican Government, which did not fully develop in Nicaragua or Guatemala, has been the spontaneous formation of new popular organizations in the aftermath of the earthquake. [redacted]

high-ranking officials have become increasingly worried because these groups have filled a vacuum created by the failure of the traditional political parties to respond to the disaster and they could grow to become a threat to stability. We believe alarm on the part of these officials may be premature, however. According to a study of disaster responses by a sociologist at the University of Denver, formation of such groups is a natural and expected response to a disaster of this magnitude. The organizations form with a specific goal—some type of relief—and usually disappear within a short period following the emergency as the immediate concerns of the disaster fade. The US Embassy in Mexico City reports that many of these groups have already begun to dissolve, and those that remain pose little threat to the government. The government's frequent reporting on and monitoring of these groups virtually ensures that they will not become a threat to future stability, in our judgment.

[redacted]

[Large redacted block containing several smaller redacted boxes]

Outlook

The de la Madrid government has done a sufficient job, in our judgment, to prevent instability arising as a direct result of the earthquake. In light of additional considerations, particularly the relative lack of damage, Mexico is almost certainly in a better position than Guatemala as it goes through the postquake period. The government has also shown adequate concern for monitoring quake-related events; reports to the President and other government leaders on these activities should give the government notice of potential destabilizing factors and provide time for the leadership to react. [redacted]

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Although Mexico will continue to face other acute problems, particularly economic, the disaster by itself should not greatly exacerbate these existing difficulties, in our judgment. While we consider the direct risk of instability from the quake small, there are several indicators that should be regarded as warning signs of an increased threat. These include:

[redacted]

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- Failure to follow through on reconstruction efforts, particularly housing for quake victims.
- Additional civilian usurpation of what the military considers its role, or military disaffection with civilian leadership.
- Increased activity from the public self-help groups, or the emergence of a charismatic leader from among them, rather than the expected fading away of these organizations. [redacted]

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Appendix A**Complete Country Survey**

The following is a listing of the political instability variables used in this study on the possible impact of earthquakes:

Level of Alienation

A. Was the government viewed as skillful or inept in dealing with the disaster?

1. Very skillful
2. Somewhat skillful
3. Neither skillful nor inept
4. Somewhat inept
5. Very inept

B. Did government relief efforts associated with the quake benefit a small group or the entire affected population?

1. Entire population felt helped
2. Most were helped
3. Middle class and above were helped
4. Few were helped
5. Only elites were helped

C. Was the government's handling of the disaster used by the ruling party as an example of success or by the opposition to show failures?

1. Complete government success
2. Some government success
3. Not used by government or opposition
4. Some government failure
5. Complete government failure

Ruling Elite Cohesion

D. Did conflict increase or decrease among the groups that make up the ruling elite or between ruling and supporting elites as a result of the earthquake?

1. Tremendous decrease in conflict
2. Noticeable decrease
3. No change
4. Noticeable increase
5. Tremendous increase

E. How did senior personnel in the military and security services view the actions or policies of the civilian leadership after the quake?

1. Very pleased by civilians
2. Somewhat pleased
3. Indifferent
4. Somewhat displeased
5. Very displeased

F. Did the government win or lose in the major elections after the quake?

1. Substantially more victories
2. More victories
3. No changes
4. More losses
5. Substantially more losses

Government Repression

G. Did the government introduce reforms or crack down on the people as a result of the quake?

1. Numerous reforms
2. Some reforms
3. No change
4. Some crackdowns
5. Numerous crackdowns

H. Was there a change in government repression as a result of the earthquake?

1. Tremendous decrease
2. Noticeable decrease
3. No change
4. Noticeable increase
5. Tremendous increase

I. Was there a change in reasonable concessions, without appearing weak, on the part of the government?

1. Tremendous increase
2. Noticeable increase
3. No change
4. Noticeable decrease
5. Tremendous decrease

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Opposition Activity

J. Was there an increase in the strength of opposition groups or a formation of new groups as a result of the earthquake?

(Same scale as H)

K. Did opposition forces receive additional aid from foreign groups as a result of the quake?

(Same scale as H)

L. Were demonstrations/riots/protests increasing in frequency, scope, or scale as a result of the earthquake?

(Same scale as H)

M. Was there growing sympathy for the demonstrators/rioters from the people?

(Same scale as H)

N. Was there growing criticism of the government from the people, media, middle class, workers, or business not present before the earthquake?

(Same scale as H)

Economic Changes

O. Were there sudden changes in food, energy, or housing prices as a result of the earthquake?

(Same scale as H)

P. Were there changes in foreign aid and investment as a result of the earthquake?

(Same scale as I)



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Appendix B

Multidimensional Scaling

Multidimensional scaling requires measurement of the similarity between every pair of objects (in this case, quake-related variables). The measurements used in this study are euclidian distance matrices. Table 3 is an example of such a matrix. It shows the computed euclidian distances between each pair of variables on the questions relating to quake responses in each country. The distances in the matrix represent degrees of similarity between each pair of variables.

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The smaller the distance value, the greater the similarity between the two variables on the responses in question. Thus, H and M show the greatest similarity (0.0); conversely, A and P show the least similarity (1.000). The multidimensional scaling program takes this information and depicts it graphically in terms of distances between the objects. Thus, the data shown in table 3 are depicted visually in figure 2. As in the euclidian distance matrix, the H and M variables are on the same position and the A is farthest from P.

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The program produces the graphs by first placing the objects in a space of N dimensions and replicating the distances between each pair of objects as shown in the euclidian distance matrix. It finds the most satisfactory configuration by starting with a random configuration and moving all the points a bit to decrease the "stress," a measure of "goodness" of the solution. This stress value is at a minimum for the best solution and increases sharply when too few dimensions are used. This procedure is repeated over and over until some stopping criterion is reached. A guideline developed for interpreting stress is as follows:

Excellent	0.000 to 0.100
Good	0.101 to 0.200
Fair	0.201 to 0.400
Poor	0.401 to 1.000

In all euclidian distance matrices produced during our analysis, the stress value was always well within the excellent range.

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Table 3
Multidimensional Scaling Matrix for Figure 2

	A	B	C	D	E	F	G	H
A	0.0							
B	0.293	0.0						
C	0.293	0.239	0.0					
D	0.535	0.561	0.561	0.0				
E	0.561	0.632	0.676	0.293	0.0			
F	0.447	0.338	0.414	0.293	0.414	0.0		
G	0.756	0.655	0.655	0.338	0.561	0.378	0.0	
H	0.775	0.717	0.717	0.293	0.535	0.414	0.169	0.0
I	0.737	0.676	0.717	0.293	0.414	0.338	0.293	0.239
J	0.655	0.632	0.676	0.169	0.338	0.338	0.293	0.239
K	0.632	0.609	0.609	0.239	0.378	0.293	0.338	0.293
L	0.655	0.535	0.586	0.293	0.478	0.239	0.169	0.239
M	0.775	0.717	0.717	0.293	0.535	0.414	0.169	0.0
N	0.632	0.561	0.609	0.239	0.378	0.293	0.239	0.293
O	0.655	0.535	0.586	0.293	0.478	0.239	0.169	0.239
P	1.000	0.956	0.956	0.561	0.676	0.632	0.507	0.414

	I	J	K	L	M	N	O	P
I	0.0							
J	0.239	0.0						
K	0.169	0.293	0.0					
L	0.239	0.239	0.293	0.0				
M	0.239	0.239	0.293	0.239	0.0			
N	0.293	0.169	0.338	0.169	0.293	0.0		
O	0.239	0.239	0.293	0.0	0.239	0.169	0.0	
P	0.338	0.535	0.378	0.535	0.414	0.609	0.535	0.0

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