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**War, Hunger, and Displacement:  
An Econometric Investigation into  
the Sources of Humanitarian Emergencies**

E. Wayne Nafziger and  
Juha Auvinen

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**WAR, HUNGER, AND DISPLACEMENT:  
AN ECONOMETRIC INVESTIGATION INTO  
THE SOURCES OF HUMANITARIAN  
EMERGENCIES**

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September 1997

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## ABSTRACT

This paper uses econometric methods and case-study evidence to examine the political economy of complex humanitarian emergencies, multidimensional crises characterized by warfare, state violence, disease, hunger, and displacement. We emphasize that economic variables often become salient through relative deprivation, the actors' perception of social injustice from a growing discrepancy between goods and conditions they expect and those they can get or keep. Tangible factors such as a marked deterioration of living conditions are conducive to socio-political discontent that may be mobilized into political violence. Our econometric analysis indicates that stagnation and decline in real GDP, a high ratio of military expenditures to GNP, a tradition of violent conflict, and less clearly, high income inequality and slow growth in food production per capita, are sources of emergencies. Also inflation and low levels of IMF funding are associated with emergencies, although the direction of causation may be opposite. Two expected variables – commodity terms of trade and official development assistance per capita – are not associated with emergencies. Further elaboration of the findings shows how slow economic growth, the failure of food and agricultural development, high income concentration, rapid inflation, lack of external adjustment, the threat of slow growth and adverse distribution to elites, higher military expenditures, and authoritarian regimes increase the vulnerability of developing countries to humanitarian emergencies.



## I INTRODUCTION

Is genocide a universal human phenomenon? Or is mass murder an aberration of the Holocaust? Väyrynen (1996) and Katz (1996:19-38) observe that the Holocaust is unique, killing 6 million people, two-thirds of European Jewry. But Prunier (1995:264-5) contends that for a three month period the 800 thousand estimated deaths (11 per cent of the population) from genocide in Rwanda April-July 1994 were perhaps the highest non-natural casualty rate in history.

Rummel (1994) analyzes democide, that is, the murder of any person by a government; the murder may be because of the victims' indelible group membership (genocide), politics, or for other political purposes (politicide). He lists the Soviet Union, Communist China, Nazi Germany, and 15 other instances in the twentieth century (as of 1987) in which governments intentionally killed at least one million people. Some 170 million people were killed through democides, compared to about 30 million people in armed conflict. Most of these hundreds of millions of people were victims of humanitarian emergencies.

We define a complex humanitarian emergency as a man-made crisis, in which large numbers of people die and suffer from war, physical violence (often by the state), disease, hunger, or displacement (Väyrynen 1996).<sup>1</sup> To the extent that a complex emergency includes disease and hunger, the causes of an emergency will vary from those of a revolution or other internal political conflicts (see the discussion of the food crisis). Indeed, the early stages of famine and other forms of complex humanitarian emergencies are not easily distinguishable from endemic poverty (Green 1986:288-310);<sup>2</sup> war and emergency may merely entail a deepening of

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<sup>1</sup> The two necessary conditions for a complex emergency are: (1) large numbers of people dying, suffering, or being displaced from war or massive physical violence, *and* (2) large numbers of people being victims of disease, hunger, or population displacement.

<sup>2</sup> We conducted correlation analyses with different lag structures on the four dimensions of complex humanitarian emergencies and found that wars may be more conducive to refugee flows and sluggish calorie supply growth than vice versa. Refugee flows seem to be conducive to slow calorie supply growth rather than vice versa. However, largely due to the invariability of the indicators, particularly those of deaths and refugee flows, the differences between the lag and lead correlation coefficients are not great.

conflict and exploitation existing during 'peacetime' (Keen 1996). Thus, the determinants of poverty and underdevelopment (discussed comprehensively in Nafziger 1997) overlap substantially with the causes of complex humanitarian emergencies. Still, this paper does not repeat the vast literature on economic development, but instead focuses on a different literature, which will, however, also enhance our understanding of underdevelopment.

Our econometric analysis identifies twenty-four countries with humanitarian emergencies from 1980 to 1995 (table 1). At the peak of the Sudanese famine, partially man-made as argued below, during nine weeks in June-August 1988, 7 per cent of the population of the camp in Meiram, southern Kordofan died *each* week (Keen 1994:76). Even in 1995, Sudan had 450 thousand refugees, while in the same year Afghanistan and Rwanda each had more than one million refugees (Väyrynen 1996:19).

According to the International Federation of Red Cross and Red Crescent Societies (*World Disasters Report 1994*), mortality from all non-natural disasters increased from 1968 to the early 1990s. The United States Mission to the United Nations (1996:3-4) estimates an increase in mortality and population displacement<sup>3</sup> from humanitarian emergencies from 1983 to 1994, despite the end of the Cold War. To be sure, the United Nations High Commissioner for Refugees (1995:244-55) warns: 'Serious statistical problems .... arise in large, complex, and rapidly changing emergencies .... A life and death struggle for food and influence is hardly ever compatible with accurate enumeration.' Still, the increase in mortality and displacement from man-made disasters is faster than the growth in population.

This paper analyzes the economic sources of humanitarian emergencies.<sup>4</sup> By stressing the political economy of complex humanitarian emergencies, in which economics and politics interact, we depart from the simple primordialist model of ethnic conflict, based on differences of language, race, tribe, religion, national origin, or some other cultural sense of identity between disputants. According to this model, ethnicity is considered the primary factor explaining a complex humanitarian emergency (Rabushka

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<sup>3</sup> The US Mission estimates an increase in the number of refugees and internally displaced people from 12 million in 1983 to 44 million in 1994.

<sup>4</sup> Or in probabilistic terms, the purpose of this paper is to examine the economic variables that increase the likelihood of humanitarian emergencies.

and Shepsle 1972:8, 20). Horowitz (1985:12-15), for whom ethnic conflict is the centre of politics, remarks that for social scientists 'ethnic conflict has been viewed through the lenses of categories that tend to blur the phenomenon by treating it as part of something else.' That something else is a product of 'dogma' that includes 'the supremacy of social class ... overtak[ing] ethnic interests' or the position 'that the competition for scarce values and material goods is exactly what propels people to see themselves as distinct ethnic groups, whose interests conflict with those of other ethnic groups'. For Horowitz (1985:17), 'ethnic groups in conflict do not stand in a hierarchical or ranked relationship to each other,' but '[r]ather, they are parallel or unranked groups, divided by a vertical cleavage.' In contrast to Rabushka-Shepsle and Horowitz, the political economy model views ethnic conflict, not as primordial or an independent variable, but shaped by economic development or collapse, income and asset distribution, structural economic change, and their accompanying socio-political changes.

This paper is constructed as follows: in section II we set out our hypotheses on the sources of complex humanitarian emergencies. Section III presents the result of our quantitative statistical analysis. Using a pool of 124 less developed countries in 1980-95, we apply different types of econometric methods to unveil the associations between complex humanitarian emergencies and their hypothesized sources. In the remaining sections we discuss our findings in more detail and develop our arguments on how economics and politics interact in generating complex humanitarian emergencies. We support our arguments with case-study evidence along the way.

## **II VARIABLES**

Most literature uses geopolitical and ethnic approaches to explain the recent increase in complex humanitarian emergencies. While relevant, these approaches are incomplete in analyzing the factors that are pivotal in shaping and triggering conflicts in developing countries. What follows is a conceptualization of the main political economy variables that lie behind the increase in humanitarian emergencies in the 1990s. Broadly speaking, we expect the following sets of factors – stagnation and decline of income, high inequality, falling real aid, shifts in wealth distribution during adjustment programmes, the interaction of income and adjustment with

elite interests, the share of military expenditures in GNP, and tradition for violent conflict – to contribute to complex humanitarian emergencies.

## 2.1 Stagnation and decline in incomes

Despite political conflicts associated with Quebec, Northern Ireland, and the Basque provinces, humanitarian disasters are rarely found among high-income countries, unless you include the roughly 20,000 people killed yearly, mostly by guns, in the United States' cities. Moreover, complex humanitarian emergencies are only found in low- and middle-income (that is, developing) countries,<sup>5</sup> establishing a threshold above which emergencies do not occur (Stockholm International Peace Research Institute 1996:13-30; Holsti 1991:274-78; Jung, Schlichte, and Siegelberg 1996:50-54).

A factor common to 12 of the 15 countries that Rummel (1994) indicates have had more than one million democides in the twentieth century, is stagnation and protracted declines in average incomes during the period before democide. These 12 include early twentieth-century feudal Russia, the Soviet Union during the 1917 revolution and War Communism, the imperial dynasty and republican government just before Chiang Kai-shek's regime, China's Kuomintang regime before Chinese Communist rule, post-World War I pre-Nazi Germany, pre-1975 Cambodia, pre-1945 Vietnam, the declining Turkish Ottoman state before World War I, World War II Poland and Yugoslavia, and North Korea. Three cases, Pakistan since independence (Nafziger 1994:143-65), Japan (1936-45) (Nafziger 1995), and pre-revolutionary late nineteenth-century Mexico, in which some one million Indian families lost their land, are exceptions, with positive per-capita growths but high income inequalities.

We use the concepts of relative and absolute deprivation to depict the effects of economic growth and stagnation on humanitarian emergencies. For the theory of relative deprivation, economic decline is an important variable in explaining political conflict. Relative deprivation is the actors' perception of social injustice from a growing discrepancy between goods

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<sup>5</sup> The World Bank (1996d:188-9) divides countries into four groups on the basis of per capita GNP. In 1994, these categories were low-income countries (less than \$750), lower-middle-income countries (\$750-2,900), upper-middle-income countries (\$2,900-8,500), and high-income countries (more than \$8,500). While the margin of error is substantial and the boundary between category rises each year with inflation, few countries shifted categories between 1974 and 1994 (Nafziger 1997:9-37).

and conditions they expect and those they can get or keep. Relative deprivation spurs social discontent, and sometimes anger, which provides motivation for potential collective violence (Gurr 1970). Among the various components of emergencies, war and violence have major catalytic roles, 'add[ing] to social disruption and political instability, undermin[ing] economic activities, spread[ing] hunger and disease, and fuel[ing] refugee flows' (Väyrynen 1996:19).

Relative deprivation is essentially a diachronic concept: people feel deprived of something they had, but subsequently lost, or when others have gained relative to them. Consequently a short-term income reduction is more important than protracted income decline or stagnation in analyzing war and conflict dimensions of complex humanitarian emergencies. Indeed one who grows accustomed to being destitute may not feel frustrated at all. Deterioration of living conditions over a prolonged period thus entails absolute rather than relative deprivation. Although low or declining average incomes can become a source of relative deprivation in comparison to neighbouring countries or to incomes from an earlier period, aggression is unlikely to result from such an abstract and remote source. Tangible and salient factors such as a marked deterioration of living conditions, especially during a period of high expectations, are more likely to produce socio-political discontent that may be mobilized into political violence (cf. Davies 1962:5-19).

Only a portion of violence, however, results from insurgent action. In fact, Holsti (1997:34-35) demonstrates that the policies of governing elites are at the root of most humanitarian emergencies. As pointed out below, slow or negative growth puts more pressure on ruling elites, reducing the number of allies and clients they can support, undermining the legitimacy of the regime, and increasing the probability of regime turnover. To forestall threats to the regime, political elites may use repression to capture a greater share of the majority's shrinking surplus. These repressive policies may entail acts of direct violence against or withholding food and other supplies from politically disobedient groups (Keen 1994; Duffield 1994; and de Waal 1989; as discussed below). Moreover, repression and economic discrimination may generate relative deprivation and trigger socio-political mobilization on the part of the groups affected, leading to further violence and worsening the humanitarian crisis.

Also absolute deprivation can contribute to a complex humanitarian emergency. Protracted economic stagnation can increase the probability of non-conflict components of a complex emergency, that is, population displacement, hunger, and disease. As the literature on economic behaviour under situations of extreme distress shows, economic Darwinism tends to become dominant when food, resource, and employment scarcity becomes chronic. Under such circumstances, Darwinist behaviour tends to prevail over the behaviour dictated by the legal norms and social conventions regulating access to resources and respect of property rights, and by the moral and judicial condemnation of theft, robbery, and expropriation. Protracted stagnation is also likely to weaken the moral sentiments of solidarity vis-à-vis weaker groups and redistribution in their favour. Protracted stagnation may also spur elites to violently expropriate the assets and resources of weaker social communities, particularly if political, ethnic, or class tensions already exist (as in the case, discussed below, of Sudan in the 1980s).

The relationship between stagnation, economic Darwinism, and the breakdown of social cohesion needs to be qualified on several counts. Obviously, countries with higher initial incomes per capita can withstand longer periods of stagnation without experiencing major social tensions and may be able to introduce the necessary political or economic reforms to address the sources of the stagnation. Also, as the situation of Tanzania suggests, economic stagnation within a context of 'shared poverty' may not be inherently destabilizing at the local level. In addition, of major relevance is the effect of stagnation on the provision of basic needs and infrastructure, and the impact of these factors on social and political integration. And finally, repression and political control may, at least temporarily, avoid the violent manifestations that could otherwise emerge if economic destitution continues unabated.

The causes and accompaniments of economic stagnation or decline vary enormously. Two factors that appear to be most frequently related to the explosion of humanitarian emergencies are international economic shocks and deterioration as well as the failure of agricultural development.

In developing countries, sudden external shocks and long-term deterioration in international economic position can contribute to stagnation or precipitous slumps. Abrupt shocks may include large shifts in terms of trade, falling real official development assistance or aid, and

interest-rate shocks (factors frequently observed in the early 1980s and 1990s), while protracted deterioration may include a long-run decline in commodity terms of trade, rising foreign protection, or the gradual exclusion from international capital markets and flows of foreign direct investment. For example, during its slow and negative per-capita growth, the sub-Sahara experienced declining commodity terms of trade (price index of exports divided by the price index of imports) – a fall of 52 per cent from 1970 to 1992 (or 38 per cent from 1980 to 1992). Sub-Saharan Africa's income terms of trade or export purchasing power, the commodity terms of trade times export volume, declined 46 per cent from 1970 to 1992 (or 29 per cent from 1980 to 1992) (Nafziger 1993:67-71). This substantial fall in export purchasing power and material levels of living made the sub-Sahara more vulnerable to political crises. As an example, declines in terms of trade (and aggregate income) exacerbated Nigeria's political vulnerability. From a peak in 1980, Nigeria's export purchasing power (or income terms of trade) fell 72 per cent in 1982 and 60 per cent in 1983, placing an unbearable burden on the newly re-elected, but corrupt, government of President Shehu Shagari, which was overthrown by the military (Nafziger 1993:67-69). Also in 1986-87 and in the early 1990s, Zambia's conflict with the IMF over eliminating maize meal subsidies, which contributed to urban riots and political instability, occurred after a decade of collapsing copper prices (1975-85) and several years when the annual debt service was almost one-half as much as export receipts (Auvinen 1990). While the distributive effects can vary, and some of the countries affected have been able to adjust, the depressive effect of these trends on weak economies, especially those difficult to restructure, are largely unavoidable.

Agriculture is a major component of GDP in low-income countries and a major contributor to the industrial and services sectors through increased food supplies, added foreign exchange, labour supply, capital transfer, and larger markets. Frequently the failure of food and agricultural development is a key element of a protracted stagnation or decline, and rising social tensions. As in several sub-Saharan countries, agricultural stagnation may be associated with factor market imperfections, delayed technological modernization, unfavourable government policies, obsolete agrarian structures, and slow institutional modernization. Declining rural productivity may not only contribute to increased economic Darwinism among severely impoverished rural populations, but may also spur rural-

urban migration, increasing urban unemployment and underemployment, political discontent, and humanitarian emergencies.

Agricultural development failure and international economic deterioration affect income and its distribution domestically by region, ethnic group, and class. This distribution affects social mobilization, which can set the stage for potential crises.

## **2.2 Income inequality**

The vulnerability of populations suffering deprivation from humanitarian emergencies is exacerbated if income concentration is substantial. Alesina and Perotti's (1996:1203-38) cross-sectional study of 71 less-developed countries (LDCs), 1960-85, finds that income inequality, by fuelling social discontent, increases socio-political instability, as measured by deaths in domestic disturbances and assassinations (per million population) and coups (both successful and unsuccessful). Severe social tensions leading to complex humanitarian emergencies may also arise under conditions of positive (even rapid) growth and expanding resource availability. High inequality can contribute to the immiseration or absolute deprivation of portions of the population, even with growth. Absolute deprivation during substantial growth was experienced, for instance, by Igbo political elites, dominant in Nigeria's Eastern Region, in 1964-65. The East lost oil tax revenues from a change in its regional allocation by the federal government, which ceased distributing mineral export revenues to regional governments.

Moreover, through the demonstration effect of consumption levels of the relatively well off, high income concentration increases the perception of relative deprivation by substantial sections of the population, even when these do not experience absolute deprivation. The risk of political disintegration increases with a surge of income disparities by class, region, and community, especially when these disparities lack legitimacy among the population. Class and communal (regional, ethnic, and religious) economic differences often overlap, exacerbating perceived grievances and potential strife.

The trends and policies leading to this type of high income inequality can be summarized as follows:

- *Historical legacies* (from colonialism or imperialism,<sup>6</sup> apartheid, failed past policies, and so forth), which have remained unresolved, are often a source of this inequality. Affluent classes and dominant ethnic communities use the accumulated advantages of the past – ready access to capital, greater information and mobility, superior education and training, privileged access to licences and concessions from government, and a lower discount of future earnings – to start enterprises, buy farms, and obtain government jobs in disproportionate numbers. Less affluent and influential groups are underrepresented in entrepreneurial activity, investment, and employment (Nafziger 1986). Moreover, even if current policies no longer discriminate against a particular social group, large and uncorrected differentials in the initial distribution of assets and opportunities lead, by sheer market forces, to growth patterns characterized by large, and rising, inequalities. The inability to rectify initial imbalances may therefore, over time, contribute to increasing conflicts.

- *Government policies* in distributing land and other assets, taxation, and the benefits of public expenditure, affect political and social cohesion. Included are policies that contribute to differential regional, communal, and generational opportunities in employment (especially in government), education, and the armed forces; the effects of these opportunities on regional, ethnic, and generational grievances; and the influence of these grievances on social mobilization and political protest. Another policy instrument is the access to financing by classes and communities during periods of major expansion of asset acquisition, such as indigenization, privatization, or outright expropriation.

- *Regional and ethnic economic competition* is associated with income disparities. Growing regional inequality and limited regional economic integration, often found in economic enclaves, can exacerbate ethnic and regional competition and conflict.

Regional factors contributing to conflict include educational differentials, regional and ethnic employment differentials, interregional revenue allocation formulas, and disaffection of minority language communities that lack government jobs because of examinations in majority languages. In Africa, interregional and interethnic opportunities for employment or

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<sup>6</sup> Nafziger 1988:35-64; Nafziger 1983:27-74; and Nafziger 1995:6-10, 66-84 discuss how colonialism and imperialism in Africa and Asia contributed to their underdevelopment and political instability.

asset acquisitions during the waves of indigenization measures of the 1960s and the 1970s, and privatization measures of the 1980s and the 1990s have been important sources of conflict (Nafziger 1996: 25-32).

### **2.3 Distributional shifts during adjustment programmes**

Adjustment and stabilization programmes, almost universal among developing countries during the 1980s and early 1990s, were mostly introduced in response to chronic macroeconomic imbalances and external deficits, often associated with negative or slow growth. These programmes are usually shaped by financing from and conditions set by International Monetary Fund (IMF) and World Bank loans of last resort. The programmes redistribute the timing and extent of costs and benefits among economic actors. The costs of most expenditure-reducing policies (including government employment cuts, removal of subsidies, increases in real interest rates, and the control of money supply) and of some expenditure-switching policies (such as real domestic-currency devaluation) tend to impose large welfare costs immediately, while their benefits emerge only after one to two years. Stabilization and adjustment programmes affect real wages and staple commodity prices, and may thus elicit the responses of the population groups affected (the poor and the organized middle class).

Stabilization and adjustment programmes affect the distribution of power within a country. Thus, in the first place, social conflicts may erupt during the early period of stabilization and adjustment, especially if there are few funds to support the income and social services of those hurt by the programmes. Second, adjustment programmes may become a source of potential instability if the public perceives that structural measures, such as privatization, price decontrol, and public employment policies, favour specific interest groups, such as military and political leaders, leading families, dominant ethnic communities, or high-level civil servants. This can spur regional, communal, and class conflicts. Third, national leaders of developing countries, who usually only borrow from the Bank or Fund as a last resort, complain about the secrecy of the recipient country's letter of intent, which reduces internal political dialogue and increases the difficulty of the adjustment programme's implementation (Mills 1989). These problems can undermine the legitimacy of political elites, spurring a challenge to leadership.

Trade and exchange rate policies, a part of adjustment programmes, influence the differential origin and allocation of export and other revenues and affect internal sectoral terms of trade. These shape the costs and benefits to classes, regions, and communities; and how these benefits and costs contribute to perceived grievances by classes and communities.

Is there any relationship between political troubles and intervention by Bretton Woods' institutions? Auvinen's (1996a, 1996b) statistical analysis of political conflict in developing countries in the 1980s indicates that IMF intervention, with its accompanying austerity measures and their stifling effect on short-term living standards, contributes to political protest and rebellion. Indeed the longer the history of Fund stabilization and adjustment, the more extensive is the political conflict. Furthermore, IMF adjustment also has a trigger effect, damaging the politically powerful and mobilized groups and the urban working-class and poor.

In their analysis of Africa, Morrisson, Lafay, and Dessus (1994:174) contend that 'Most of the stabilization and adjustment measures run the risk of causing political troubles. Cuts in subsidies, tax increases, privatization of public enterprises or removal of commercial protection threaten the income and employment of either large numbers of people or of well-organized groups.' Africa has the highest rate of economic decline (and thus greatest Bank/Fund requirements for economic adjustment and stabilization), and also the highest incidence of political conflict and humanitarian emergencies. According to Morrisson *et al.*'s (1994:174-91) and Haggard, Lafay, and Morrisson's (1995:108-09) evidence, IMF interventions require stabilization measures within one year, the most risky of which are a cut in food subsidies and devaluation's fillip to inflation, both of which contribute to strikes, demonstrations, and repression.

Thus, we expect that stabilization and adjustment programmes, which contribute to developing countries' political conflict, will also increase their vulnerability to humanitarian emergencies. Specifically, we hypothesize a direct relationship between IMF intervention and complex humanitarian emergencies.

## **2.4 Growth, distribution, adjustment and elite interests**

How elites and masses react to these three major economic phenomena and their changes – stagnation and economic decline, high and increasing inequality, and distributional shifts from adjustment programmes –

influences the probability of political conflict and humanitarian disasters. Elites may be threatened by adverse economic changes and the reaction of non-elites to these changes. The strategies of political elites to maintain power and affluence, in the midst of economic crises and shifts, may exacerbate conflict and the potential for humanitarian emergencies.

The struggle over economic benefits helps shape, consolidate, and modify ruling elites. Economic growth usually expands the perquisites and benefits that political elites can distribute to allies and subordinates, while economic decline or cuts in expenditures from liberalization shrink the clientele base, often requiring greater coercion and corruption to maintain power. Or in reaction to economic decline and liberalization, ruling elites need new ways of exercising power, and sometimes use foreign firms and private operators to regularize revenues and expenditures. Whether or not elites are successful in creating new patron-client patterns, economic and state expenditure declines increase the potential for destabilizing the polity and threatening a humanitarian crisis.

Africa's political stability has been especially threatened by the widespread negative per-capita growth of the late 1970s, 1980s, and early 1990s. When growth becomes negative, as in parts of Africa, it becomes more difficult to support so large a ruling elite. Contradictions and disunity can grow among the previously dominant elite. Negative real economic growth narrows the communal and class support of ruling coalitions, and threatens political cohesion.

## **2.5 Military centrality**

The military centrality theory focuses on the military's prominent position in LDCs. In many countries the military institution has more resources and a more effective organization than the civilian government. We expect military centrality, as indicated by military expenditure as a percentage of GNP, to contribute to humanitarian emergencies through four different dynamics.

Military resources are used to support authoritarian political structures, which generate (1) desperate action and (2) military build-up in the opposition; under political deprivation and in the absence of political mechanisms to settle grievances, full-scale rebellion becomes more likely. (3) A strong military is apt to overthrow both civilian and authoritarian regimes, which may lead to political instability and humanitarian crises.

For civilian regimes in less developed countries, powerful armed forces constitute a constant threat. Particularly during economic austerity they are afraid to cut back military spending. Moreover, they may strengthen the military in order to stave off threats from the opposition. This, in turn, entails heavy socio-economic costs for the population, (4) inducing further discontent and increasing the risk of rebellion. In very poor countries, budget allocations for the military may produce downright starvation and destitution. We will develop these arguments below.

## **2.6 Conflict tradition**

Not all economically destitute countries with inegalitarian income distributions and predatory political structures supported by a strong military establishment were subject to humanitarian emergencies. Countries with a history of mass political mobilization for conflict, such as Colombia, Burundi, and Rwanda, are likely to be more susceptible to new conflict components of complex humanitarian emergencies than other, historically more peaceful countries. Gurr and Duvall used conflict traditions as an indicator of the justifications for political violence. 'Tension', a multiplicative term incorporating stress, strain, and conflict traditions, 'is the primary driving force behind manifest conflict' (Gurr and Duvall 1973:157). Gurr and Lichbach's (1986) pure 'persistence of conflict model' also explained some of the variance in political conflict.

Citizens adapt to a certain, acceptable level of violence through the cultural experience of violence (Gurr, 1970:155-92; Gurr 1972:21; Rapkin and Avery 1986:114). A tradition of intensive political violence makes societies more susceptible to war and humanitarian emergencies. Muller and Weede (1994) regressed the number of deaths from domestic violence in 1973-77 on the corresponding measure in 1968-72 and found a strong and significant association. We expect to find a direct association between the number of deaths from domestic violence in the 1960s and 1970s and humanitarian emergencies in the 1980s and 1990s.

## **III ECONOMETRIC ANALYSIS**

Is it possible to conduct an econometric analysis of humanitarian emergencies? How do we measure such complex phenomena? Are there data available for those countries experiencing emergencies? These are

some questions we raised at the beginning of this econometric analysis, as far as we know the first econometric work on the sources of humanitarian emergencies. The analysis, while exploratory, is important in filling major gaps of knowledge concerning factors contributing to emergencies.

### **3.1 The sample: COHUME dataset**

The 'COMplex HUMANitarian Emergencies', or 'COHUME', database includes annual data on 124 countries from 1980 to 1995. To ensure broad representation, we included all low- and middle-income countries, as indicated by the World Bank, *World Development Report 1996*, except upper-middle income oil-exporting countries Libya, Saudi Arabia, Oman, and Bahrain (with a relative abundance of resources but a lack of conflict data); European Union member Greece; and Eritrea, independent in 1993 and lacking data before then. All Eritrean battle deaths and refugee data are classified as a part of Ethiopia's civil war.

Following is the geographic breakdown of countries in the dataset. Forty-two, or about one third of the countries, are from Sub-Saharan Africa while one fifth are from Latin America and Asia, respectively. The remaining countries are from Eastern Europe (21 countries) and the Middle East and North Africa (12 countries). Not all countries are included in the regression analyses due to shortage of data, and the shares of the respective regions are altered. The share of Eastern Europe, which generally has scant data in the 1980s, diminishes from 17 per cent to a mere 4 per cent of the cases analyzed while that of Latin America, with the most complete data, increases to 32 per cent. The shares of the other three regions remain virtually the same. In the regression analyses Latin America is thus given more and Eastern Europe less weight than their shares in the COHUME dataset. While this should be taken into account in interpreting the results, no sample is likely to be a perfect representation of the universe of countries susceptible to humanitarian emergencies.

### **3.2 Operationalization of dependent variable**

We use four indicators to measure our concept of humanitarian emergencies. Battle deaths, a proxy for deaths resulting from direct violence, measures the intensity of armed conflict in the country. The number of refugees indicates the extent of displacement across national boundaries. The daily calorie supply per capita is used as a proxy for

malnutrition, whereas infant mortality rate is used as a proxy for disease. We elaborate on these operationalizations in Appendix I.<sup>7</sup>

Are the four indicators: deaths, refugees, malnutrition, and disease, a part of a single phenomenon, complex humanitarian emergencies? Simple correlations show that battle-related deaths as a percentage of the population are closely associated with displacement (that is, number of refugees as a percentage of the population of the source country,  $r=0.57$ ) and less, but nevertheless statistically significantly, associated, with hunger (the negative deviation of the growth in calorie supply per day from the whole sample;  $r=-0.17$ ), and disease (the positive deviation of the infant mortality rate's decline from the whole sample;  $r=0.08$ ). Refugee flows are associated with slow calorie supply growth ( $r=-0.27$ ) as well as with slow reductions of infant mortality ( $r=0.15$ ). Slow calorie supply growth and slow reduction of infant mortality are also correlated, albeit quite weakly ( $r=-0.06$ ). The four dimensions of complex humanitarian emergencies, as represented by our measures, are indeed intercorrelated, but except for the death-refugee and refugee-calorie growth correlations, the associations are not very strong. We considered this information when constructing composite indicators for humanitarian emergencies below.

When studying previously unresearched phenomena as humanitarian emergencies, the validity of indicators is critical and the operationalization of the dependent variable is difficult. We initially rejected constructing a dichotomous dependent variable, patterned after Väyrynen (1996), recording 1 if a humanitarian emergency existed and 0 if it did not. First, this procedure would have involved establishing an arbitrary threshold for complex humanitarian emergencies: how can we determine the moment when deaths and disablement have reached an emergency in one country while in another one they had not? Second, in numerous instances, such as Ethiopia and Uganda, countries moved in and out of humanitarian emergencies, and sometimes as in Burundi, Somalia, and Liberia, back again, during the 1980 to 1995 period.

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<sup>7</sup> In interpreting our results, we have considered (1) problems in the measurement and validity of different components of emergencies (discussed in the appendix: Melkas 1996, and Väyrynen 1996) and (2) missing observations systematically related to low levels of economic development (one of our explanatory variables) or wars (a component of complex humanitarian emergencies by our definition).

Our proxy for war deaths does not include the large number of civilian deaths, including those that result from genocides.

We constructed continuous indicators for our dependent variables, thus not losing information on annual variations or facing problems of setting thresholds, as with dichotomous indicators. For the sake of validity, we tested our hypotheses on three different measures for the dependent variable. Our first, most simple measure, is based on the information that battle deaths and refugees per population are closely related:

$$(1) \quad \text{DEATHREF} = (\text{DEATHPOP} + 1) * (\text{REFUPOP} + 1),$$

where DEATHPOP, REFUPOP = battle-related deaths and refugees per population, respectively (except if both DEATHPOP and REFUPOP = 0, then DEATHREF = 0 instead of 1).

The variable combines two important components of complex humanitarian emergencies, but for a positive score both components do not have to be present (the reason for adding two constants in the equation). The variable thus gets positive values not only when there are both deaths and refugees, but also when there are deaths but no refugees or refugees but no deaths. The inclusiveness of this variable increases the number of non-zero observations, which increases the variability of the dependent variable. However, a second equation assures that a humanitarian emergency comprises both components, that is

$$(2) \quad \text{HUMEMERG} = \text{DEATHPOP} * \text{REFUPOP}.$$

We constructed a composite indicator that also includes malnutrition and disease as parts of complex humanitarian emergencies:

$$(3) \quad \text{CHE} = (1 + \text{DEATHPOP}) * (1 + \text{REFUPOP}) * ((100 - \text{CALAVE}) / 10) * ((100 + \text{INFAVE}) / 10),^8$$

where CALAVE = deviation from trend (average annual increase) in calorie supply and INFAVE = deviation from trend (average annual decrease) in the infant mortality rate.

The negative sign before CALAVE refers to the fact that the cases that have had smaller than average calorie supply growth are more likely to be

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<sup>8</sup> By adding a constant 100 to CALAVE and INFAVE we eliminate the possibility of obtaining – what would be counterintuitive – negative composite measures of complex humanitarian emergencies. Dividing the scores of CALAVE and INFAVE by 10 avoids large scores of the composite indicators.

a part of a complex humanitarian emergency, whereas the positive sign before INFMORT indicates that smaller than average infant mortality *reductions* are expected to increase the probability of a complex emergency. Of the three indicators, CHE is the most inclusive and HUMEMERG the most exclusive, since it only includes cases with both deaths and refugees. One point of interest is comparing the results of models using different operationalizations of humanitarian emergencies. While rejecting the 'country-list approach,' we later created dichotomous variables for probit regression analyses, which enabled us to estimate the changes in the probability of a humanitarian emergency.

To illustrate, according to our measure HUMEMERG, 24 countries experienced both battle deaths and refugees during a given year in 1980-1994 (see table 1), a picture remarkably similar to tables 1 and 4 from Väyrynen (1996), despite the fact that he concentrates on the 1990s. Compared to his tables, we also identify humanitarian emergencies in Cambodia in 1980-91, Chad 1980-88, El Salvador 1980-92, Guatemala 1982-84, Lebanon 1980, Nicaragua 1982-90, and Uganda 1980-88.

The number of battle deaths and refugees in the worst year of the emergency, adjusted to population, was by far the greatest in Afghanistan, followed by Liberia, Angola, Mozambique, and Somalia. Since figures fluctuate yearly during a crisis, the worst-year tally does not necessarily indicate the severity of the whole emergency. The fact that the scores for Rwanda and the former Yugoslavia do not rank near the top as they did in Väyrynen's tables can be explained by how the variable was operationalized. In Rwanda, battle deaths were small relative to total casualties, which included substantial genocide, which is not included in our figures. In the former Yugoslavia, our measure does not include most people displaced who were within Yugoslavia; rather our measure captures only international refugees, that is, those who fled outside Yugoslavia.

TABLE 1  
HUMANITARIAN EMERGENCIES, 1980-94 (COHUMES database)

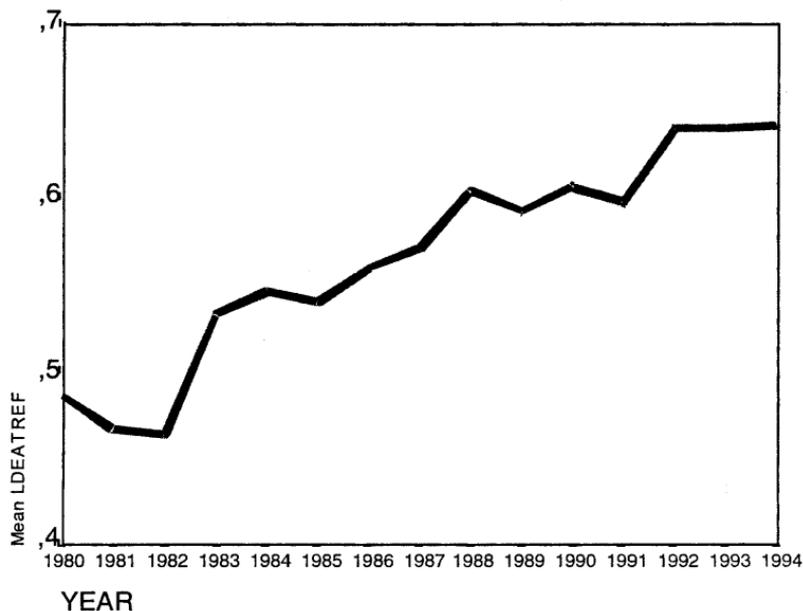
Country	Year(s) Emergency Occurred	Deaths * Refugees per Population in Worst Year	Worst Year
Afghanistan	1980-94	1671.99	1988
Angola	1980-91, 1993	148.66	1981
Armenia	1992-94	17.43	1994
Azerbaijan	1992-94	7.22	1994
Burundi	1988, 1991-94	34.66	1988
Cambodia	1980-91	48.97	1980
Chad	1980-88	23.48	1981
El Salvador	1980-92	20.84	1982
Ethiopia	1980-91	19.68	1981
Guatemala	1982-84	7.67	1984
Iraq	1985-94	1.78	1988
Lebanon	1980 <sup>1</sup>	4.46	1980
Liberia	1989-90, 1992-94	550.33	1990
Mozambique	1983-94	97.55	1992
Myanmar	1985-94	.10	1992
Nicaragua	1982-90	33.40	1989
Philippines	1980-88	.07	1980
Rwanda	1990-94	11.51	1994
Somalia	1987-94	71.36	1992
Sri Lanka	1985-94	5.13	1987
Sudan	1983-94	.83	1990
Tajikistan	1992-94	1.61	1994
Uganda	1980-88	17.63	1983
Former Yugoslavia <sup>2</sup>	1991-94	41.33	1992

Note: The table indicates those countries that experienced both battle deaths and refugees during the indicated years. Somalia, for example, had a population of 8,901,813 in 1992. The tally, 71.36, is arrived at by multiplying 7.35 by 9.71, which are derived from  $((6,539 \text{ battle deaths/population}) * 10,000) * ((864,800 \text{ refugees/population}) * 100)$ . Although many of the emergencies continued, 1994 is the last year for which we have data on battle deaths from domestic violence. <sup>1</sup> The war and its deaths lasted from 1980 to 1990, but there were refugees only in 1980. <sup>2</sup> Includes all states of the former Yugoslavia.

The worst-year tolls indicate an intensification of humanitarian emergencies since about 1990. In 14 of 22 cases, the worst year was between 1988 and 1994. Figure 1 shows an increase for our first measure,

DEATHREF, from 1980 to 1994.<sup>9</sup> An increasing, albeit less pronounced, trend also characterizes HUMEMERG. After 1988, the increases seem to be from the rising number of refugees in the world (figure 2), in contrast to the number of battle deaths (figure 3), which, according to our dataset, decline (although perhaps as a result of the limitations of the Correlates of War dataset – see Appendix I). Moreover, the decline in deaths would be more gradual and the increase in DEATHREF steeper, if we had measures for democides and politicides, which are often part of humanitarian emergencies but are not included in our battle death figures. Complicating the picture, our third measure, CHE, has declined since 1990, because of factors already mentioned, in addition to the general improvement in infant survival and calorie supply.

FIGURE 1  
DEATHS AND REFUGEE FLOWS, 1980-94 (annual means of values)



<sup>9</sup> Note that the logarithmic scale used in calculating the averages eliminates the impact of extremely high values.

FIGURE 2  
BATTLE DEATHS PER POPULATION, 1980-94 (annual means of values)

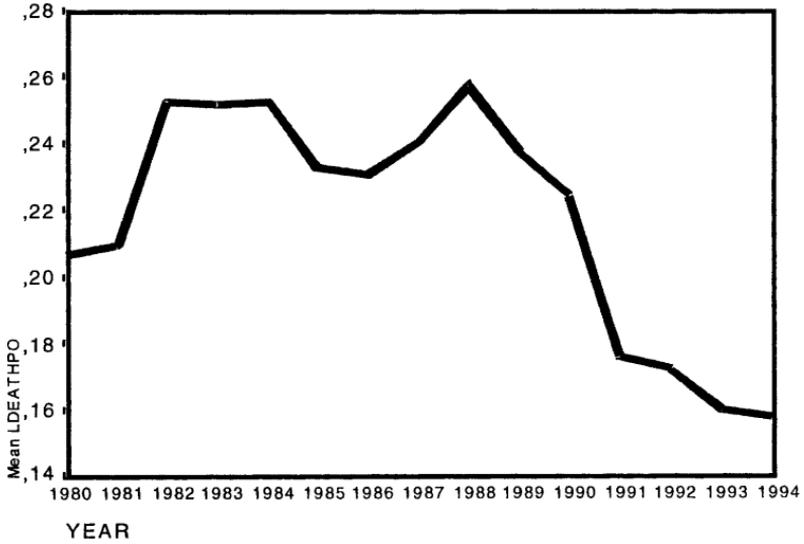
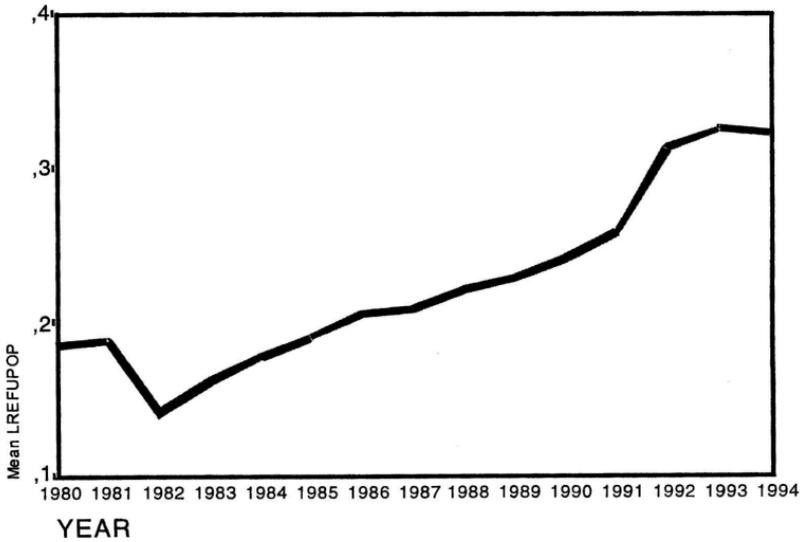


FIGURE 3  
REFUGEES PER POPULATION, 1980-94 (annual means of values)



### 3.3 Data analysis

#### 3.3.1 *Descriptive statistics*

Table 2 includes some basic statistics of our dependent variables. The first column indicates the number of valid observations for each variable. As an example, while all four components of CHE have to be present for the variable to be registered. 555 of 1984 cases had missing values. DEATHREF and HUMEMERG, however, each had only 124 missing values, the majority of which are zeros. As the distributions of the variables are badly skewed, we made natural logarithmic transformations to reduce the probability of heteroskedasticity as well as the non-normality of the disturbance term. The transformed variables are listed after the original ones with a prefix 'L'.

Among explanatory variables, annual real GDP growth (GDPGRO) and GNP per capita (GNPCAP) are indicators of short-term changes and levels of income, respectively. The annual growth of food production per capita (FOODGRO) measures food and agricultural development. The changes and levels, respectively, of per capita official development assistance (ODAPOGRO, ODAPOP80) and terms of trade (TOTCHANG, TOT80), indicate sudden external shocks and long-term developments in a country's international economic position. The Gini index of income concentration (GINI) measures income inequality, and military expenditures per GNP (MILCENT) military centrality, in a society. The use of IMF credit as a percentage of GNP (IMFGNP) indicates the extent of the Fund's intervention in a society. The number of deaths from domestic violence in 1963-77 (DEATRAD) reflects the tradition for violent conflict. The operationalizations as well as the sources of these variables are given in the appendix.

The distributions, particularly those of inflation (CPIDIFF) and the index of official development assistance (ODAPOP80), were skewed and we log transformed the variables for the regression analyses. The data on terms of trade (TOT80, TOTCHANG) are plagued with missing values that made their use problematic in the regression analysis.

We applied correlation analysis to get an initial sense of the relationships between our explanatory and dependent variables, and detect potential problems of multicollinearity. The simple correlations indicated several relationships that are statistically significant at the 1 per cent level. Our

TABLE 2  
DEPENDENT VARIABLE: DESCRIPTIVE STATISTICS

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
DEATHREF	1860	.00	1754.79	13.2394	113.3806	12.638	.057	170.940	.113
LDEATREF	1860	.00	7.47	.5647	1.1462	2.909	.057	9.876	.113
HUMEMERG	1860	.00	1671.99	10.9487	106.9921	12.881	.057	176.601	.113
LHUMEMER	1860	.00	7.42	.2531	.9707	4.607	.057	23.062	.113
CHE	1429	54.52	239118	2083.94	16359.7	11.330	.065	137.598	.129
LCHE	1429	4.00	12.38	5.0872	1.2505	3.087	.065	10.509	.129
Valid N (listwise)	1428								

dependent variables, LDEATREF, LHUMEMER, and LCHE, are each directly associated with inflation, death tradition, military centrality, and inversely with food production growth<sup>10</sup>, GDP growth, and GNP per capita. On the basis of correlation analysis, the level of economic development (as indicated by GNP per capita) and military centrality are the strongest correlates of humanitarian emergencies. Moreover, all coefficients have the expected signs. Disappointingly, the Gini index is weakly correlated ( $r=0.08$ ) only with LDEATREF. In addition, IMF intervention, official development assistance, and the terms of trade are not associated with our dependent variables.<sup>11</sup>

On the basis of simple correlations, multicollinearity should not pose a serious problem in the regression analyses. The strongest association is between GNP per capita and IMF intervention ( $r=-0.46$ ): the Fund tends to intervene in low-income countries. As expected, food production growth and GDP growth are correlated ( $r=0.28$ ) but they would not, in any case, be included in the same regression equation.

### 3.3.2 Regression analysis

**Analysis Strategy.** We applied pooled cross-country time-series regression techniques to a sample of 124 countries in 1980-95, for a total of 1984 (16 x 124) cases. The use of pooled data is justified on several grounds. Mere time-series analyses for individual countries are insufficient, as we are interested in general relationships between our explanatory variables and humanitarian emergencies. Our discussion below will elaborate on these relationships in particular countries. We gain several advantages compared to mere cross-sectional models. First, we gain more data points and thus increased confidence in our findings. Second, we have the opportunity to study the relationships over time. Third, cross-sectional models are inadequate in analyzing emergencies, which may erupt at any given time during the observation period. We want the explanatory variables to relate to the time when the emergency actually occurred.

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<sup>10</sup> LDEATREF is only at the 5 per cent level ( $r=-0.08$ ).

<sup>11</sup> The association between IMF intervention, on the one hand, and either LHUMEMER or LCHE, on the other, is statistically significant at the 5 per cent level, but the correlation coefficients are, for all practical purposes, zero.

Also in the selection of analysis strategy, we tried to consider the issue of validity. With an aim at a robustness of findings, we applied several types of econometric and politimetric methods to analyze the political economy sources of complex humanitarian emergencies. In addition to the basic ordinary least squares (OLS) model, we applied a generalized least squares (GLS) model with the Prais-Winsten transformation because of autocorrelated disturbances within the cross-sectional units. The Prais-Winsten model is more credible than the OLS model due to the corrected autocorrelation but we nevertheless also present OLS results for comparison. Also, we estimated Tobit models, or censored normal regression models to check the assumption that those observations in DEATHREF and HUMEMERG that get the value zero are censored from the sample. Rather than indicating an absence of deaths and/or refugee flows, the zeros are often due to our data sources' deficiencies in reporting (see Appendix 1; Amemiya 1984: 10-11, 16-19; Maddala 1983: 149-156). Two-stage least squares models were applied where two-way causality was suspected between the predictors and the dependent variable.

All of these models assume that the effects of  $X_i$  on  $Y$  are the same irrespective of the cross-sectional units. This assumption of constant coefficients is somewhat unrealistic in a pool that contains as many as 124 different types of cross-sectional units. Because of the great variety of countries in our sample, we expect that there will be differential effects across the cross-sections, due, for example, to historical developments that lead to different socio-political and economic structures. We therefore specified two further models, 'fixed effects' and 'random effects' regression models.

The fixed effects or least squares dummy variable (LSDV) model, captures variation unique to cross-sections in an intercept that varies from one cross-section to another. In other words, each case has a unique variance. In contrast to the fixed-effects model, the random effects, or error component, model assumes that the magnitude and the direction of the relationships among the cross-sections are random but captured and specified in the error term explicitly. As in the OLS model, a single intercept is again postulated, but the differential intercepts are merged within the error term. In addition to estimating several different regression models, different lag structures were applied to increase the validity of the findings.

**Findings.** Most of our hypotheses are supported by the results of OLS linear regression analysis in table 3. All our measures of humanitarian emergencies are inversely associated with the rate of real GDP growth (LGDPGRO). The analysis further corroborates the theses that humanitarian emergencies occur in low-income conditions (LGNPCAP) and under conditions of high inequality, as depicted by the Gini index of income concentration (LGINI). Our dependent variables vary directly with military centrality (LMILCENT) and a tradition of violent conflict, as indicated by deaths from domestic violence, 1963-77 (LDEATRAD).<sup>12</sup> The tradition of violent conflict is not associated with the measure that includes both deaths and refugees (LHUMEMER). This indicates that while a cultural experience of violence may lower the threshold for violence in the future<sup>13</sup>, the combination of deaths and refugees may represent a phenomenon less affected by the culture of conflict. Also a technical interpretation is plausible: a lack of variability in both LHUMEMER (with many zero values) and LDEATRAD (with one single value inherited from 1963-77) may deflate the strength of their association. The models are only capable of accounting for 16 - 19 per cent of the variation in the dependent variables. A low coefficient of determination is to be expected in a cross-sectional model with very different units of analysis.

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<sup>12</sup> We also experimented with variables from Ted Gurr's Minorities at Risk database (1993). Political rights' demands (POLRI) turned out to be significant in the model for DEATHREF. The variable includes ethnic minority groups' diffuse political grievances (excluding demands for political autonomy) and the groups' 'seek[ing] of greater political rights, central participation, equal civil rights and change in officials/policies'. It is notable that POLRI is the strongest correlate of humanitarian emergencies out of many candidates in the database, including economic discrimination, economic, cultural and political differentials, economic and social grievances. Our economic variables are likely to pick up some of the variation between the 'minorities variables' and emergencies but even when we restrict our variables' coefficients to zero, POLRI is more strongly associated than the economic status and demands of ethnic minorities with humanitarian emergencies. We have not included POLRI in Table 3 due to its large number of missing observations which substantially reduces the degrees of freedom in the model.

<sup>13</sup> As indicated by the variable's positive association with battle deaths only (DEATHPOP, not depicted here).

TABLE 3  
HUMANITARIAN EMERGENCIES: OLS REGRESSION MODELS

Explanatory Variables	(1) LDEATREF	(2) LHUMEMER	(3) LCHE
Constant	7.31*** (2.67)	4.27** (1.85)	15.07*** (2.51)
LGDPGRO [-1]	-1.83*** (0.55)	-1.16*** (0.38)	-.54*** (0.52)
LGINI [-1]	0.29** (0.12)	0.18** (0.08)	0.36*** (0.11)
LGNPCAP [-1]	-0.15*** (0.03)	-0.07*** (0.02)	-0.19*** (0.03)
LIMFGNP [-1]	-0.10*** (0.03)	-0.05*** (0.02)	-0.06** (0.03)
LCPIDIFF [-1]	0.26*** (0.06)	0.20*** (0.04)	0.27*** (0.05)
LMILCENT [-1]	0.18*** (0.03)	0.16*** (0.02)	0.15*** (0.03)
LDEATRAD	0.04*** (0.01)	a	0.02* (0.01)
R square	0.18	0.16	0.19
N	663	663	663
DW	0.34	0.31	0.38

Note: The figures are parameter estimates and standard errors (in parentheses), respectively. LGDPGRO = ln real GDP growth; LGINI = ln gini index; LGNPCAP = ln GNP per capita; LIMFGNP = ln use of IMF credit/GNP; LCPIDIFF = ln consumer price index, annual change; LMILCENT = ln military expenditures/GNP; LDEATRAD = ln deaths from domestic violence 1963-77; except for LDEATRAD, all explanatory variables are lagged one year [-1]. Coefficient significant \*\*\* = at the 1 per cent level (2-tailed test), \*\* = 5 per cent level and \* = 10 per cent level; a = not significant; DW = Durbin-Watson test statistic for serial correlation.

We get four unexpected findings. First, IMF funding as a percentage of GNP (LIMFGNP) is inversely associated with humanitarian emergencies, which is contrary to our expectations. Some of the explanation may stem from the IMF's refraining from funding 'basket cases' devastated by war and displacement. In that case, the negative coefficient would be picking up a reverse causal relationship. We applied a two-stage least squares model and different lag structures to inspect the relationship between LIMFGNP and humanitarian emergencies. The two-stage least squares

results, with LIMFGNP as the other endogenous variable, do not dramatically differ from those of the OLS model. However, when LIMFGNP was used as a predictor for *lagged* values of dependent variables, its coefficients are generally larger than those presented in table 3, indicating that perhaps emergencies keep away the IMF rather than vice versa.

Second, we did not expect that inflation, as measured by the annual percentage change in the consumer price index (LCPIDIFF), would be a source of humanitarian emergencies, since real economic growth adjusts for inflation, and the distributional aspects of inflation would be captured in income inequality. However, table 3 indicates that inflation is a source of humanitarian emergencies. The relative invariability of data on income distribution (from infrequent surveys, so that 33 out of 76 countries, for which we have data, had no more than one change in their Gini coefficient, 1980-95) means that we rarely can measure shifts in income concentration. Inflation, measured here on a year-by-year basis, may capture the destabilizing effect of income distributional shifts on political violence and emergencies, an effect that cannot be captured due to Gini's invariability in our data set. Inflation redistributes income, at least in the early stages, from low-income workers and those on fixed income to high-income classes.

Third, international economic shocks, as indicated by the terms of trade index or its change, are not associated with any of our measures of humanitarian emergencies. Part of this finding may be explained by a lack of data, as we had observations for terms of trade for only 960 (out of 1984) cases. Moreover, since falling terms of trade are likely to have an adverse impact on economic growth, GDP growth may capture some of the variation between terms of trade and humanitarian emergencies.<sup>14</sup> Fourth, official development assistance, as measured by grants received in US dollars per capita, whether level or its percentage change, is also unassociated with our measures of humanitarian emergencies. However, falling aid may not measure a deterioration in the international economic position of countries, as some graduated from receiving aid, particularly grants, because of development success. Argentina, Brazil, Chile, Ecuador, South Korea, Uruguay and Venezuela received practically no grants in 1980-95, nor did they experience humanitarian emergencies.

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<sup>14</sup> Although the coefficient of terms of trade remains insignificant even when GDP growth is eliminated from the equation.

Because of the high degree of first-order autocorrelation, which is likely to result from the omission of lagged values of the dependent variable in the models, we applied a GLS model with Prais-Winsten corrective procedure. The results are shown in table 4.

TABLE 4  
HUMANITARIAN EMERGENCIES: GLS (PRAIS-WINSTEN)  
REGRESSION MODELS

Explanatory Variables	(1) LDEATHREF	(2) LHUMEMER	(3) LCHE
Constant	-2.69*** (0.81)	1.18a (0.73)	2.82*** (0.58)
LGDPGRO [-1]	b	-0.29** (0.14)	a
LFOODGRO [-1]	-0.19* (0.12)	a	b
LGINI [-1]	0.97*** (0.16)	0.14* (0.08)	0.56*** (0.14)
LGNPCAP [-1]	-0.14*** (0.04)	-0.07*** (0.02)	-0.21*** (0.03)
LIMFGNP [-1]	a	a	a
LCPIDIFF [-1]	0.16*** (0.04)	a	0.19*** (0.04)
LMILCENT [-1]	0.19*** (0.04)	0.10*** (0.02)	0.19*** (0.03)
LDEATRAD	0.05*** (0.01)	0.02*** (0.007)	0.03*** (0.01)
Rho	0.86*** (0.02)	0.88*** (0.02)	0.83*** (0.02)
N	600	753	732
DW	1.93	1.64	1.98

Note: The figures are parameter estimates and standard errors (in parentheses), respectively. LGDPGRO = ln real GDP growth; LFOODGRO = ln growth of food production per capita; LGINI = ln gini index; LGNPCAP = ln GNP per capita; LIMFGNP = ln use of IMF credit/GNP; LCPIDIFF = ln consumer price index, annual change; LMILCENT = ln military expenditures/GNP; LDEATRAD = ln deaths from domestic violence 1963-77; except for LDEATRAD, all explanatory variables are lagged one year [-1]. Rho = coefficient of autocorrelation. Coefficient significant \*\*\* = at the 1 per cent level (2-tailed test), \*\* = 5 per cent level and \* = 10 per cent level; a = not significant; and b = not included in the equation. DW = Durbin-Watson test statistic for serial correlation.

After correcting for autocorrelation, IMF funding is no longer associated with humanitarian emergencies, which may reflect the IMF's rejection of countries plagued by wars and humanitarian catastrophes. Also the relationship between economic growth and humanitarian emergencies is weakened. The coefficient of LGDPGRO is significant only in the model for LHUMEMER and even then only when inflation is dropped from the equation. This may reflect the two-way causality between humanitarian emergencies and growth: some of the impact of economic growth on LDEATHREF is carried over from past interactions between war, refugees and economic growth. Stewart *et al.* (1997:11-41) show that complex humanitarian emergencies contribute to falls in GNP per capita. We estimated two-stage least squares models, with humanitarian emergencies and economic growth as the endogenous variables, to correct for the possible simultaneous equations bias caused by the two-way causality. After the elimination of the simultaneous-equations bias, the coefficient of GDP growth increases three-fold in all three models. Indeed there seems to be a two-way causal relationship between GDP growth and humanitarian emergencies but the relationship is stronger from GDP growth to emergencies than vice versa.<sup>15</sup> This finding is supported when we apply different lag structures on the OLS and GLS models (appendix tables II.1 and II.2). A poor economic performance, as indicated by sluggish real GDP growth, seems to be an important variable in explaining the rise of humanitarian emergencies.

We introduced the growth of food production per capita (LFOODGRO) in lieu of GDP growth in both OLS and GLS models.<sup>16</sup> In GLS equation (1), the coefficient of LFOODGRO is significant, albeit only at the 10 per cent level, indicating the importance of the availability of food in generating wars and/or refugee flows. The association is significant only with this lag structure (food output growth lagged one year) but not otherwise (appendix table II.3). Although humanitarian emergencies may have contributed to a reduced food supply in particular cases, our analyses fail to track any global pattern. In contrast to the OLS results, the tradition of violent conflict (LDEATRAD) is a significant determinant of LHUMEMER.

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<sup>15</sup> The parameter estimates and their standard errors are -5.59\*\*\* (1.76), -3.74\*\*\* (1.23) and -7.75 (1.73) in the 2SLS models for LDEATREF, LHUMEMER and LCHE, respectively, as compared to -1.83 (0.55), -1.16 (0.38) and -2.54 (0.52) in the OLS models. Note the proportional increase in standard errors.

<sup>16</sup> We did not introduce LFOODGRO in equation (3) where the dependent variable includes calorie supply as one of its components.

Some of its impact may have been picked up by autocorrelation in the OLS models.

We also applied different lag structures to inspect the relationship between military centrality and humanitarian emergencies. Particularly if the conflict or war during a humanitarian emergency is violent and intensive, military expenditures are likely to increase. Our additional analyses indicate that our measures of humanitarian emergencies are correlated rather than causally related to military expenditures: the association is strongest without any lags or leads. The testing of lag structures between inflation and humanitarian emergencies indicates that humanitarian emergencies may give rise to inflation rather than vice versa: the associations are strongest two years after the emergency. The two-stage least squares models, with LMILCENT and LCPIDIFF as endogenous variables, did not produce any different findings from the OLS models.

**Tobit Models.** We present the results of censored normal regression models in table 5. In the HUMEMERG model, there are 696 left-censored observations and only 57 uncensored (non-zero) observations in the sample, a further indication that countries that lack data (and are not included in the analysis) are generally those that experienced humanitarian emergencies. In the model for DEATHREF there are 454 censored and only 210 uncensored observations.

Thus the parameter estimates in the OLS model are dominated by the large number of zeros in the sample and consequently biased downward. In the DEATHREF model, Tobit coefficients are roughly three times the size of OLS coefficients except for inflation (LCPIDIFF), which only increases by roughly 50 per cent. All coefficients are statistically different from zero at the 1-per cent significance level. In the HUMEMERG model, the differences are much more dramatic due to the greater number of zeros in the sample. Tobit coefficients are now over ten times larger than OLS coefficients except for that of inflation which loses statistical significance ( $t = 1.032$ ). Inflation, thus, does not seem to be robustly associated with humanitarian emergencies, particularly since tobit coefficients are likely to be more reliable than OLS coefficients, which do not account for censoring in the sample. Death tradition, the coefficient of which was not statistically significant in the OLS model, is significant at the 1-per cent level in the tobit model.

TABLE 5  
HUMANITARIAN EMERGENCIES: TOBIT MODELS

Explanatory Variables	(1) LDEATREF	(2) LHUMEMER
Constant	16.14** (7.68)	51.09*** (15.50)
LGDPGRO [-1]	-4.37*** (1.58)	-13.61*** (3.34)
LGINI [-1]	0.99*** (0.36)	3.48*** (1.03)
LGNPCAP [-1]	-0.48*** (0.11)	-1.01*** (0.30)
LIMFGNP [-1]	-0.27*** (0.10)	-0.59*** (0.23)
LCPIDIFF [-1]	0.40*** (0.14)	a
LMILCENT [-1]	0.43*** (0.10)	1.16*** (0.25)
LDEATRAD	0.16*** (0.03)	0.26*** (0.07)
se	1.50 (0.08)	2.27 (0.26)
Log Likelihood	-586.81	-232.51
Pseudo R square	0.10	0.15
N	664	753
Censored/uncensored	454 / 210	696 / 57

Note: The figures are parameter estimates and standard errors (in parentheses), respectively. LGDPGRO = ln real GDP growth; LGINI = ln gini index; LGNPCAP = ln GNP per capita; LIMFGNP = ln use of IMF credit/GNP; LCPIDIFF = ln consumer price index, annual change; LMILCENT = ln military expenditures/GNP; LDEATRAD = ln deaths from domestic violence 1963-77; except for LDEATRAD, all explanatory variables are lagged one year [-1]. Coefficient significant \*\*\* = at the 1 per cent level (2-tailed test), \*\* = 5 per cent level and \* = 10 per cent level; a = not significant per se = estimated standard error of the regression; pseudo R square = least squares goodness-of-fit equivalent of maximum likelihood estimation; censored / uncensored = the number of left censored observations at LDEATREF and LHUMEMER <=0 / number of uncensored observations.

**Fixed and Random Effects Models.** The findings from the fixed and random effects models (table 6) differ from the OLS, GLS (Prais-Winsten) and Tobit models. Most notably, the coefficient of Gini index changes sign

TABLE 6  
COMPLEX HUMANITARIAN EMERGENCIES: FIXED (LSDV) AND RANDOM EFFECTS (GLS) MODELS

Explanatory Variables	LDEATREF		LHUMEMER		LCHE	
	fixed	random	fixed	random	fixed	random
Constant	3.52*** (0.85)	3.68** (1.46)	0.69** (0.32)	0.11 <sup>a</sup> (0.27)	11.10*** (1.56)	8.61*** (1.19)
LGDPGRO [-1]	a	-0.45* (0.27)	a	a	-0.72*** (0.26)	-0.53** (0.25)
LGINI [-1]	-0.90*** (0.23)	-0.44** (0.19)	a	a	-0.50** (0.23)	a
LGNPCAP [-1]	a	a	-0.11** (0.05)	-0.07** (0.03)	-0.19*** (0.05)	-0.22*** (0.04)
LCPIDIFF [-1]	a	a	a	0.07** (0.03)	a	a
LMILCENT [-1]	0.23*** (0.03)	0.20*** (0.03)	0.17*** (0.03)	0.17*** (0.03)	0.24*** (0.03)	0.23*** (0.03)
LDEATRAD	a	0.05** (0.02)	a	a	a	a
No of units	69	62	91	77	61	83
R square	0.08	0.07	0.04	0.10	0.10	0.18
N	885	775	1102	933	752	996

Note: The figures are parameter estimates and standard errors (in parentheses), respectively. LGDPGRO = ln real GDP growth; LGINI = ln gini index; LGNPCAP = ln GNP per capita; LCPIDIFF = ln consumer price index, annual change; LMILCENT = ln military expenditures/GNP; LDEATRAD = ln deaths from domestic violence 1963-77; except for LDEATRAD, all explanatory variables are lagged one year [-1]. Coefficient significant \*\*\* = at the 1 per cent level (2-tailed test), \*\* = 5 per cent level and \* = 10 per cent level; a = not significant; R square is for 'within effects' in the fixed effects model and for overall effects in the random effects model; no of units = number of cross-sectional units taken into account by the analysis.

in all of the fixed effects equations and in the random effects model for LDEATREF. Its coefficient loses statistical significance in the random effects models for LHUMEMER and LCHE. In other words, when country-specific differences are taken into account, economic inequality is inversely related to humanitarian emergencies. What are the likely reasons for this counterintuitive association? First, as we noted, our Gini index is quite invariant, and the cross-sectional unit effects are likely to capture a portion of the variation between the Gini and the dependent variables. This applies particularly to the fixed effects models where unit effects are specifically captured in the country dummies.<sup>17</sup> Second, the countries experiencing humanitarian emergencies also lack data on the Gini index. Among countries with high income inequality, we are more likely to have data on those that did not experience emergencies, such as Brazil and Chile, than on countries with emergencies, such as Somalia, Liberia, and Zaire.

The impact of the level of economic development is also weaker than in the previous models. Like the Gini index, LGNPCAP is quite invariant and unit effects seem to capture its variation particularly with LDEATREF. Death tradition (LDEATRAD) is significant only in the random effects model for LDEATREF.<sup>18</sup> GDP growth is still inversely, but sometimes statistically insignificantly, related to our different measures of dependent variables. Inflation is directly associated with the dependent variables but its coefficient is significant only in the random effects model for LHUMEMER.

Thus far we have presented five specifications for our three quantitative indicators of humanitarian emergencies: the OLS, GLS (Prais-Winsten), Tobit, fixed effects and random effects models. Which models are to be preferred? The first choice concerns whether or not one should account for the heterogeneity of the countries in the sample. The F test rejected the hypothesis of equal constant terms for the cross-sectional units, indicating that there are indeed differences across cross-sections. Also the Breusch-

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<sup>17</sup> The country dummies are not reported in table 6. In the models for LDEATREF, LHUMEMER AND LCHE there are 69, 77 and 83 dummy variables, one for each cross-sectional unit.

<sup>18</sup> The fixed effects within-country estimation does not allow us to assess its impact on the dependent variables as the variable measures deaths from domestic violence, 1963-77, and is invariant in our data for 1980-95.

Pagan Lagrange multiplier test indicated that the random effects model is preferable over the OLS with no unit-specific effects.

The second choice, then, becomes one between the fixed effects (LSDV) and the random effects model. There are some arguments that favour the LSDV model. One of the assumptions of the random effects model is that the individual effects are uncorrelated with the other regressors. If they are correlated, the random effects treatment may suffer from inconsistency due to omitted variables. According to a Hausman specification test, this assumption of the random effects model is not fulfilled.<sup>19</sup> Random effects models generally warrant a more specified theory than fixed effects models. To our knowledge this is the first effort to model humanitarian emergencies – we do not have a well-specified theory in hand. Furthermore, as Greene notes, the fixed effects model may be viewed as applying only to the cross-sectional units in the study, not to additional ones outside the sample. Our sample of 124 less-developed countries leaves few outside. Thus the cross-sectional units are not drawn from a large population in which case the random effects model would be more appropriate (Greene 1993: 469). One of the standard arguments against the least squares dummy variable model is the loss of degrees of freedom. In our case we lose 60-90 degrees of freedom, depending on the model, but that still leaves us 750 to 1100 to work with.

From the point of view of this study, the prevalence of the fixed effects model is a double-edged sword. On the negative side, relatively invariant regressors such as the Gini index and GNP per capita are problematic, because their variation with the dependent variable is partly captured by the country dummies. Death tradition is excluded from the analysis altogether because it is a constant. Thus some variables that we hypothesized to be related to humanitarian emergencies are not estimated as such by the fixed effects model. On the positive side, we can perhaps have faith in the variables that fulfil the promise, military centrality being the most robust variable of all. The counterintuitive finding on the Gini index also reminds us of the dangers associated with the data gaps in our

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<sup>19</sup> The Hausman specification test allows us to test for orthogonality of the random effects and the regressors. Under the hypothesis of no correlation, both the ordinary least squares in the LSDV model and generalized least squares of the random effects model are consistent, but OLS is inefficient. Under the alternative, OLS is consistent, but GLS is not. Therefore, under the null hypothesis, the two estimates should not differ systematically.

sample, which tend to be greater among countries that experience humanitarian emergencies.

**Probit Analysis.** Earlier we expressed doubts on the construction and analysis of binary dependent variables of humanitarian emergencies and have thus far resorted to an analysis of quantitative responses. However, the descriptive statistics demonstrated that the majority of observations in DEATHREF and HUMEMERG are zeros. The tobit models further revealed that the countries for which we have data and that are included in the analyses are those that tend to have many censored (= zero) observations. HUMEMERG especially has so many zeros that it is easier to conceive of it as a dichotomous rather than a quantitative variable. For our probit analysis, rather than establishing arbitrary thresholds for our variables between complex humanitarian emergency and non-emergency countries, we set DEATHREF and HUMEMERG equal to 1 for every non-zero observation and zero otherwise (CHE has no zero observations and is better conceived of as a quantitative response). For HUMEMERG this means that whenever a country experienced both battle deaths and refugees it is coded as 1 while the presence of either deaths or refugees is sufficient for DEATHREF.

By using probit probability models to analyze the dichotomous dependent variables we can further strengthen the validity of our previous findings. Furthermore, we gain the advantage of being able to express the effect of the explanatory variables on the probability of humanitarian emergencies.<sup>20</sup> Before going to regressions, we present some additional descriptive statistics with a one-way analysis of variance, where we compare the means of the explanatory variables without and during humanitarian emergencies (for HUMEMERG, table 7).

In looking at the first row, we notice that the mean of GDPGRO is about 1.8 per cent yearly for cases without emergencies and about -0.5 per cent for cases with emergencies, which number just over one hundred, while the sample mean is about 1.6 per cent. The difference is significant in a one-way analysis of variance at the 1-per cent level. GNP per capita is about \$1300 for non-emergency cases and \$550 for emergency cases. During

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<sup>20</sup> The usual probit coefficients give us the effect on the odds and are thus difficult to interpret. However, we follow a standard procedure of evaluating the coefficients at the mean of the dependent variable which allows us to assess the change in the probability of humanitarian emergencies resulting from one unit increase in an explanatory variable.

TABLE 7  
HUMANITARIAN EMERGENCIES (HUMEMERG): COMPARISON OF MEANS

Explanatory variable	Dependent variable	N	Mean	Std. Dev.	Std. Error	Minimum	Maximum
GDPGRO***	Dummy for 0	1140	1.82	6.84	0.20	-40.30	26.10
	Humemerg 1	109	-0.46	9.62	0.92	-52.30	20.70
	Total	1249	1.63	7.15	0.20	-52.30	26.10
GNPCAP***	Dummy for 0	1274	1277.61	1216	34.08	90	8220
	Humemerg 1	108	548.35	437	42.12	80	2450
	Total	1382	1220.62	1190	32.02	80	8220
GINI	Dummy for 0	1061	41.16	10.71	0.33	19.49	64.57
	Humemerg 1	85	42.23	7.48	0.81	28.90	55.06
	Total	1146	41.24	10.51	0.31	19.49	64.57
CPIDIFF**	Dummy for 0	953	75.70	532	17.24	-12.89	11749
	Humemerg 1	115	238.39	1249	116.52	-13.06	10205
	Total	1068	93.22	649	19.88	-13.06	11749
MILCENT***	Dummy for 0	1198	3.29	2.96	8.5E-02	0.20	29.10
	Humemerg 1	141	7.51	7.42	0.63	0.80	34.20
	Total	1339	3.74	3.91	0.11	0.20	34.20
DEATRAD**	Dummy for 0	1306	53615	273712	7573	0.00	1995163
	Humemerg 1	194	12145	19458	1397	0.00	81860
	Total	1500	48251	255861	6606	0.00	1995163
TOT80	Dummy for 0	857	90.90	26.21	0.90	28.88	374.57
	Humemerg 1	103	88.29	14.26	1.41	32.36	118.28
	Total	960	90.62	25.21	0.81	28.88	374.57
TOTCHANG	Dummy for 0	784	-1.40	13.70	0.49	-50.28	116.77
	Humemerg 1	96	-1.95	11.32	1.16	-42.36	22.94
	Total	880	-1.46	13.46	0.45	-50.28	116.77
ODAPOGRO	Dummy for 0	980	49.43	1027.44	32.82	-556.25	31757
	Humemerg 1	149	30.04	182.93	14.99	-89.47	2134
	Total	1129	46.87	959.49	28.56	-556.25	31757
ODAPO80	Dummy for 0	1045	185.82	353.56	10.94	-218.21	4129
	Humemerg 1	158	185.74	142.60	11.34	6.87	804
	Total	1203	185.81	333.51	9.62	-218.21	4129

See note on page 37.

Note: 0 = Cases with no humanitarian emergencies, 1 = humanitarian emergencies; \*\*\* = means are different between the two groups at the 1 per cent, \*\* = 5 per cent level of significance. TOT80 = terms of trade index, 1980 = 100, TOTCHANG = terms of trade, annual change, ODAPOP80 = official development assistance index, 1980 = 100, ODAPOGRO = official development assistance per population, annual change.

humanitarian emergencies countries spent, on average, 7.5 per cent of their GNP on the military whereas otherwise they spent 3.3 per cent; these differences are also significant at the 1-per cent level. In addition, inflation and tradition for violent conflict are higher for the emergency cases but the difference is significant only at the 5-per cent level. There is no difference in the Gini index, terms of trade level or change, and official development assistance or change between emergency and non-emergency cases. These comparisons generally corroborate our earlier findings. However, only one look at the standard deviations and maximum values in the table reminds us that the means of some variables, especially that of death tradition, are inflated due to extremely high values in one or the other category. The differences between the means of these variables are thus somewhat artificial. In the regression analyses the importance of extreme values is far less important due to the logarithmic transformations made on the variables.

In discerning the effects of individual variables, we need to use multivariate probit regression analysis (table 8). In the probit models for LDEATREF and LCHE, all coefficients underlying the probabilities are signed as expected and, with the exception of inflation (LCPIDIFF), and IMF intervention (LIMFGNP) in the model for LHUMEMER, they are also statistically significant. This reinforces the conclusion that, holding other variables constant, neither inflation nor IMF intervention are robustly associated with humanitarian emergencies.

In interpreting the coefficients we note, *inter alia*, that: (1) a 10 per cent increase in GDP growth reduces the probability of a humanitarian emergency (LHUMEMER) by 4.1 per cent; (2) a 100 per cent increase (doubling) in GNP per capita reduces the probability of an emergency by 3 per cent; (3) a 10 per cent increase in the Gini index increases the probability of an emergency by 1.2 per cent; (4) a 100 per cent increase (doubling) in military expenditures/GNP increases the probability of an emergency by 2.3 per cent; and (5) a 100 per cent increase (doubling) in deaths from political violence, in 1963-77 would have increased the

probability of an emergency by 1.3 per cent. The underlying coefficients of inflation and IMF finance/GNP in the model for LDEATREF are not statistically significant.

Notice that for LDEATREF the changes in probabilities are greater for each percentage increase in the explanatory variable. For example, a 100 per cent increase in GNP per capita reduces the probability of an emergency by 13 per cent; a 10-per cent increase in Gini increases this probability by 2.5 per cent; and a 100 per cent increase in deaths from political violence would have increased an emergency's probability by 4.4 per cent. The probabilities are higher because for LDEATREF either battle deaths or refugees qualify for an emergency where both are required for LHUMEMER.

Our quantitative empirical analysis corroborates some of the hypotheses on the sources of humanitarian emergencies while rejecting and raising doubts on others. We will now move on to elaborate on our hypotheses in light of these findings as well as case study evidence.

TABLE 8  
PROBABILITIES OF HUMANITARIAN EMERGENCIES: PROBIT MODELS

Explanatory Variables	(1) LDEATREF	(2) LHUMEMER
LGDPGRO [-1]	-0.82* (0.45)	-0.41** (0.20)
LGINI [-1]	0.25*** (0.10)	0.12** (0.05)
LGNPCAP [-1]	-0.13*** (0.03)	-0.03** (0.01)
LIMFGNP [-1]	-0.07*** (0.03)	-0.014 (0.011)
LCPIDIFF [-1]	0.05 (0.04)	-0.01 (0.02)
LMILCENT [-1]	0.05* (0.028)	0.02* (0.01)
LDEATRAD	0.04*** (0.01)	0.01*** (0.003)
obs. P	0.33	0.08
pred. P	0.30	0.05
Log Likelihood	-309.79	-136.60
Pseudo R square	0.13	0.11
N	562	562

Note: The figures are changes in probabilities and standard errors (in parentheses), respectively. LGDPGRO = ln real GDP growth; LGINI = ln gini index; LGNPCAP = ln GNP per capita; LIMFGNP = ln use of IMF credit/GNP; LCPIDIFF = ln consumer price index, annual change; LMILCENT = ln military expenditures/GNP; LDEATRAD = ln deaths from domestic violence 1963-77; except for LDEATRAD, all explanatory variables are lagged one year [-1]. The underlying coefficient is significant \*\*\* = at the 1 per cent level (2-tailed test), \*\* = 5 per cent level and \* = 10 per cent level; 'obs. P' = observed probability, 'pred. P' = predicted probability at the mean of the dependent variable; pseudo R squared = least squares goodness-of-fit equivalent of maximum-likelihood estimation.

#### IV STAGNATION AND DECLINE IN INCOMES

Since economic deceleration or collapse can disrupt ruling coalitions and exacerbate mass discontent, we should not be surprised that since 1980 the globe, particularly Africa, has been more vulnerable to political violence and humanitarian emergencies. From 1960-73 to 1973-96 (and especially after 1980), growth decelerated in both LDCs and developed countries (DCs) (Nafziger 1997:13-7, based on World Bank data). Africa especially experienced a great descent in real GDP per capita after 1973. In sub-Saharan Africa, growth fell from 2.0 per cent yearly, 1966 to 1973, to -0.7 per cent yearly from both 1974 to 1984 and 1985 to 90, and -0.9 per cent from 1991 to 1994 (World Bank 1996a:77; World Bank 1996b:18).

The majority of countries with humanitarian emergencies have experienced several years (or even decades) of negative or stagnant growth, where growth refers to real growth in gross national product (GNP) or gross domestic product (GDP) per capita.<sup>21</sup> Virtually all emergencies listed in Väyrynen 1996, tables 1 and 4, from 1992 to 1995 were preceded by slow or negative economic growth. Indeed twelve of the sixteen Afro-Asian countries listed in these tables, for which data exist, had negative growth in the preceding period. Rwanda, Angola, Liberia, Sudan, Somalia, Mozambique, Ethiopia-Eritrea, Sierra Leone (from sub-Saharan Africa), Lebanon, Algeria (from the Middle East), Afghanistan, and Iraq (from Asia) had negative growths in real GNP per capita in the years 1980 to

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<sup>21</sup> GNP is the total output of goods and services in terms of income earned by a country's residents, and GDP the total output of goods and services in terms of income within a country's boundaries.

1991, while Burundi, South Africa (the sub-Sahara), Sri Lanka, and Turkey (Asia) had positive growths (World Bank 1993b:238-9)

Widespread negative growth among populations where a majority is close to levels of subsistence increases the vulnerability to humanitarian disasters. Consider low- and middle-income (developing) countries. From 1980 to 1991, 25 of 35 (71 per cent of) sub-Saharan African countries and 40 of 58 (69 per cent of) Afro-Asian countries experienced negative growth, according to the World Bank's *World Development Report* (1993:238-9). In contrast, from 1960 to 1980, only 8 of 29 (28 per cent of) sub-Saharan countries and 9 of 53 (17 per cent of) Afro-Asian countries (which includes three, Israel, Hong Kong, and Singapore, which have since graduated to high-income-country status) had negative economic growth, according to the earlier World Bank annual (1982:110-1). In addition, the positive growth of Latin America and the Caribbean during the 1960s and 1970s also reversed to a negative rate in the 1980s, according to the same World Bank sources.

These figures suggest that the increase in humanitarian emergencies in the 1990s is linked to the developing world's disastrous growth record of the 1980s.<sup>22</sup> Moreover, while humanitarian emergencies contributed to reduced (often negative) growth, according to our econometric tests, the direction of causation is weaker than from growth to emergencies. Still, contemporary humanitarian disaster is rarely episodic but is usually the culmination of longer-term politico-economic decay over a period of a decade or more. Negative growth interacts with political predation in a downward spiral, a spiral seen in African countries such as Angola, Mozambique, Ethiopia, Sudan, Somalia, Liberia, Sierra Leone, Zaïre (Congo), and (post-1980) Nigeria. The metaphor appears to be not that of steadily climbing a mountain to the summit of high material welfare and ethnic harmony, but of Sisyphus pushing a huge rock uphill, where every slip means backsliding or even plunging to the abyss below.

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<sup>22</sup> Nafziger 1996: 17-19 provides details for countries experiencing humanitarian emergencies.

## V INCOME INEQUALITY

Our regressions indicate that high income inequality (measured by a Gini coefficient) is associated with political conflict and complex humanitarian emergencies. Humanitarian emergencies are more likely if the less advantaged can identify the sources of their poverty and suffering. Sometimes, as in Nicaragua in the late 1970s and El Salvador, and Guatemala in the 1980s, high and increasing inequality, long-term economic decline, and political repression spur guerrilla warfare against a ruling oligarchy. Pastor and Boyce (1997:v, 2) argue that, in Central America, 'longstanding tensions arising from deep economic [inequalities], particularly in the distribution of land, provided the tinder for political violence, macroeconomic crises added a spark, external intervention fuelled the wars, and armed conflict propelled a downward economic spiral.' But the following examples of Nigeria and South Africa illustrate the diverse patterns of how discriminatory government policies cause economic inequality, fuel social discontent, and lead to political conflict and humanitarian emergencies. These dynamics may even occur when either the nation's real per-capita GDP is growing, as in Nigeria, or when the disadvantaged group's economic position is improving, as for nonwhite South Africans from the 1970s through the early 1990s.

### **5.1 Nigeria: increased elite inequality during rapid growth**

As indicated before, humanitarian disasters rarely occur in high-income countries. However, shouldn't we expect some instances where developing countries are split asunder into a humanitarian crisis from conflict over the potential for abundant resources and rapid economic growth? Yes, this can happen, as illustrated by the Nigerian-Biafran war, 1967-70, in which perhaps four million people died from hunger and other war-related causes and several million people were displaced. The war was fought for control of Nigeria's rich resources, especially in oil, but in the mid-1960s, political elites from the Eastern Region (subsequently Biafra) expected economic loss in the midst of rapid Nigerian economic growth. Election fraud and manipulation during Nigeria's 1964-65 elections undermined the previously critical position of Igbos, the dominant ethnic group in the Eastern Region, in the federal coalition. The East, which had produced two-thirds of Nigeria's petroleum, lost profits and other tax revenues from oil under a change in formula for revenue allocation. Moreover, Igbo and other Eastern ethnic groups were losing in the contention for key positions

in the federal civil service and modern sector of Lagos, and had fled from business and high-level employment in the politically dominant North. Thus, Igbo political elites, government employees, and emigré business people experienced not only relative, but also absolute, economic decline.

The Nigerian civil war followed a period of 3 per cent real annual growth in GDP per capita from fiscal years' 1958/59 to 1965/66 (at constant 1962/63 prices); petroleum expansion led the way, but industrial and agricultural growths were also steady. Moreover, in the mid to late 1960s, Nigeria's regional elites foresaw some of the growth potential of the subsequent decade. Thus, despite the massive resource diversion and destruction, GDP per head only fell 4 per cent yearly during the war. In addition, Nigeria's oil-fuelled real economic growth per person accelerated after the war to 8 per cent yearly from fiscal years' 1969-70 to 1978-79 (at 1974/75 prices, a year of high oil prices, thus moderately overstating growth for the period) (Nafziger 1983:93-122, 139-42, 178-81).

But Nigeria's case is an exception that almost proves the rule. In few cases is a current humanitarian disaster a conflict over the potential for rapid economic growth; most instead are struggles to maintain slices of shrinking economic pies.

## **5.2 South Africa: inequality under apartheid**

The South African case demonstrates that, if the perceived inequality is sufficiently grave, even improved material welfare for the disadvantaged group will not guarantee the absence of conflict. South Africa's real GDP per capita stagnated or declined from the early 1970s through the early 1990s.<sup>23</sup> However, per-capita incomes of the white population fell, while the per-capita incomes of the African population apparently increased slightly, at least during the period between 1985 and 1990 (Schlemmer 1994:100). Still, a survey conducted in 1988 demonstrated that only a very small proportion of a nation-wide sample of the black population was satisfied with various dimensions of their lives. More importantly, the results showed a deterioration of over 40 per cent in blacks' perceived life satisfaction as compared with a survey in 1983 (Möller, Schlemmer, and du Toit 1989). Why did grievances and dissatisfaction among the African population rise as its average income increased?

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<sup>23</sup> In 1990, real GDP per capita was about 90 per cent of its level in 1975 (Esterhuysen 1992:23). See also Nafziger 1997:15, citing annual World Bank data.

The political exclusion of the African population by the apartheid regime doubtless accounts for a great deal of the generalized dissatisfaction, but the role of income differentials should not be discounted either. To Africans, the increase in incomes during the previous two decades may have been insufficient, considering the substantial discrepancies in favour of the white population. In 1992, at the peak of the *de facto* civil war which led to the toppling of apartheid two years later, the purchasing-power adjusted GDP per capita of black, Asian, and mixed-race South Africa was I\$ (international dollars) 1,710, about the same as Senegal's I\$1,680, and in excess of the I\$1,116 for Africa as a whole. Yet this low income for 36.1 million nonwhite South Africans stood in stark contrast to that of 7.3 million whites, I\$14,920 income per capita, a figure higher than New Zealand's I\$13,970 (Nafziger 1997:32).

South Africa's Gini coefficient of income concentration was 0.65, with the top 10 per cent of the population receiving more than 50 per cent of the national income, while the bottom 40 per cent received less than one tenth. This made South Africa, alongside Mexico and Brazil, one of the countries with the most unequal distribution of income in the world (Schlemmer and Giliomee 1994:1). Esterhuysen (1992:24) notes that even during the country's rapid growth in the 1960s, wealth failed to trickle down 'in any significant manner' to the black population, creating mistrust in the benefit of growth to the poor. Moreover, life expectancy, an indicator of health, was 52 years for blacks, 62 for Asians and mixed races, 74 for whites, and 54 for Africa generally, while the adult literacy rate was 67 per cent for nonwhites and 85 per cent for whites (Nafziger 1997:32).

It was not difficult for the African National Congress (ANC) to mobilize the masses against the apartheid regime as the perceived source of inequality. Both inequality and the emergency resulted from the actions of the regime, which dug its own grave by a conscious policy of discrimination against the majority of the population. There is mounting evidence that even the destructive political conflict of 1990-94 between the ANC and the Inkatha Freedom Party was directly manipulated and fuelled by the regime in its effort to maintain power (Auvinen and Kivimäki 1997:9-10, 16-17). The South African case illustrates how economic inequality, combined with authoritarian structures and rules of governance, contributes to humanitarian emergencies.

### 5.3 Conclusion

High income inequality can be a source of humanitarian emergencies in both rapidly- and slow-growing countries. However, once a population is dissatisfied with income discrepancies and social discrimination, as the majority nonwhites were in white-ruled South Africa, the rising expectations associated with incremental reductions in poverty and inequality may actually spur the revolt, conflict, and state hostile action that exacerbates the probability of a humanitarian emergency (Davies 1963:5-19).

## VI INFLATION

Our regression analyses indicate that inflation is associated with humanitarian emergencies although we suggest that inflation may capture some income-distributional changes left unaccounted for by the invariable Gini coefficient. Inflation is indicative of an unresolved conflict over incomes claims which the government has not been able to accommodate. Relative deprivation theory suggests that the more rapid the inflation, the more discontented the population, and the greater the likelihood of political conflict. Inflation reduces purchasing power and breeds uncertainty within different social groups. Governments that seek to maintain legitimacy and power by indexing wages and prices tend to compensate their major constituencies – the military, government employees, and organized labour in the politically mobilized urban areas, penalizing those who are left outside the system. This frequently includes poor people in the informal sector, who are rarely crucial for the government's support.

To avoid social unrest, the government may even compensate informal-sector poor by other means such as subsidies for food and fuel. In the absence of any indexation, the 'inflation tax' contributes to a growing sense of social and economic injustice. This is the basic mechanism through which inflation may serve as a source of discontent and incite conflict behaviour, particularly in the cities.

The thesis on inflation's politically destabilizing effects is backed by empirical evidence. According to Franzosi, political strikes can be expected to vary directly with high levels of inflation, although the

relationship may be correlational rather than causal (Franzosi 1989, 348-353). In Latin America, 1976-82, inflation was associated with 'austerity protest' (Walton and Seddon 1994, 44). Furthermore, in sub-Saharan Africa, inflation was found to be particularly destabilizing, whereas purchasing-power growth decreased the number of disturbances (Morrisson *et al.* 1993, 10-11). In general, social unrest from inflation may invite repressive responses from authoritarian regimes, which tend to fuel violence and spur humanitarian crises.

## VII ELITE INTERESTS DURING ADJUSTMENT PROGRAMMES

Our empirical evidence does not support the hypothesis that the use of IMF credit as a percentage of GNP contributes to complex humanitarian emergencies; rather, most of our tests suggest that any relationship is the opposite: that humanitarian emergencies fall as IMF credit proportions rise.<sup>24</sup> Thus, we need to reformulate the explanation for the relationship between adjustment and emergencies. Our revision reinforces the importance of slow growth as a determinant of humanitarian disasters. Slow (or negative) growth, frequently accompanied by chronic external deficits and debt, intensifies the need for economic adjustment and stabilization. Under current rules of the international economic system, countries requiring adjustment must, as a last resort, either acquire IMF credits or IMF approval for loans, aid, or debt reduction from the World Bank, other international agencies, bilateral contributors, or commercial banks. Those countries that could meet IMF conditions were less likely to be vulnerable to a humanitarian crisis than countries that lacked access to IMF and other funds or concessions.

Let us illustrate by discussing sub-Saharan Africa (henceforth Africa), which is disproportionately represented both among countries with slow

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<sup>24</sup> Furthermore, our finding is corroborated when we replace in the equations IMFGNP with a dummy variable of the Fund's high-conditionality intervention, as indicated by the presence or absence of standby arrangements and Extended Fund Facilities ('CONDFIN'). Whereas IMFGNP includes the use of all IMF credits except drawings from the Reserve Tranche, CONDFIN only includes non-concessional finance and thus would be expected to pick up the conflict-inducing impact of IMF intervention better than IMFGNP. However, also CONDFIN is inversely associated with our different measures of humanitarian emergencies.

growth and external disequilibria, and major humanitarian emergencies. In *Inequality in Africa* (1988), Nafziger shows how shrinking economic pie slices and growing political consciousness added pressures to national leaders, whose response was usually not only anti-egalitarian but also anti-growth, hurting small farmers' incentives, appropriating peasant surplus for parastatal industry, building parastatal enterprises beyond management capacity, and using these inefficient firms to dispense benefits to clients. Regime survival in a politically fragile system required marshalling elite support at the expense of economic growth.<sup>25</sup> Spurring peasant production through market prices and exchange rates interfered with state leaders' ability to build political support, especially in urban areas.

### **7.1 Liberalization and adjustment after 1980**

More than a decade of slow or negative per-capita growth, rising borrowing costs, reduced concessional aid, a mounting debt crisis, and the increased economic liberalism of donors and international financial institutions, forced African elites to change their strategies during the 1980s. In 1987, International Monetary Fund (IMF) Managing Director Jacques de Larosiere asserted: 'Adjustment is now virtually universal [among LDCs]. Never before has there been such an extensive yet convergent adjustment effort.'<sup>26</sup> After 1979, when most African countries were facing external debt crises and chronic international balance of goods and services deficits, economic policymaking, characterized by structural adjustment, macroeconomic stabilization, and liberalization, has been largely determined by conditions of IMF/World Bank lending. The IMF became gatekeeper and watchdog for the international financial system, because an IMF 'seal of approval' of a country's macroeconomic stabilization programme served as a necessary condition for World Bank or bilateral aid or loans, debt reduction, or commercial bank lending. IMF approval usually required price decontrol, currency depreciation, privatization, government spending reductions, economic structural changes, and various forms of market liberalization. Virtually all LDCs had to adopt these policies to participate in the world economic system. The evidence in table 3 is consistent with the fact that those LDCs that

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<sup>25</sup> Ake (1996:1, 18) reinforces this contention when he states that for Africa, 'the problem is not so much that development has failed as that it was never really on the agenda in the first place .... [W]ith independence African leaders were in no position to pursue development; they were too engrossed in the struggle for survival.'

<sup>26</sup> *IMF Survey*, 23 February 1987, p. 50.

were more successful in receiving IMF (and other international financial and bilateral) credits and aid also experienced less conflict and humanitarian emergencies. As Bienen and Gersovitz (1985) argue, cuts in government spending are less likely to contribute to political conflict than the alternative of debt repudiation and exclusion from credit. Those that lacked access to the international financial system still had to play by the same rules of adjustment and liberalization, but were nevertheless highly vulnerable economically and politically.

Any substantial economic change, such as the liberalization and adjustment of the 1980s and 1990s, provided chances for challenging existing elites, threatening their position, and often contributing to increased opportunistic rent-seeking and overt repression. And cuts in spending reduced the funds to distribute to clients, and required greater military and police support to remain in power. All these changes increased the potential for political instability and a humanitarian emergency.

With liberalization and adjustment, similar to the controls of the 1960s and 1970s, contemporary African elites used their dependency on the global economy as a way to consolidate power, but they used different approaches. Indeed the distribution of benefits and costs from stabilization and restructuring have influenced the shifts of power and money within African countries. Of course, many African elites saw the handwriting on the wall, with some African political leaders, finance ministers, and government economists (similar to many of their counterparts in Central Europe in the 1990s) experiencing an overnight conversion from Marxism to the liberalism and monetarism of Milton Friedman. Most African elites supported liberalization, becoming, with their accomplices and clients, the *nouveau riche*. For privatization (which required access to credit), price decontrol, and restructuring offered these elites new opportunities for expanded clientage. Moreover, controlling restructuring also enabled these elites to protect their interests from reform and competition. Still the opportunities also came with the risk of a shrinking power base, increased conflict with newly rising classes, and displacement by new economic and political groups.

Sub-Saharan external debt increased from \$56 billion in 1980 to \$97 billion in 1985 to \$174 billion in 1990 to \$194 billion in 1992 to \$223 billion in 1995 (World Bank 1993a:170-1; World Bank 1996c). The

origins of the African debt crisis have been widely discussed. In the early 1980s, the sub-Saharan's international goods and services deficits, continuing from the previous decade, worsened from external shocks, such as the recession in the DCs, a declining commodity terms of trade, and the decline in real official development assistance (ODA), in the midst of rapidly increasing world real interest rates. But there had also been widespread misdirection by political elites during the 1970s, when many African countries borrowed to expand their patronage resource base without increasing their capacity to service the foreign debt in subsequent years.<sup>27</sup>

## **7.2 Adjustment, clientelism, and predatory rule in Africa**

After 1979, with the increased emphasis by the IMF, World Bank, and bilateral and multilateral funding agencies on competition, deregulation, liberalization, and the privatization and commercialization of customary state activities, the African political elites needed to form new patterns of clientage in order to maintain legitimacy. Slow growth and chronic external deficits, together with the failure to stabilize and adjust the economy under pressure from the international financial institutions and high-income Organization for Economic Cooperation and Development (OECD) countries to liberalize and deregulate, was conducive to patrimonialism and predation, especially in Africa.

Authoritarian regimes, which are less dependent on popular pressures and can use repression, may be better equipped to implement adjustment policies than democratic regimes (Lafay and Lecaillon 1992, 95; Kaufman 1985; Nelson 1990:22-24; Sheahan 1980). Many authoritarian governments have also been committed to implementing adjustment policies since their legitimacy is dependent on good economic performance. Thus these governments have been more prone to choose orthodox macroeconomic stabilization policies than their democratic counterparts, especially in Latin America (Kaufman and Stallings 1989:202-212; Nelson 1990:334-335). If we identify political authoritarianism with a lack of political rights and civil liberties and abuse of human rights, several different types of governance fall under the definition. One type is the 'efficient authoritarianism' of Pinochet's Chile (1973-89) or Alberto Fujimori's Peru (1990- ). A very different type is the

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<sup>27</sup> Nafziger 1993 discusses Africa's slow growth and external disequilibrium, and subsequent efforts to adjust in more detail.

'weak authoritarianism' often found in Africa, where introducing stabilization and adjustment, as in the 1980s and 1990s, proved to be a threat rather than an opportunity.

Most African states are soft states, in which the authorities who decide policies rarely enforce them (if enacted into law) and only reluctantly place obligations on people (Myrdal, vol. 2, 1968:895-900). These states are dependent on buying political support through concessions to powerful interest groups. During the 1960s and 1970s, most African ruling elites eschewed policies promoting competition, decentralized decision-making, and reliance on market prices and exchange rates, as these policies reduced their ability to use subsidies, rebates, and inducements to strengthen alliances and patron-client relationships.

Clientelism, the dominant pattern in Africa, is a personalized relationship between patrons and clients, commanding unequal wealth, status, or influence, based on conditional loyalties and involving mutual benefits. Clientelism overlaps with, but reaches beyond, ethnicity. The ethnic identity of the client may be amalgamated with, widened, or subordinated to the identity of the patron, who exchanges patronage, economic security, and protection for the client's personal loyalty and obedience. Clientelism often operates within a political party, as in the case of the *Parti Democratique de la Côte d'Ivoire* (PDCI), or the Northern People's Congress, 1960-66, an instrument of Northern Nigeria's traditional aristocracy (Lemarchand 1972:68-90).

In several African countries that experienced negative growth and political decay in the 1980s and early 1990s, ethnic and regional competition for the bounties of the state gave way to a patrimonial state. In reaction to economic decline and liberalization, rulers in states such as Nigeria, Sierra Leone, Zaïre, and Liberia adopted predatory rule. Predatory rule is that by a personalistic regime ruling through coercion, material inducement, and personality politics, a regime that tends to degrade the institutional foundations of the economy and state (Lewis 1996:80; Holsti 1996:104-05). In some predatory states, the ruling elite and their clients 'use their positions and access to resources to plunder the national economy through graft, corruption, and extortion, and to participate in private business activities' (Holsti 1997:13-14). Ake (1996:42) contends that 'Instead of being a public force, the state in Africa tends to be privatized, that is, appropriated to the service of private interests by the dominant faction of

the elite.' People use funds at the disposal of the state for systematized corruption, from petty survival venality at the lower echelons of government to kleptocracy at the top.

In weakened African states, such as Zaïre, Nigeria, Sierra Leone, and Liberia, the shrinking external resources after the cold war, together with World Bank (1994:22-51) support of the private-sector (even management contracting) in place of customary state activities in electricity, transport, telecommunications, water, sewerage, roads, and ports, contributed to a patrimonial state, where rulers strengthened their personalistic grip on power in the midst of state and bureaucratic decay by relying on external private and military resources for survival. Predation in Africa frequently means the consolidation of an avaricious dictatorship (Reno 1995:109). According to Ayoob (1995:41), the 'unrepresentative and authoritarian character of many [African] regimes .... spawns a vicious circle of violence and counterviolence as regimes are challenged and react with brutal force.'

### **7.3 African case studies**

Nigeria, a potential humanitarian emergency, is representative of the changes in Africa in the relative importance of government spending. In Nigeria, government expenditures as a percentage of GDP rose from 9 per cent in 1962 to 44 per cent in 1979 but fell to 17 per cent during World Bank structural adjustment programmes (SAPs), such as the one in effect from 1986 to 1990, which emphasized privatization, market prices, and reduced government expenditures. Nigeria centralized power during its 1967-70 civil war with the breakup of four regions into thirteen states, and in the 1970s, as the oil boom enhanced the centre's fiscal strength. Expansion of the government's share of the economy did little to increase political and administrative capacity, but it did increase incomes and jobs that governing elites could distribute to their clients (Nafziger 1993:50). But with a decline in GNP per capita, 1980 to 1990, 12 per cent yearly (partly from falling oil prices), and from 1990 to 1994, 4 per cent annually (World Bank 1996a:34), together with growing pressure from the IMF and World Bank, Nigeria had to reduce both absolute and relative sizes of the government sector.

Nigeria's first structural adjustment loan from the Bretton Woods' agencies started auspiciously, due to President Ibrahim Babangida skilfully playing the World Bank against the IMF for public relations gains. From 1985 to 1986, Babangida conducted a year-long dialogue with the Nigerian public,

resulting in a rejection of IMF terms for borrowing. The Babangida military government secured standby approval from the IMF but rejected its conditions, while agreeing to impose similar terms 'on its own' approved by the Bank. In October 1986, the Bank, with Western commercial and central support, delivered \$1,020 million in quickly disbursed loans and \$4,280 million in three-year project loans (Nafziger 1993:130).

However, in subsequent years, Nigeria's state elites, encouraged by Bank/Fund secrecy, inaugurated and maintained economic adjustment without a supportive constituency. The regime continued power through tactics of 'political manipulation, populist side-payments, elite dispensation, expansion of the parallel economy, and overt repression' (Lewis 1996:87). Liberalization and privatization opened the gates to state elites appropriating public assets for private purposes. Privatization created a wide circle of beneficiaries, as well-connected insiders took advantage of sales and divestiture of liquidated state companies. The opening of bank licenses in Nigeria in 1986 provided a new source of patronage and rent distribution, as investors and managers from the military, civil service, manufacturing, trade, and the professions scrambled to enter banking, especially attracted by dealing in foreign currency.

In the 1990s, the Nigerian government lost hundreds of millions of dollars in revenue from top government officials smuggling petroleum and selling it illicitly. 'For elites,' Lewis (1996:91) contends, 'the state provided special access to nascent markets and illegal activities, and manipulated key policies to provide opportune "rents".' Indeed high-ranking venal military officers and ineffectual civilians abandoned macroeconomic management to use policy levers to enhance their own wealth and provide perquisites for clients. By 1994: 'more than a thousand million dollars annually – equalling as much as 15 per cent of recorded government revenues – flowed to smuggling networks and confidence teams, many of whom operated with connivance of top elites' (Lewis 1996:97). A circle of military elites and civilian allies made extravagant gains, creating a nouveau riche in currency trading, finance, trade, real estate, and speculative activities in contrast to middle-income and low-income populations, whose real incomes were declining.

Sierra Leone was caught in a bind between the end of the cold war and the pressure of liberalization and adjustment of the Bank/Fund. In 1991, the

World Bank, IMF, and bilateral creditors offered loans and debt rescheduling worth \$625 million, about 80 per cent of GNP, if Sierra Leone reduced government expenditures and employment. In response, Freetown heeded the World Bank's advice (1994:22-51) to use private operators to run state services for a profit. But privatization did not eliminate the pressures of clients demanding payoffs but merely shifted the arena of clientage to the private sector. Sierra Leone's ruling elites, needing new ways of exercising power, used foreign firms to consolidate power and stave off threats from political rivals. In the 1990s, Sierra Leonean heads of state have relied on exclusive contracts with foreign firms for diamond mining to 'regularize' sources of revenue in lieu of a government agency to collect taxes, foreign mercenaries and advisors as a replacement for the national army to provide security, and foreign contractors (sometimes the same as the mining or security firms) to provide other state services. In the process, rulers may have found it advantageous to 'destroy state agencies, to "cleanse" them of politically threatening patrimonial hangers-on and use violence to extract resources from people under their control.' To stay in power, hard-pressed rulers in weak African states often had 'to mimic the "warlord" logic characteristic of many of their non-state rivals.' (Reno 1996b:7-8, 12).

In 1994, Zaïre received creditor leniency in return for austerity plans reducing public employment from 600,000 to 50,000. But with the shrinking patronage base, to prevent a coup from newly marginalized groups in the army or bureaucracy, Mobutu, similar to rulers in other retrenching African states, needed to reconfigure political authority; in this situation, foreign firms and contractors served as a new source of patronage networks (Reno 1996b:9). However, indigenous commercial interests that profit from the new rules are not independent capitalists whose interests are distinct from the state. Indeed as Reno (1996b:16) points out, 'Those who do not take part in accumulation on the ruler's terms are punished.'

In Liberia, Charles Taylor used external commercial networks (foreign firms), some a legacy of the Samuel Doe regime of the late 1980s, to control internal power, including a large proportion of old Liberia, and at times, the eastern periphery of Sierra Leone. Taylor's territory has had its own currency and banking system, telecommunications network, airfields, export trade (in diamonds, timber, gold, and farm products) to support

arms imports, and (until 1993) a deepwater port (Reno 1995:111; Reno 1996a:8).

#### **7.4 Adjustment in the former Yugoslavia**

Another example of how failed adjustment policies contributed to a humanitarian emergency is the former Yugoslavia. Woodward (1995) blames the Yugoslav conflict not on historical ethnic hostilities but the disintegration of government authority and breakdown of political and civil order from transforming a socialist society to a market economy and democracy. Yugoslavia's rapid growth during the 1960s and 1970s, fuelled by foreign borrowing, was reversed by more than a decade of an external debt crisis in the midst of declining terms of trade and global credit tightening, forcing austerity and declining living standards, during the 1980s, and early 1990s. Moreover, with the winding down of the cold war and the decline of the importance of Yugoslavia as an independent communist state, the country received less debt relief and concessional aid from the West. In an economy declining largely from reduced external resources and returning guest workers, the political conflicts over the distribution of falling economic resources and rising debt obligations between central and regional governments and the nature of economic and political reform became constitutional crises and ultimately a crisis of state among politicians unwilling to compromise. For example, economic decline fuelled rising Serbian nationalist agitation, contributing to the 1987 'putsch' within the League of Communists of Serbia by Slobodan Milosevic, whose faction broke with the pattern of ethnic compromise; recentralized power within Serbia; overthrew the political leadership in Montenegro and in Serbia's autonomous provinces, Kosovo and Vojvodina; tried to subvert Croatia and Slovenia, the two republics that most vociferously opposed him; and tried to enlarge Serbia at the expense of Bosnia and Herzegovina (Lukic and Lynch 1996:144-99).

For Woodward (1995:383):

The primary problem, however, lay in the lack of recognition and accommodation for the socially polarizing and politically disintegrating consequences of [the 1980s'] IMF-conditionality program .... The austerities of policies of demand-repression led to conditions that could not easily foster a political culture of tolerance and compromise. Instead, the social bases for stable government and democratization were being radically narrowed by

economic polarization between rich and poor, fiscal crises for most government budgets, deindustrialization without prospects of new investment in poorer regions, growing uncertainty and individuals' resort to nonmonetary means of obtaining necessities because of rising inflation, and serious unemployment among young people and unskilled workers that began to affect even the secure jobs and incomes of public-sector professionals, skilled workers, administrators, and their children. The architects of the programs of macroeconomic stabilization and economic austerity ignored the necessity of creating not only social safety nets but even more important a political capacity to recognize and manage these conflicts.

Amidst Yugoslavia's austerity and economic collapse, Bosnia-Herzegovina, an agricultural, forestry, and mineral exporter at the periphery of the economy, was among the most vulnerable, hurt substantially by declining terms of trade and by the loss of export markets to the Middle East, Central and Eastern Europe, and the former Soviet Union. Additionally, Bosnia-Herzegovina suffered substantial deaths, dislocation, and devastation after the outbreak of war in March 1992 (Woodward 1996).

## **7.5 Conclusion**

In Africa in the 1960s and 1970s, the state was the major focus for struggle among ruling elites and between them and the masses. Ruling elites used taxes, government spending, public programmes, market intervention, and indigenization policies to maintain their size and stabilize their rule. But Africa's slow economic growth, particularly since 1979, compelled these elites to reduce the size of the coalition they supported or use repression to extract a greater share of the majority's tiny surplus, increasing the probability of coups or other regime turnovers, and eventual humanitarian disaster. Ironically, heightened insecurity put pressure on the state class to rely even more on short-run palliatives that benefited the military, civil service, and other privileged groups but increased economic disparities and further alienated the masses.

During the 1980s and 1990s, elites in LDCs faced increasing pressure from slow growth and international debt crises, as well as external pressure by donors and international financial institutions to liberalize and privatize. Pressures to cut the size of the state, in the midst of shrinking resources,

put substantial constraints on the ability of elites, particularly in Africa, to reward and sanction political actors, contributing to greater instability and the potential for humanitarian emergencies.

## VIII THE FAILURE OF AGRICULTURAL DEVELOPMENT

### 8.1 The food crisis

According to our regression analysis, slow food production per-capita growth is a source of humanitarian emergencies. A test of lags and leads indicates that slow food production growth is conducive to humanitarian emergencies (when these are defined to exclude its nutritional component) rather than vice versa.

We can illustrate the relationship between food availability and humanitarian emergencies in sub-Saharan Africa. Africa's food crisis since the 1960s has made it especially vulnerable to humanitarian emergencies. Cornia, Jolly, and Stewart (1987) explain how declining real household income (through falling income or rising food prices among the low-income households) reduces household food availability, decreasing nutrient intake and increasing malnutrition, and increasing disease and mortality (especially among infants and children).

From 1962 to 1989, food output per capita grew at an annual rate of 0.5 per cent in developing countries, 0.3 per cent in developed countries, and 0.4 per cent overall, but declined 0.8 per cent in sub-Saharan Africa, meaning that food production there grew more slowly than population. (We use a five-year moving average to smooth out annual weather fluctuations.) Food production per person increased from 1962 to 1989 in all world regions except the sub-Sahara (Nafziger 1997: 175-77).

Africa's daily calorie consumption per capita, 2116 (the same as in the early 1960s and less than the 2197 of the mid-1970s), was 92 per cent of the requirement by the FAO, 1988-90; calorie consumption in all other regions exceeded FAO requirements (United Nations Development Programme 1994:27, 118-20, 132-33, 207-08). Africa's food security index, as measured by the International Fund for Agricultural Development, is low (and falling since the 1960s) (Jazairy, Alamgir, and Panuccio 1992:27, 398-99), not only because of large food deficits but also

because of domestic output and foreign-exchange reserve fluctuations, as well as foreign food-aid reductions. In 1989, Adedeji spoke of 'the humiliation it has brought to Africa in having to go round with the begging bowl for food aid' (1989:2).

Illustrative of the enormity of the sub-Sahara's difference from other LDCs is that while the sub-Sahara and India both produced 50 million tons of foodgrains in 1960, in 1988 India produced 150 million tons (after the Green Revolution and other farm technological improvements) and sub-Saharan Africa (with faster population growth) was still stuck at little more than 50 million tons. India's yield per hectare increased by 2.4 per cent yearly, while the sub-Sahara's grew at a negligible annual rate of 0.1 per cent. Thus, the sub-Sahara, which was on parity with India in 1960, produced only about one-third of Indian output in 1988 (Singer 1990:178-81).

Additionally, the increasing population density on agricultural land has already exacerbated conflict and humanitarian disaster in low-income Africa and Haiti. Population pressure on limited land contributed to the diaspora from the Eastern Region to the rest of Nigeria in the one to two decades before the 1967-70 civil war. The East had a 1963 population density of 1,088 per square kilometre compared to Nigeria's density of 404. Contemporary Rwanda, with only 5 per cent of its population, and Burundi, with only 6 per cent of population living in urban areas and low labour productivity, have a population density of 1,295 persons per square kilometre (Gaffney 1996:17). This density is about the same as that of Italy (1298), which is 67 per cent urban, and exceeds that of France (717), which is 74 per cent urban.<sup>28</sup>

## **8.2 Agricultural policies before liberalization**

Africa's deteriorating food position began before the droughts in the Sahel (including the Sudan and Ethiopia) in 1968 to 1974 and in 1984 to 1985.

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<sup>28</sup> André and Platteau (1997) argue that 'the prevailing state of extreme land hunger [in Rwanda] created a troubled environment which made the most desperate people .... ready to seize any opportunity to change their present predicament or reverse the present order of things .... [T]here can be no doubt that the strained situation engendered by economic scarcities goes a long way towards explaining why violence spread so quickly throughout the country' in 1994.

While the roots of Africa's food crisis can be traced back to colonialism, the continuing crisis is due to African governments' neglect of agriculture. Here we concentrate on the policies of African political elites and government decision-makers in the decade or two before 1979, the period of liberalization.

After independence, African political elites required the support of urban elites and working classes to maintain power. Elites increased their political benefits, not through market prices for smallholders, research and extension on traditional food crops, and recognizing traditional communal property, but by expanding patronage through commercial and estate agriculture, easing land purchase by the urban affluent, and selective projects and subsidies. Furthermore, African governments preferred project-based to price-based policies to increase agricultural supplies because projects help to build and reinforce a political patron-client system.

Despite development plans proclaiming agriculture's priority and rhetoric stressing the poor rural masses, governments used pricing and exchange-rate policies, spending on investment and social services, and subsidies and protection to allocate most resources to cities, a policy of urban bias (Lipton 1977). African politicians responded to the more powerful and articulate urban dwellers. Thus, during the last quarter of the twentieth century, the policies of ruling elites diverted farm land from growing food crops, such as sorghum, millet, and local brands of maize, roots, and tubers for hungry villagers, to produce cash crops, including rice, wheat, hybrid maize, and export crops, like tobacco and natural rubber; this production shift and the greater concentration of wealth and income distribution and its effect on food demand meant that food crops declined more rapidly (or grew more slowly) than cash and export crops (Cornia 1994:217-29). Political leaders spent scarce capital on highways and steel mills, instead of on water pumps, tube wells, and other equipment essential for growing food. Moreover, governments used high-cost administrative and management talent to design office buildings and sports stadiums rather than village wells and agricultural extension services.

In sub-Saharan Africa, there is generally an inverse relationship between farm size and land yields because of the low imputed costs to own labour and the low costs of monitoring and supervising labour on small farms (Ibid., pp. 217-29). Yet there is a policy bias toward large farms, since

government leaders and ministry officials increase clientage more by expanding production in the estate and commercial sector than by the growth of smallholder agriculture. And they profit more by subsidising farm implement, fertilizer, and seed costs than by spurring prices to produce farm goods. Political elites can manipulate farmers better through market intervention than with a free market.

Most African states have tried to keep food prices low to satisfy urban workers and their employers (multinational corporations, indigenous capital, and government). Urban unrest from increasing living costs sometimes has contributed to governments losing power or even being overthrown. To insure political survival, insecure African ruling elites forwent policies promoting rural innovation and reducing urban-rural income gaps.

### **8.3 Agricultural policies during liberalization**

During the liberalization of the 1980s and early 1990s, the World Bank, IMF, and external donors, in setting conditions for agricultural policy in Africa for adjustment loans, emphasized eliminating price distortions. However, empirical studies indicate that farm price distortions comprised only a fraction of the explanation for Africa's reduced average agricultural output (Cleaver 1985; Cornia 1994:221). The rest of the explanation is from infrastructural and other institutional factors such as the insecure tenancy of cultivators, the highly inefficient new private commercial agricultural production (often by favoured urban elites), the limited emphasis on traditional food crops from agricultural research and extension, the increased transaction and litigation costs, and the land, credit, and insurance market imperfections, such as farmers' lack of access to credit, that contribute to greater dualism. But in Africa, the stress of externally funded adjustment programmes on commercialization means a decline in the production of traditional food crops, increased farm shares to medium and large farmers, and an increase in the purchase of farm land by urban elites as a hedge against inflation (Cornia 1994:222-31).

And the emphasis on individual property-rights systems by international financial institutions and African elites has reduced agricultural efficiency. Under most traditional community or village systems, farm families not only have tenure security but land rights are highly transferable. Greater agricultural intensification from population growth gives rise to the assertion for increasingly formal private property rights. Ironically,

however, registering individualized land titles reduces tenure security in the short run, as the number of land disputes surge. Clever, well-informed and powerful individuals jockey to have parcels not previously theirs registered in their own name, while rural masses may be unaware of the implications of registration. Women especially face difficulties in having their customary rights recognized by political authorities. And in the longer run, the high costs of land registration and lack of familiarity with the government bureaucracy displace weak or politically marginalized groups, and redistribute land to the commercial and estate sectors, increasing the concentration of land holdings. As an example, Kenya's systematic, compulsory individualized titling of all farmlands since the 1950s contributed to a substantial gap between the control of rights reflected in the land register and recognized by most local communities, providing opportunities for affluent town dwellers to establish property rights through land registration. In Nigeria, under cover of national development projects, state officials granted extensive land tracts to friends, dispossessing many villagers from their customary lands. But reallocation through individualized titling not only increased inequality but also reduced labour intensity, capital formation, and innovation, contributing to the inverse relationship between farm size and yields noted above (Platteau 1996:29-86; Cornia 1994:222-31).

#### **8.4 Food entitlements, elite violence, and famines**

In our regression analysis, we separate the per-capita food production growth variable as an independent variable from hunger or famine as a part of the dependent variable. Despite lack of support from our econometric analysis, case-study evidence suggests that humanitarian emergencies increase nutritional vulnerability. Relief agencies indicate 20 million deaths from severe malnutrition in 1991 in six African countries where food trade was disrupted by domestic political conflict – Ethiopia, Liberia, Sudan, Somalia, Angola, and Mozambique. Moreover, while, on the one hand, food deficits contributed to refugee problems, on the other hand, the 5 million or so refugees annually fleeing civil wars, natural disasters, and political repression (including before 1990, South Africa's destabilization) added to Africa's food shortages (Daley 1992:115; Goliber 1989:10-11).

Since we are interested in famine as a component of the dependent variable, we integrate politics and economics to explain famine in this section. The conventional economic approach examines food (or total) output and its distribution, focusing on agricultural production, poverty

rates, and Gini indices of concentration. According to this explanation, famine arises from a lack of total food supply. Sen (1981, 1983b, 1995) criticizes this explanation, emphasising that nutrition depends on society's system of entitlement. Entitlement refers to the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she possesses. An entitlement helps people acquire capabilities (like being well nourished). In a market economy, the entitlement limit is based on ownership of factors of production and exchange possibilities (through trade or a shift in production possibilities). For most people, entitlement depends on the ability to find a job, the wage rate, and the prices of commodities bought. In a welfare or socialist economy, entitlement also depends on what families can obtain from the state through the established system of command. A hungry, destitute person will be entitled to something to eat, not by society's low Gini inequality and a high food output per capita, but by a relief system offering free food. Thus, in 1974, thousands of people died in Bangladesh despite its low inequality, because floods reduced rural employment along with output, and inflation cut rural labourers' purchasing power.

Sen argues that food is 'purchased' with political pressure as well as income. Accordingly, one-third of the Indian population goes to bed hungry every night and leads a life ravaged by regular deprivation. India's social system takes nonacute endemic hunger in stride; there are no headlines or riots. But while India's politicians do not provide entitlements for chronic or endemic malnutrition, they do so for potential severe famine through food imports, redistribution, and relief. In Maoist China, the situation was almost the opposite. Its political commitment ensured lower regular malnutrition through more equal access to means of livelihood and state-provided entitlement to basic needs of food, clothing, and shelter. In a normal year, China's poor were much better fed than India's. Yet if there was a political and economic crisis that confused the regime so that it pursued disastrous policies with confident dogmatism, then it could not be forced to change its policies by crusading newspapers or effective political opposition pressure, as in India (Sen 1983a:757-60; Sen 1983b; Sen 1986:125-32; Sen 1987:10-14).

The political economy approach, however, analyzes the behaviour of ruling elites during periods of Darwinian pressures and food crises. This approach goes beyond the Sen approach, to examine ruling elites'

deliberate withholding of entitlement, or even use of violence, to achieve their goals of acquiring or maintaining power, which often involves benefits at the expense of other segments of the population. Thus, according to the political economy interpretation, Mao's effort to increase control through collective labour-intensive water projects during the 1958-60 Great Leap Forward contributed to China's famine, in which per-capita food production from 1957-59 to 1959-61 dropped 25 per cent. Indeed in the midst of Mao's campaign for increasing collectivization in 1959, the pressure of the party establishment contributed to false reports of bumper crops (Prybyla 1970:264-9; Lardy 1983:152-3; Putterman 1993:11).

Sen turns a blind eye to the possibility that the state may be the cause of famine through deliberate policy to transfer resources and food entitlements from a politically marginal group to a politically favoured one. To be sure, Drèze and Sen (1989:5-6) point out that 'the dependence of one group's ability to command food on its relative position and comparative power vis-à-vis other groups can be especially important in a market economy.' But for the two authors, famines and food shortages result from entitlement and state policy failure, and not from state action to damage the food entitlements of a group. They attribute the Soviet famines of the 1930s and the Kampuchean famines of the late 1970s to inflexible government policies that undermine the power of particular sections of the population to command food. Drèze and Sen's emphasis is on the need for public action by a benign state, making decisions about more or less food entitlements, rather than an ill-intentioned state making decisions to intervene in favour of one group at the expense of another and its food entitlement. For Drèze and Sen (1989:17-8), avoiding famine involves the 'division of benefits [from the] differential pulls coming from divergent interest groups,' not the desistance of the denial of groups' entitlements.

As Keen (1994:5) contends, in Sen and Drèze's view, 'There are victims of famine, but few immediate culprits or beneficiaries.' Sen and Drèze do not consider the possibility that states or politically powerful groups that control states may obstruct relief and contribute to famine for rational purposes of their own. Indeed the Drèze and Sen conception of the state is essentially a liberal one, in which the failure to factor in the public interest is perceived as a failure of public policy. Most scholars and international agencies share the Drèze-Sen view, widely perceiving famine as relief 'blunders' and the result of poverty and market forces, and failing to see

how markets are shaped or forced by state-condoned raiding, collusion, and intimidation.

Amidst state building in Africa and other socially heterogeneous post-colonial societies, Ake (1997:2) sees widespread conflict and emergencies (including famine) as almost inevitable, since

State-making is perhaps best understood as the political equivalent of primitive accumulation, except that it is more violent still. It entails conquest and subjugation – conquest, because the state power which is projected in the process is arbitrary power since those on whom it is projected originally owed no political allegiance to the state makers. State making entails revoking the autonomy of communities and subjecting them to alien rulership within a bigger political order, laying claim to the resources of the subordinated territory including claims over the lives of those who live there. To effect these claims, the state must appropriate and monopolize the means of violence.

For ruling elites to organize war and conflict involves shifting alliances with groups and individuals in authority at the local level. Where the centre lacks the resources to 'buy' the loyalty of local elites, it may procure their loyalty by tolerating exploitation at a local level. In political conflict, the need to form alliances with local groups and elites may contribute to increased levels of abuse of civilians and the natural environment. Even civilians may find it safer and more advantageous to join armed exploiters rather than risk becoming one of the unarmed exploited (Keen 1996).

The political economy approach to famine, associated with the emphasis by de Waal (1989), Duffield (1994), and Keen (1994) on famine as an outcome of government's forcible asset transfer from the politically weak to the politically strong, contrasts with that of Sen's economic approach. Duffield and Keen point out that in the 1980s, the Sudanese government, under pressure from a shrinking economic pie, stripped the politically marginal Dinka of cattle and other major assets, distributing these to more favoured ethnic groups (Keen 1994; Duffield 1994:50-69). De Waal (1994:141) contends that marginalized communities in southern Somalia became destitute not only from drought but from forcible alienation of farmland and pasture. Victims usually lacked lobbying power not purchasing power.

As Duffield (1994:55) asserts:

The emergence of a political economy that includes asset transfer is extremely destructive and creates ever-deepening poverty and misery. Moreover, since subsistence assets are a finite resource, once such an economy is established it demands fresh inputs as the wealth of different groups is exhausted. Asset transfer becomes a moving feast on an ethnic table ... [and] once systemic, becomes synonymous with cultural genocide and the destruction of group rights.

Famine is an extended economic and political process, usually a result of the disruption of a way of life, involving hunger and destitution and not just death, and often long-term rather than just transitory. The state may withhold relief from famine victims, allowing more politically influential groups to appropriate the food and resources.<sup>29</sup> Belligerents, such as Nigeria and Biafra in 1967-70 and the Sudanese government in the 1980s, are especially likely to block food supplies in a civil war. And even international agencies, non-governmental organizations (NGOs), and other donors, facing government obstruction of relief and under pressure to cooperate with national authorities to at least provide relief in government-held areas, may discount independent accounts of famine that reflect on their negligence (Keen 1994; de Waal 1989). In contrast to the entitlement approach, the view of the political economy approach is that famine and humanitarian emergencies arise not from policy errors but from deliberate policy choices by ruling elites, who are trying to preserve or enhance power.<sup>30</sup> We must integrate politics and economics, analysing poverty, malnutrition, food distribution, agricultural price incentives, land tenure, entitlement, and the interests and behaviour of political elites.

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<sup>29</sup> Indeed Kofi Annan (1996:178) contends that 'In Somalia, .... it became patently clear that continuing high death rate was being caused not so much by the absence of food and the presence of natural disaster as by a group of ambitious armed men who prevented food from reaching the needy.'

<sup>30</sup> In this vein, Keen's book (1994) about Sudan in the 1980s is entitled *The Benefits of Famine*.

## IX MILITARY CENTRALITY

In the regression analysis, military centrality, as indicated by military expenditures per GNP, turned out to be the strongest and the most robust correlate of humanitarian emergencies. We say correlate, as there is a two-way causal relationship between military expenditures and emergencies. Especially violent and protracted emergencies necessitate high military spending. We emphasized the reverse dynamic, hypothesizing that military centrality, as indicated by military expenditures per GNP, contributes to complex humanitarian emergencies through four different dynamics.

First, military expenditures are needed to support authoritarian political structures, which are susceptible to violent and destructive forms of conflict. Prolonged and ruthless repression is likely to create a profound sense of injustice and deprivation within the population and the opposition. Political deprivation arises from a lack of meaningful participation in making political decisions, whether this participation is prevented by law or through repression. In effect, a constant and frequent use of repression indicates lack of legitimacy and political capacity (Jackman 1993). Efficient repression may prolong authoritarian rule, as demonstrated for example by Augusto Pinochet's Chile and Hastings Kamuzu Banda's Malawi, but eventually the people are likely to challenge the regime from a 'desperate bargainer' position. Desperate underdogs will fight regardless of the consequences if they feel they have nothing to lose. South Africa's black population had been driven to such a position by the apartheid regime. The country would have lapsed into civil war no matter how strong the repressive machinery of the white establishment was and no matter how little hope there was for the African National Congress coalition to win militarily (Auvinen and Kivimäki 1997:7-9).

Military centrality may intensify conflicts and spark new ones. Given a strong military, a government is likely to deploy it to contain various kinds of challenges. Scant military resources indicate that the government is predisposed to solving crises by other, more pacific means. A strong military is likely to exert power over the government decisions and favour strong over weak responses to suppress conflict. Excessive force and fire power against peaceful demonstrations are likely to trigger further violence, which happened in South Africa in 1990-92 and in Pinochet's Chile. According to Gurr (1994), ethnopolitical conflicts tend to begin with limited protests and clashes that escalate into sustained violence.

Second, since authoritarian rule relies on military power, one needs considerable military resources to challenge it. Provided that repressive rule has not (yet) generated an opposition of desperate underdogs, political opponents will not attempt to challenge the regime until they have managed to collect enough military capacity. As in the case of desperate bargaining, the resulting conflict is likely to be bloody and intense. Military centrality thus has an impact on the form of conflict: large military resources may deter popular protest but encourage opponents to build up resources for large-scale warfare; rebellion promises a better chance of success than protest, or the only chance.

Third, military centrality is conducive to irregular executive transfers, which can lead to humanitarian emergencies. Jenkins and Kposowa found military centrality the most consistent independent force behind coups. The greater the resources of the military, the more likely were military interventions. While this finding was based on Africa, it is supported by earlier studies. (Jenkins and Kposowa 1990, 862, 869; Kposowa and Jenkins 1993, 147) In many LDCs, military takeovers of governments have occurred routinely (see Johnson *et al.*, 1984), although in most of Latin America they seemed to have discontinued during the 1980s.<sup>31</sup>

Frequently these coups have led to humanitarian crises. To illustrate, the military has traditionally occupied a central position in Haitian politics. From the late 1930s until 1957, when Francois Duvalier (better known as Papa Doc) assumed the presidency, 'the army exercised the effective power and decided for how long the sitting president would be able to retain power' (Lundahl 1997, 14). Duvalier was able to undermine the military's power with the help of his own paramilitary force, the *tonton macoutes*. The Duvaliers were able to stave off the threat of the military until 1986, when Francois's son, Jean-Claude Duvalier, was finally ousted in a coup. When the army reconstituted itself in Haitian politics, a new wave of coups and counter-coups followed. In September 1991, the military overthrew President Jean-Bertrand Aristide, as it felt threatened by his plans to return the police force from the military to civilian control since this struck at the heart of the military's illegal activities (Dupuy 1997:116-8). This move led

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<sup>31</sup> Hunter (1994) points out, though, that, even in the 1990s, civil-military tensions persisted in Latin America. In Venezuela, Argentina, Brazil and Chile, the military has intervened in politics as a reaction to domestic and international challenges to their professional standing and corporate integrity.

to a humanitarian crisis in Haiti with notorious consequences (see Lundahl 1997:34-41). Other instances include Nigeria's two coups in 1966, which set the stage for the 1967-70 civil war, and Pakistan's military coups in 1958 and 1969, which contributed to the conflict between East and West Pakistan in 1971.

Military coups have often been economically motivated. Jenkins and Kposowa (1990) found that debt dependence was a major predictor of coup activity in black Africa, 1957 to 1984. O'Donnell's (1973, 1978) bureaucratic-authoritarian thesis suggests that Latin American militaries intervened in politics during periods of economic hardship, legitimizing the action by the need to establish order amid social unrest. Even more generally, economic crisis periods tend to strengthen the military's position. Civilian governments avoid cutting back military budgets and privileges to keep the armed forces satisfied (Kimenyi and Mbaku 1993:395). African governments favoured defence in budgeting during periods of austerity (although they discriminated against defence when budget resources were increasing) (Gyimah-Brempong 1992:191).

There is a vicious circle: during economic hardship, the repressive machinery needs to be strengthened, or at least not to be cut back in proportion to other sectors, in order to withstand the opposition's potential mobilization against austerity. The inability to reduce military spending, in turn, is a further economic burden on the citizens. Where per capita incomes are low, even small changes in budget allocation have great distributive impact on the peoples' welfare. Money for the military allocates funds away from other goods and services, including health care, clean water, and housing. In extremely poor countries such as Sudan, Ethiopia and Chad, the allocation of funds for defence implies starvation (Gyimah-Brempong 1992).

The vicious circle indicates a fourth dynamic of how military centrality breeds humanitarian emergencies: it has direct welfare-reducing costs for the population. Furthermore, it has a dampening impact on economic growth. Most empirical evidence supports an inverse association between military expenditure and growth – 'the tank-tractor trade-off'. Deger and Smith (1983, 352) found that military spending had a small positive effect on growth through modernization effects but larger negative effects through reduced savings, which resulted in a net negative effect of military expenditure on growth. In Sudan, military expenditure had substantial

economic costs, particularly on investment, human resource accumulation, trade balance and economic growth, although Mohammed (1992) also mentions some limited positive spin-offs to the productive sectors. In conclusion, there are several mechanisms through which military centrality causes or exacerbates complex humanitarian emergencies, whether by generating violent conflicts or economic destitution.

## X CONFLICT TRADITION

In our econometric analysis, we found a connection between violent conflict in the 1960s and 1970s (specifically 1963 to 1977) and humanitarian emergencies in the 1980s and 1990s. Conflict cultures vary from one country to another and have been shaped by history. Certain forms of conflict are institutionalized in some countries, and would never occur in other countries. The histories of Latin America and Africa abound with irregular executive transfers. Haiti is a prime example. Despite the army's political weakness and the consequent absence of irregular executive transfers between 1957 and 1986, Haiti has nevertheless had twelve successful coups since 1956 (Brogan 1992). This is a continuation of the trend in the late nineteenth and early twentieth centuries. According to Heintz and Heintz (1978:404) Haiti experienced more than a hundred more or less successful uprisings between 1843 and the landing of the US Marines in 1915. As many as 17 of the 22 presidents during this period were deposed by a coup d'état or revolution (Lundahl 1997:11).

Although Asia has experienced relatively fewer coups, some countries such as Thailand stand out. Typical features of conflict behaviour in South Korea have been self-immolations by fire and huge riots with a very small number of deaths. A war-induced humanitarian emergency would be unlikely in such a country. In Chad, a civil war involving several foreign interventions has continued, with only three short interruptions, since the late 1960s (Brogan 1992:19-26). The selection of the forms to express grievances is strongly affected by the conflict culture.

Intensity of past conflicts, as indicated by a large number of casualties, indicates that violence is not atypical for a conflict culture. Colombia is a violent society. During *La Violencia* in 1946-57, some 300,000 people were killed in the fighting between partisans of the Conservative and Liberal Parties. In 1988, when the country was not involved in active

warfare, it experienced about 20,000 murders – about six times the murder rate in the United States (Brogan 1992:513) Past violence is likely to lower the threshold for using violence as a means of expressing dissent, making intensive forms of political conflict normatively justifiable.

## XI CONCLUSION

This paper analyses the political economy of complex humanitarian emergencies, multidimensional crises characterized by warfare, disease, hunger, and displacement. Our focus has been on the economic sources of emergencies.

The research tests the relationships between explanatory variables and the dependent variable, humanitarian emergencies, in 124 developing countries, from 1980 to 1995. We find that humanitarian emergencies are directly associated with the Gini index of income concentration, inflation, military centrality as defined by military expenditures as a percentage of GNP, and conflict tradition, and inversely with GDP growth, GNP per capita, food output growth, and IMF funding as a percentage of GNP. The findings are largely consistent through three measures of the dependent variable and whether we use ordinary least squares, generalized least squares (Prais-Winsten), fixed and random effects, tobit, or probit models. Humanitarian emergencies are most robustly associated with slow or negative economic growth, a low level of economic development, military centrality, and tradition for violent conflict.

The first factor responsible for the increase in emergencies in the 1990s is the developing world's stagnation and decline in incomes, primarily in the 1980s. Economic decline induces relative deprivation which is the actors' perception of social injustice from a growing discrepancy between goods and conditions they expect and those they can get or keep. Relative deprivation spurs social discontent and sometimes anger, which provides motivation for potential collective violence. Poor economic performance undermines the legitimacy of regime, increasing the probability of regime turnover. Political elites may use repression to forestall threats to the regime and capture a greater share of the majority's shrinking surplus. Repression and economic discrimination may trigger further discontent and socio-political mobilization on the part of the groups affected, leading to further violence and worsening the humanitarian crisis.

Protracted economic stagnation can increase the probability of non-conflict components of a complex emergency, that is, population displacement, hunger and disease. Darwinism tends to become dominant economic behaviour when food, resource, and employment scarcity becomes chronic. It tends to prevail over behaviour dictated by legal norms and social conventions regulating access to resources and respect of property rights. Protracted stagnation may also spur elites to violently expropriate the assets and resources of weaker communities.

A major contributor to slow growth is agricultural stagnation. Slow or negative per-capita growth, which is often accompanied by a chronic external disequilibrium, necessitates stabilization and adjustment; those countries whose adjustment policies fail, so that they do not qualify for the IMF 'Good Housekeeping seal,' are more vulnerable to humanitarian disaster.

A second factor, high income inequality, contributes to regional, ethnic, and class discrepancies that engendered crises. A third contributor, inflation, increases popular discontent, especially among low-income classes. A fourth factor, the strategies of political elites in response to stagnation, inequality, inflation, and adjustment, and mass reaction to these changes, is instrumental in determining the potential for political conflict and humanitarian emergencies. A fifth explanation for emergencies is military centrality, which can spur conflicts as well as increase poverty. A sixth factor, the tradition for violent conflict, in which violence becomes normatively justifiable in a society, increases the probability of conflict-driven humanitarian crises. These factors suggest that the international community, to reduce complex humanitarian emergencies, needs to facilitate widespread growth, support developing countries in reducing disparities in income and wealth, assist poor countries in adjusting to external and internal equilibria, promote good governance, and reduce trade in arms and weapons.

## APPENDIX I. THE INDICATORS

### 1. The components of humanitarian emergencies

#### 1.1 War

We selected the number of battle-related deaths per population as the proxy for war. Two sources were identified: the Correlates of War (COW) database for civil wars (Singer, J. David & Melvyn Small. Correlates of War Database, 1994 update) and the Stockholm Peace Research Institute's database on battle-related deaths in major armed conflicts (SIPRI Yearbook. 1989-96 [successive years]. World Armaments and Disarmament. Stockholm International Peace Research Institute. United States: Oxford University Press). The information yielded by the two sources was compared with each other.

The Correlates of War database includes major civil wars, where (a) military action was involved, (b) the national government at the time was actively involved, (c) effective resistance (as measured by the ratio of fatalities of the weaker to the stronger forces) occurred on both sides, and (d) at least 1,000 battle deaths resulted during the civil war. Also a minimum population of 500,000 and either diplomatic recognition by at least two major powers or membership in the League of Nations or United Nations were required. A total number of 150 such wars occurred in 1816-1988 (The Correlates of War Project, 1994), whereas 38 such wars were recorded during the period under observation, 1980-95. Furthermore, the Ogaden (1976-83) and the Tigrean (1978-1991) wars were extracted from the Correlates of War Dataset on *International Wars* and classified under Ethiopia as civil wars. Besides Ethiopia, six other countries experienced two civil wars in 1980-95.

The problem with the COW dataset is that casualties are reported from the entire war, not per annum. To obtain annual figures for the pooled dataset, the deaths were divided by the number of years that the conflict endured. Consequently the number of deaths is invariant from year to year, unless one war was replaced by another with a different death-rate. This is unfortunate, but of course the pool's cross-sectional variation remains.

The civil war in El Salvador will serve as an example of how the figures were arrived at: The war lasted for 14 years, from 1979 until 1992. According to the COW data, 25,000 lives were lost in fighting. The number of 25,000 battle-related deaths is divided by 14 years, which gives 1,786 deaths during each year, 1980 to 1992. The year 1979 falls out of the period under investigation. The number of deaths is then divided by the annual population estimate, and the resulting score is finally multiplied by 100 to eliminate a high concentration of figures close to zero. For example in 1980 the country's population was 4.52 million, yielding the score 3.95, and in 1992 5.04 million, yielding the score 3.31, for battle-related deaths per population (DEATHPOP).

SIPRI provides estimates of battle-related deaths for 36 countries in the present sample. However, information is missing for a total of eight years, 1980-87. In addition, the coding procedure seems to be more conservative than that of the Correlates of War Project. Even during the period 1988-95 SIPRI fails, in many cases, to report any estimate of the death toll even if a major conflict was underway during a given year. Besides the numerous cases of 'not available' data, SIPRI does not report the conflicts of Armenia (1992-), Burundi (neither the 1988 nor the early 1990s' war), Georgia (1991), Romania (1989), and Russia (1991) – which fulfil the criteria applied by the COW project. For the SIPRI data, deaths per population were multiplied by 10,000 in order to avoid a concentration of observations very close to zero.

The basic problem of the COW dataset is less dramatic: it does not contain data for the year 1995, which leaves out the conflicts in Sierra Leone and Russia (Chechnya). Because of its superior coverage, the COW figures were adopted as a basis for indicator construction. It should be noted, however, that, as compared to SIPRI statistics, COW does not record the conflicts in Algeria 1993 -, Bangladesh 1989-95, Cambodia (only) 1992, Chad (only) 1989-92, Georgia 1993-94, Guatemala 1988-95, Indonesia 1988-95, Iran 1988-93, Mauritania 1988-89, South Africa 1988 and 1990-93, Turkey (only) 1989-90, Uganda 1989 and 1991, and Yemen 1994.

## **1.2 Displacement**

As discussed in detail by Melkas (1996), the statistics for internally displaced populations are particularly unreliable. Therefore, the number of refugees by origin adjusted for the source country's population

(REFUPOP) was chosen as a proxy for displacement. (The score was multiplied by 100 in order to avoid concentration of observations close to zero.) Source: World Refugee Survey (1980-96, successive years) World Refugee Statistics. The United States Committee for Refugees (USCR). Washington DC: Immigration and Refugee Services of America.

In collecting the information, refugees from the former Soviet bloc to the Western countries before the 1980s were excluded from the dataset since neither their sources or living conditions are related to humanitarian emergencies in the 1980s and 1990s. Cuban refugees to the United States were excluded for the same reason. Several annual figures had to be estimated on the basis of previous or adjacent years because of lacking data. Normally this was unproblematic, as the *status quo* was the typical condition. The *Survey's* reporting of any significant repatriations was helpful in changing circumstances. In some other cases estimation was more difficult, for example, when the number of refugees was reported from a group of countries such as from 'Indochina'. The statistics for individual the countries (in this case Cambodia, Laos and Vietnam) would be calculated from the adjacent years' data, giving each country the average proportional share of the total number of refugees from Indochina one year before and after. Another example of the difficulties involved is the change from reporting the number of refugees by country of origin in 1980 to reporting by country of asylum in 1981. In one case the figures simply provided no basis for judging, and the number of refugees from Zambia in 1981 was estimated at 2,000.

### 1.3 Hunger

The measure selected to indicate hunger is the annual calorie supply per capita (FAOSTAT 1995). Although 'starvation' is rarely the 'cause' of famine deaths, food shortages may provoke people into actions which increase their exposure to other risks, such as death from disease (Seaman 1993, 27). A low calorie supply is an indicator of poverty rather than humanitarian emergency. One should look at changes in calorie supply rather than levels. Looking at the trend of calorie supply from 1980 to 1995 one observes an encouraging, albeit weak, upward trend in the countries under study. Any downward deviation of this general trend could be indicative of a humanitarian emergency. The indicator of hunger (CALAVE) is expressed as a deviation of calorie supply from the annual average change in the whole sample:

$CALAVE = CALINDEX - AVERAGE (CALINDEX),$

where  $AVERAGE (CALINDEX)$  = average annual change in the index of calorie supply in the whole sample;  $CALINDEX = LAG (CALINDEX) + (((CALSUPP - LAG (CALSUPP)) / LAG (CALSUPP)) * 100)$ , or index of change in the calorie supply for  $N_1, \dots, N_k$ ; 1980 = 100. Source: FAOSTAT TS 1995 Database. Rome: Copyright by the United Nations Food and Agricultural Programme. Software by the United States Department of Agriculture, Economic Research Service.

Negative values indicate that a country is below the general trend towards increased calorie supply, which is hypothesized to be an indicator of a potential complex humanitarian emergency. The data on calorie supply were extrapolated for all countries for 1993-95.

#### 1.4 Disease

Since infants are highly susceptible to disease, we used the infant mortality rate per 1,000 live births as a proxy for disease. Disease claims human lives during emergencies due to lack of food and sanitation. Seaman (1993, 27) points out that the immediate cause of death is generally from infection, electrolyte imbalance or a range of other biological events. As with calorie supply, infant mortality in itself is also an indicator of poverty. For instance, poor countries cannot afford health services that would prevent diseases. There is a need to resort once again to a measure indicating a deviation from the general trend. Encouragingly, during 1980-95, we observe a clear reduction in infant mortality during 1980-95 in the countries under study. The indicator is constructed as follows:

$INFAVE = INFINDEX - AVERAGE (INFINDEX),$

where  $AVERAGE (INFINDEX)$  = average annual change in the index of infant mortality;  $INFINDEX = LAG (INFINDEX) + (((INFMORT - LAG (INFMORT)) / LAG (INFMORT)) * 100)$ , or index of change in the infant mortality rate for  $N_1, \dots, N_k$ ; 1980=100. Source: World Tables Database 1993 Update. Socio-Economic Access and Retrieval System, vers. 2.5, April 1992. Washington DC: The World Bank.

The data on infant mortality were extrapolated for 1993-95 for all countries and for 1980-81 for Lithuania, Belize and Slovenia.

## 2. The sources of humanitarian emergencies

CPIDIFF – Consumer Price Index, annual change. Source: Social Indicators of Development (SID) 1995 Database. Socio-Economic Access and Retrieval System (calculated). Washington DC: The World Bank.

DEATRAD – ‘death tradition’: number of deaths from political violence, 1963-77. Source: Taylor, Charles Lewis & David A. Jodice (1983) World Handbook of Political and Social Indicators. 3rd edition. Vol. 2: Political Protest and Government Change. New Haven and London: Yale University Press.

GDPGRO – Gross domestic product (average annual growth, %), 1980-92. Source: World Tables Database 1993 Update. Socio-Economic Access and Retrieval System, vers. 2.5, April 1992. Washington DC: The World Bank.

GINI – Gini Index as defined by Deininger & Squire (1996), requiring that observations be based on household surveys, on comprehensive coverage of the population, and on comprehensive coverage of income sources. Source: Deininger, Klaus & Lyn Squire. 1996. A New Data Set Measuring Income Inequality. *The World Bank Economic Review* 10(3): 565-91.

GNPCAP – Gross national product per capita, 1980-93 (US\$, Atlas method). Source: Social Indicators of Development (SID) 1995 Database. Socio-Economic Access and Retrieval System. Washington DC: The World Bank.

FOODGRO – Annual growth of food production per capita. Source: World Tables Database 1993 Update. Socio-Economic Access and Retrieval System, vers. 2.5, April 1992 (calculated). Washington DC: The World Bank.

IMFGNP – Use of IMF credit as a percentage of GNP: The use of IMF resources except those resulting from drawings in the reserve tranche. Source: World Debt Tables 1996 Database. Socio-Economic Access and Retrieval System, vers. 3.0, May 1993 (calculated). Washington DC: The World Bank.

MILCENT – ‘Military centrality’: Annual military expenditures as a percentage of GNP. Source: SIPRI Yearbook (1986-95, successive years)

World Armaments and Disarmament. Stockholm International Peace Research Institute (SIPRI). United States: Oxford University Press.

ODAPOP80 – Official Development Assistance per capita index (1980 = 100). Source: World Development Report (successive years; calculated from ‘Official Development Assistance: receipts’). Washington DC: The World Bank and Oxford University Press.

ODAPOGRO – Official Development Assistance per capita growth. Source: World Development Report (calculated from ODAPOP80). Washington DC: The World Bank and Oxford University Press.

POLRI – Summary Index of ‘Political Rights Grievances’, i.e., demands for greater political rights other than autonomy, sum of codings on five ordinal scales:

- POL1 Diffuse Political Grievances
- POL2 Seek Greater Political Rights
- POL3 Seek Greater Central Participation
- POL4 Seek Equal Civil Rights
- POL5 Seek Change in Officials/Policies
- POL6 Other Political Grievances

Source: Gurr, Ted Robert (1993) *Minorities at Risk. A Global View of Ethnopolitical Conflicts*. Washington DC: United States Institute of Peace Press.

TOT80 – Terms of Trade Index (1980=100, US\$-based). Source: World Tables Database 1993 Update. Socio-Economic Access and Retrieval System, vers. 2.5, April 1992 (converted from 1987=100). Washington DC: The World Bank.

TOTCHANG – Terms of trade index, annual change. Source: World Tables Database 1993 Update. Socio-Economic Access and Retrieval System, vers. 2.5, April 1992 (calculated from TOT80). Washington DC: The World Bank.

## APPENDIX II. HUMANITARIAN EMERGENCIES: LAG STRUCTURES

### 1. Ordinary least squares models

TABLE II.1 GDP GROWTH (LGDPGRO)

LAG	LDEATREF	LHUMEMER	LCHE
[-4]	-1.446*** (0.513)	-1.138*** (0.345)	-2.112*** (0.481)
[-3]	-1.699*** (0.521)	<b>-1.214*** (0.358)</b>	-2.304*** (0.490)
[-2]	-1.809*** (0.516)	-1.178*** (0.355)	-2.534*** (0.490)
[-1]	-1.833*** (0.547)	-1.142*** (0.380)	-2.544*** (0.517)
	<b>-2.023*** (0.576)</b>	-1.103*** (0.407)	<b>-2.720*** (0.545)</b>
[+1]	-1.679*** (0.581)	-0.818** (0.412)	-2.219*** (0.556)
[+2]	-1.721*** (0.580)	-0.484 (0.407)	-1.929*** (0.615)
[+3]	-1.800*** (0.648)	-0.088 (0.459)	-1.832*** (0.693)
[+4]	-1.844*** (0.703)	-0.078 (0.504)	-1.862** (0.776)

Note: The figures are parameter estimates and standard errors; coefficient significant \*\*\* = at the 1 per cent; \*\* = five per cent, \* = 10 per cent level of significance (2-tailed test); all other variables are held constant in the models. Strongest associations are indicated in bold.

### 2. Generalized least squares (Prais-Winsten) models

TABLE II.2 GDP GROWTH (LGDPGRO)

LAG	LHUMEMER
[-2]	-1.197*** (0.320)
[-1]	<b>-0.287** (0.142)</b>
	-0.266* (0.157)
[+1]	-0.050 (0.168)
[+2]	-0.115 (0.182)

TABLE II.3 FOOD PRODUCTION GROWTH (LFOODGRO)

LAG	LDEATREF
[-2]	-0.105 (0.116)
[-1]	<b>-0.193* (0.116)</b>
	-0.048 (0.130)
[+1]	0.089 (0.124)
[+2]	0.039 (0.125)

Note: The figures are parameter estimates and standard errors; coefficient significant \*\*\* = at the 1 per cent; \*\* = five per cent, \* = 10 per cent level of significance (2-tailed test); all other variables are held constant in the models. Strongest associations are indicated in bold.

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