Economic Determinants of Political Unrest

AN ECONOMETRIC APPROACH

MANOUCHER PARVIN
Department of Economics
Hunter College, CUNY

Some degree of political unrest and thus potential for violence exists in all societies at all times. In recent years, the causes of political unrest are attributed to one or more sociopsychological traits or geopolitical factors. Economic explanations are absent or lack modern quantitative approach. This study is an attempt to test some of the old and new theories of political unrest, and to extend, modify, and synthetize others in a unified theoretical framework. Thus, etiologically, universal economic factors in contrast to noneconomic, particular, or local factors are considered and methodologically a multifactor analysis is adopted. Theoretically, neither exclusivity nor primacy of economic factors is assumed; however, empirical results demonstrate their importance as main explanatory variables of political violence. In contrast to general belief, it is shown that political unrest is not a monotonically explained variable for the entire range of explanatory factors such as relative deprivation. Thus, the usefulness of concepts such as optimum level of income inequality, socioeconomic mobility, income growth rate, or the like are indicated.

Introduction

It is reasonable to assume that some degree of latent political unrest exists in all societies at all times. However, not until substantial pressures for economic and political changes have risen to a threshold level is such latent unrest qualitatively transformed into manifest political unrest in the forms of political demonstrations and civil disobedience. Thus, the critical threshold of violence is transgressed whenever a significant number of individuals have grown sufficiently dissatisfied and frustrated with existing

[271]

economic or political conditions that the promotion of the breakdown of law and order is preferred to their preservation (Nieburg, 1962).

In recent years, social scientists have subjected the relatively uncharted area of internal political unrest to further scholarly exploration, despite certain theoretical and methodological difficulties (Eckstein, 1964). Although most of these studies have been qualitative in nature (Eckstein, 1964; Rosenau, 1964; Sorokin, 1937; Brinton, 1969; Lasswell and Kaplan, 1950; Wright, 1964), some quantitative studies have arisen (Richardson, 1960a, 1960b; Tanter, 1966; Rummel, 1966, 1963; Deutsch, 1961). Several writers have tried to enumerate and explain factors which contribute to manifest political unrest. The Feierabends (1966) outline a psychological theory of political instability, which they explain as resulting from situations of unrelieved, socially experienced frustration.

The element of social frustration is also dealt with by Karl W. Deutsch (1961) in terms of adequate political and economic capability to compensate the rising needs and expectations accompanying the increasing social mobilization of national populations in developing countries. Gurr (1968a) constructs a model in which the level of violence is explained by a number of psychological and social factors, showing elsewhere (Gurr, 1968b) that the level of "strife varies directly in magnitude with the intensity of relative deprivation." Furthermore, in a more recent work concerning the sources of rebellion in Western societies (Gurr, 1970) he concludes that internal strife in recent years could be explained by the range and intensity of collective discontent, combined with the strength of normative and utilitarian justifications for rebellion among discontented groups and balance of social control between contending groups. In addition, Grinshaw (1970) concludes that superordinate/subordinate relationships based on social categories are inherently unstable and that social violence is likely to occur when accommodative structures lose their viability.

Weinert (1966), studying the level of violence in Colombia, concludes that violence does not result from sociopolitical frustration, but that it is a common phenomenon in developing countries, and it reflects a feudal, premodern conflict generated by modernization. Williamson (1965), on the other hand, suggests that outbursts of violence in rural Colombia are related to the level of literacy, the quality of leadership, and the access to sanctioned channels for expression of discontent in that country. In addition, Mitchell (1969) offers a location theory of violence in a case study of the Huk rebellion in the Phillipines.

The important characteristics of the aforementioned specifically re-
lated, but by no means exhaustive, recent studies and those of the past are
the following:

(1) Etiologically, the causes of political unrest are ascribed in recent studies to
one or more sociopsychological traits or political factors, interspersed
occasionally with insights taken from the discipline of economics.

(2) Methodologically, when the approach is quantitative, the studies focus on
special cases where primarily specific factors associated with a special
situation or locality are considered as explanatory variables of political
unrest.

(3) Historically, the approach to the economic explanation of political unrest has
been exclusively descriptive or analytical when considered by the classic
political economists and political sociologists due to the unavailability of an
advanced quantitative method and sufficient data.

This study is thus a preliminary attempt to bridge a few gaps by
focusing mainly on the economic explanation of political unrest, by
considering universal, in contrast to particular, factors or local situations,
and finally by adopting a modern quantitative approach for the testing of
the proposed formal theory.

Economic Determinants of Political Unrest

STATIONARY ECONOMIC DETERMINANTS

A category of material and service *necessities* constitutes a primary
prerequisite of human biological existence. Furthermore, over and above
these biological *necessities,* certain categories of commodities defined as
socioeconomic *needs* comprise the prerequisites of group-specific socio-
economic membership. It should be noted that the members of an
economic class may be sociologically differentiated, while members of a
group within a class possess certain common sociological characteristics
such as professional, ethnic, racial, and so on. The biological necessities
and group-specific economic needs together constitute the commodity
flow requirements for the maintenance of an ongoing level of the biosocial
consumption process in a national social unit.

It is assumed that some members of an income class or group within a
class would react unfavorably to any threat to, or the actual decrease in,
the ongoing commodity flow to that class or group. In addition, it is

assumed that an unfavorable relative change in income—in contrast to the aforementioned absolute one—may generate similar negative reactions or resistance between classes or among groups within the same class. Furthermore, it is assumed that the nature and the extent of the politically manifested reactions, and the associated likelihood of their occurrence, depend on the degree of change, real or imagined, potential or manifest, and the level and scope of individual and group consciousness concerning the change itself and its implications. Thus, violent protests of labor unions associated with relative or absolute change in income and food riots, past and present, in various countries, are examples of extreme reactions induced by the diminution, respectively, of needs and of necessities flow.

It is important to note that the struggle to maintain the flow of necessities and needs does not follow the sequential order of importance for members of a national unit—i.e., even if some members of a national unit receive one or both, others may receive none. Thus, even in national units as prosperous as the United States, the struggle for biological existence is an everyday reality for certain individuals and families.

TEMPORAL ECONOMIC DETERMINANTS

Some members of one or more groups may at one moment in time have *expectations* concerning flow which are beyond necessities and needs. Such expectations are, over time, transformed into *demands*. Demand is defined herein as constituting words uttered and actions undertaken for the purpose of inducing change leading to the realization of expectations. Thus, demand implies an explicit request for change in the ongoing processes of production or distribution of commodities in a quantitative or qualitative sense. Two major categories of demand for change are recognized. First, specific-interest demand by an individual or a group, and second, general-interest demand for change. In the individual demand for change, or "ego-focused image of change" (Hirshman, 1964), the individual is only concerned with private gain, implying an increase in consumption above the average increase accrued to the members of a group to which he belongs. This category of demand can be fulfilled only if individual upward class movement is possible. The lack of sufficient provisions for interclass economic mobility, especially for those individuals with relatively superior abilities, and achievement motivation, may lead at first to individually experienced rising frustration. In the case of group specific-interest demand for change or "group-focused image of change"

(Hirshman, 1964), the individuals conceive of and desire the economic change which affects equally all members of the group with which they identify. However, technological progress in production, as well as consumption, inducing evolutionary transformation of economic structure and function, may reduce the relative or absolute economic significance of a certain group, thus rendering impossible the realization of even a modest expectation of maintenance of relative group income position. In addition, legislation or executive order—such as those affecting the tax structure, tariffs, and allocation of resources for welfare and public goods—may have similar, nonuniformly distributed results causing a change in the structure of income distribution. Accordingly, technologically induced income growth, government economic policies, and the economic effects of other nonuniformly distributed forces (e.g., natural or social), may give rise to (or attenuate) the net group-experienced frustration. Finally, it should be noted that the two specific-interest demands for change—ego and group—may not be complementary or compatible but contradictory, and thus their simultaneous existence may serve as obstacles to change itself (Hirshman, 1964) and give rise to increasing frustration.

The general-interest demand for economic change can be subdivided into two categories: national and international demand for change. In the first case, individuals from various groups demand changes which affect the entire citizenry of a national unit uniformly or not, and in the second case, some citizens of a national unit demand certain economic changes which affect a part or the whole membership of another national unit. The growing demand for the abatement of environmental pollution constitutes an example of national demand for change requiring reallocation of resources on a national level. However, this demand is gradually becoming an international demand for change. The continuation of the economic aspect of apartheid policy in the Republic of South Africa has served as a frustration-generating source in other countries, leading to a demand for the redistribution of income and power in that country by the citizens of others. Moreover, it should be noted that a specific demand by an individual may grow into a group-specific demand, and further into a national or international demand for change, depending on the nature and universality of the demand, and on the mode and intensity of communication. The aforementioned demands for change have generally grown out of small units—whether social or geographic—to larger units. Thus, some of today's specific demands for change could become tomorrow's universal demands for change. Notice that, in the above and what follows, it is the present value of expected future flow that is considered by the decision-maker, whether an individual or a larger social unit.

The Nature of Economically Induced Frustrations

Absolute or relative change in the flow of commodities to an individual or group is generally associated with change in social status. This does not imply that all demands for change have economic roots or consequences. But the above classification of stationary and temporal commodity flow in terms of necessities, needs, and demands implies the latent possibility of various forms of frustration experienced by individuals, groups, or other social units. For instance, a decrease in the flow of necessities implies biologically experienced frustration on the part of individuals directly affected, while a decrease (relative or absolute) in the flow of needs implies psychosocially experienced frustration. Furthermore, the lack of realization of specific-interest demand—ego or group demand—may lead, respectively, to psychologically or socially experienced frustration, while the failure to attain general-interest demand may lead to intellectually as well as spiritually felt frustration. These experienced forms of frustration are frequently interdependent—i.e., one form may cause others; biologically experienced frustration may, for instance, lead to psychosocially felt frustration. Accordingly, some of the discontent and frustration experienced in various forms by an individual or group is found to have economic roots.

Thus, the stationary and temporal economic factors—necessities, needs, and demands—together represent and are the measure of a complex entity of existing or expected economic well-being or deprivation. The desire for economic well-being or the avoidance of economic deprivation compels or induces numerous human actions, including political actions, considered or classified as constructive or destructive, normal or abnormal, legitimate or illegitimate (Gurr, 1970). Hence, we proceed by stating the following nonrestrictive hypothesis. Economic well-being (or deprivation) is a fundamental motive of political action in general and manifest political unrest in particular. It should be noted that this hypothesis claims neither the primacy nor the exclusivity of economic factors as determinants of political unrest; it merely asserts their importance. The main task of this paper, then, is to break down the complex entity of economic well-being into its elementary component parts, test them for relevance and significance, and measure their strength and effect direction as explanatory factors of political unrest.

Econometric Approach

The adopted methodology is one of multivariate statistical analysis. It is not, however, our concern here to investigate the scientific merits or demerits of this form of approach in the social sciences. We proceed by the analytical study of a set of universal economic factors hypothesized as explanatory variables of political unrest, the formulation of an appropriate mathematical (stochastic) model containing such variables, the construction of indices, and, finally, the empirical analysis of the model leading to a test of various hypotheses proposed here and elsewhere (Gurr, 1968b; Weinert, 1966; Williamson, 1965). The choice of elements of the set of explanatory variables entering the political unrest model is formally based on a priori and theoretical considerations. More specifically, however, in the choice of independent variables of the model, the following criteria are considered—proceeding from the general to particular characteristics.

(1) The independent variables of the model are economic and universal factors. The specific, local, or noneconomic factors, such as geographical peculiarities are excluded, while universal economic magnitudes such as per capita income (as a measure of the absolute level of welfare or deprivation), inequality in income distribution (as a measure of relative welfare or deprivation), the rate of income growth (as a measure of the rate of the realization of general-interest demand), economic mobility (as a measure of the rate of realization of individual specific-interest demand), and communication and urbanization (as indices for measuring the intensity of convergence of demand forces in social and geographic terms) are included. Such factors are universal economic indicators from a spatial and temporal point of view unbounded by historical, cultural, and system specificities.

(2) The variables of the model are universal in another sense. They seem to be relevant and significant in various social units, ranging from the individual to communities and national units. Broadly speaking, they appear to exhibit the same properties spatially and temporally, and influence the behavior of social units from micro to macro in the same direction. Accordingly, the problem of induction from part to whole and interaction between various units is avoided, since our interest lies only with the net effect. However, since the main purpose of the study is the investigation of the relevance and significance of universal economic factors—in the most general sense—influencing the political unrest, the

national is formally specified as the appropriate social unit for the quantitative analysis of the data. Yet the universality of the variables considered in this model implies their applicability to the study of smaller social units, such as groups or communities differentiated ethnically, racially, or geographically within the same national unit. It should be noted that some extremely important local factors may not be relevant, let alone significant, in cross-national studies. Finally, it may easily be recognized that one or more of the aforementioned three criteria (economic nature, universality of the factors, and the quantitative approach to the question) represent—though not necessarily simultaneously—a major departure from previous approaches to the question of the causes of political unrest. We are not interested in the study of the causes of political unrest manifested by a special case of political upheaval, but in the general underlying economic forces which may loom behind the seemingly local or specific factors.

(3) The conclusions of other investigators in this field are utilized in the model as explanatory factors if such inclusions have been considered appropriate and feasible. The above criteria and the following analysis indicate that such inclusions or exclusions of variables are neither arbitrary nor automatic.

Duality

It appears that each universal economic factor considered has a complex effect on political unrest. Thus, such effects attributed to a single factor are not undirectional—i.e., some influence political unrest positively and some negatively, some directly and some indirectly. The dual nature of such factors is a source of methodological difficulty when the approach to the problem is exclusively descriptive or analytical. Given the complex nature of the forces, how is the direction of the sum total or net effect of a particular factor on the political unrest determined? How are the strengths of such an influence and the associated likelihoods measured? Some writers have maintained that the process of economic development may affect political unrest adversely (Deutsch, 1961; Weinert, 1966). But such processes make possible the partial fulfillment of existing and rising expectations, thereby leaving only some, instead of all, new or old demands unattained. Accordingly, the quantitative approach can yield the measurement of the net effect of political unrest of a many-sided process

of economic development and growth. The problem of duality is further explored in the following sections as each explanatory factor is discussed.

Dependent Variable

Manifest political unrest—denoted by "V"—the dependent variable, may be defined for operational considerations as the absolute number of deaths resulting from domestic group violence per 1,000,000 population (Russett, 1964). The choice of this indicator is made on the basis that it directly and unambiguously measures the immediate end-product of riots, coups, political assassinations, and rebellions, while excluding deaths by murder and execution. Inasmuch as the reported data are reliable, the number of people killed as a result of domestic group violence is deemed to be a dependable index of political unrest above the threshold of violence. Other indicators of political unrest can also be used where the index may be more suited for the specific purpose at hand (Russett, 1964; Gurr, 1970).

Independent Variables

PER CAPITA INCOME

Per capita income—denoted by "Y"—is assumed to be the measure of absolute level of existing economic well-being (or deprivation) among the residents of a given country. It is thus a measure of the necessities and needs flow and is partly indicative of the past expectations fulfilled. Furthermore, from an individual's point of view, the opportunity cost of violence is likely to vary directly with his income. This means that those individuals who have little to lose are more inclined to engage in violent activities than those who are materially better off. It should be noted, however, that this factor has a dual nature since an increase in per capita income is generally accompanied by a rise in the level of industrialization, causing associated psychosocially experienced frustrations as well as an increase in environmental pollution leading to biologically experienced frustration. It should also be noted that the level of per capita income provides information concerning neither the relative percentage of national product devoted to private consumption nor its mode of distribution. Nevertheless, this factor is expected to have a net effect upon, and thus

partially explain, the level of political unrest. The present hypothesis is that, all effects considered, per capita income and political unrest are inversely related.

Thus we may write

$$V = f_1(Y) \quad \text{ceteris paribus}$$

$$\text{and} \quad \frac{\partial V}{\partial Y} < 0$$

where V is the level of violence and Y is the per capita income. In terms of partial elasticities, we can simply state that a given percentage rise (or fall) in per capita income is associated with a given percentage decrease (or increase) in the level of violence, other factors kept constant.

Mathematically, this can be written as

$$\frac{\partial(\log V)}{\partial(\log Y)} < 0$$

where log stands for the natural logarithm.

INCOME DISTRIBUTION

The coexistence of extreme affluence and deprivation, as observed in many societies, gives rise to political unrest for any level of per capita income. Thus, the index of inequality in income distribution, which is a measure of relative well-being or deprivation, denoted by "A," is assumed to be a determining factor of "V." The larger the inequality in income distribution, the greater the intensity of ego- and group-specific interest demand for change—hence, the latent political unrest. The inequality in income distribution is measured by the ratio of the area between the Lorentz curve and the diagonal representing full equality to the area under the diagonal. The larger the ratio, the greater is the index of income inequality (Kuznets, 1963). Postulating that the degree of envy and frustration experienced by low-income individuals is directly related to the index of income inequality within a given society, we can then write:

$$V = f_2(A) \quad \text{ceteris paribus}$$

$$\text{and} \quad \frac{\partial V}{\partial A} > 0$$

where A is the index of inequality in income distribution.

Thus, in terms of partial elasticities, we postulate that a percentage change in the index of inequality is associated with a percentage change, in the same direction, of the level of violence—i.e.,

$$\frac{\partial(\log V)}{\partial(\log A)} > 0$$

But to assume that such a postulated relationship holds for all levels of income inequality implies that a uniform distribution of income minimizes political unrest as far as the effect of this particular factor is concerned. This is, of course, a doubtful proposition, since any substantial change toward egalitarian society will lead to political unrest and violence by higher-income groups and individuals. It is therefore more reasonable to assume that an optimum level of income inequality exists for any level of per capita income. Subsequently, beyond this optimum level, the net effect of further redistribution of income toward more or less equality may imply increasing, not decreasing, political unrest. Recognizing the existence of duality, our original hypothesis concerning the relationship between inequality in income distribution and political unrest, is, then, conditioned by the fact that existing income inequalities are well below the optimum level of income distribution. Thus, redistribution of income toward less inequality will, in sum, decrease the level of political unrest.

INCOME GROWTH

The percentage growth rate of per capita income, "G," is assumed to have important social and political implications since it can be interpreted as a measure of a society's ability to meet the growing demands of its members. It is therefore a measure of the rate of realization of general as well as group-specific interest demands. Alternatively, from the individual's point of view, this factor may be considered as a rate of fulfillment of short- and long-run expectations. Thus, the potential level of welfare imagined feasible in a life cycle is associated with the magnitude of "G"

over time. This fact also contributes to the opportunity cost of violence as viewed by groups or individuals. The higher the rate of income growth, the greater the present value of the future income flow, and the greater the employment level at the present. Thus, the greater is the potential cost of violence from the individual's point of view. Conversely, the lower the rate of growth, the smaller the present value of future income and thus the smaller the potential cost of violence. In the first instance, an individual or group has a future to think of and in the second instance "nothing to lose but the chains." Hence, it appears that political unrest and the rate of income growth are inversely related. But it is important to recognize that a high rate of income growth is generally associated with technological change in production, which necessitates change in consumption technology, the break-up of certain stabilizing cultural traditions, job dislocation, and the subsequent disruption of sociopolitical order in the short run. The above stabilizing and destabilizing forces caused by income growth may, to a certain degree, neutralize each other in the process. However, our hypothesis concerning the income level implies the attenuating effects of a sustained income growth on the level of political unrest.

Assuming that a given amount of socioeconomic costs, ΔCG, and benefits, ΔBG (in the broad sense of these words), are associated with such changes in the short run, we can write the following:

$$G = \frac{1}{Y} \cdot \frac{\Delta Y}{\Delta t}$$

$$V = f_3(G) \quad \text{ceteris paribus,}$$

where G is the growth rate of per capita income and t is time.

$$\text{Thus,} \quad \frac{\partial V}{\partial G} \leqslant 0 \quad \text{if} \quad \left| \frac{\Delta BG}{\Delta CG} \right| \geqslant 1$$

$$\text{or} \quad \frac{\partial V}{\partial G} \geqslant 0 \quad \text{if} \quad \left| \frac{\Delta BG}{\Delta CG} \right| \leqslant 1$$

In terms of partial elasticities, we can write

$$\frac{\partial (\log V)}{\partial (\log G)} \leqslant 0 \quad \text{if} \quad \left| \frac{\Delta BG}{\Delta CG} \right| \geqslant 1$$

$$\text{or} \quad \frac{\partial(\log V)}{\partial(\log G)} \geqslant 0 \quad \text{if} \quad \left| \frac{\Delta BG}{\Delta CG} \right| \leqslant 1.$$

In practice, such evaluation of ΔCG and ΔBG would require the use of cost-benefit analysis—a very complicated procedure for such cases. Fortunately, the empirical results obtained by multiple regression analysis would indicate which set of forces is predominant in influencing political unrest. We need not compute ΔCG and ΔBG—associated with a short period of income growth—directly.

SOCIOECONOMIC MOBILITY

Another factor determining "V" is the degree of socioeconomic mobility in a given society, which is the measure of the rate of realization of individual specific-interest demand. The extent to which an individual is allowed to achieve his own aspirations relative to his ability is mainly determined by the accepted norms of socioeconomic mobility and social provisions available for the effective furtherance of personal ambitions. Since the educational level attained determines to a large degree the socioeconomic position of an individual in most societies, then to the extent that educational means are available to members of a society for their personal advancement, socioeconomic mobility is enhanced. A composite index of education, "M," developed by Harbison and Myers, (1964), is used to represent this factor as a first approximation. Assuming, then, that socioeconomic mobility is inversely related to political unrest, we can write:

$$V = f_4(M) \quad \text{ceteris paribus}$$

$$\text{and} \quad \frac{\partial V}{\partial M} < 0$$

where M is a measure of socioeconomic mobility represented by a composite index of education. In terms of partial elasticities we have

$$\frac{\partial(\log V)}{\partial(\log M)} < 0.$$

Here the opposite effects manifest themselves in two important forms.

(1) The politicoeconomic mobility of some individuals may create insecurities for others who hold privileged and unique positions.

(2) Increased mobility creates further demands which may remain unattained, giving rise to more frustration.

The above analysis suggests an optimum level of mobility insofar as political stability is concerned. The study and testing of such a hypothesis is, however, beyond the scope of this paper. Thus, the inverse relationship between economic mobility and political unrest is postulated in conjunction with the net effect and not only with the primary effect and subject to historical and contemporary socioeconomic realities. In the final analysis, the data will resolve the issue of the direction of the net effect; no amount of argument can substitute for quantitative analysis in such cases.

MODES OF COMMUNICATION

Every stage of economic development is associated with a given mode or modes of communication and the extent of their utilization. Communication as a socioeconomic phenomenon is a factor in the formation of expectations and their transformation into demands. Furthermore, as a social prism, it contributes to the diffusion of such demands, thus increasing its scope while simultaneously, as a social lens, it serves to focus the demanding forces, giving rise to their level or intensity. For instance, as people are brought into contact with the living habits of others, "the revolution of rising expectations" and demand are set in motion, potentially inducing the evolution of rising dissatisfaction. Furthermore, the communication media may focus the attention of the individuals, groups, or general public on conflicts and inconsistencies within a government (Lerner, 1963; Schiller, 1969). Frustrations which may translate themselves into political unrest are most likely to occur when the rate of rising expectations, "E," leading to the intensification of specific- or general-interest demands, is greater than the possible rate of fulfillment of such demands given by the rate of growth, "G." In some cases, the individual's imagination quickly outdistances societal achievement (Lerner, 1963).

However, the communication media can also provide entertainment and soothing propaganda, which may have an attenuating effect on "V" through the inverse process of decreasing the level of or fragmenting expectations and demands.

The number of radios per capita, "R," is selected as an index of communication on the basis that the ownership and use of a radio receiver does not require any literacy or, relatively speaking, a high purchase cost (Russett, 1964). Furthermore, in most countries, a receiver can be tuned to external as well as internal transmitters. Thus, the above discussion permits us to write the following:

$$V = f_5(R) \quad \text{ceteris paribus}$$

$$\text{and} \quad \frac{\partial V}{\partial R} \geqslant 0 \quad \text{if} \quad E \geqslant G$$

$$\text{or} \quad \frac{\partial V}{\partial R} \leqslant 0 \quad \text{if} \quad E \leqslant G$$

where R is the number of radios per capita and E is the rate of increase in expectations.

In terms of elasticities we have

$$\frac{\partial(\log V)}{\partial(\log R)} \geqslant 0 \quad \text{if} \quad E \geqslant G$$

$$\text{or} \quad \frac{\partial(\log V)}{\partial(\log R)} \leqslant 0 \quad \text{if} \quad E \leqslant G.$$

Again, we need not calculate "E" directly, for empirical analysis would indicate which of the above two conditions holds for the data at hand.

URBANIZATION

Finally, urbanization, "U," fundamentally an economic phenomenon, is used as a measure of the geoeconomic expectation demand integrative factor. There are some socioeconomic forces which indicate a direct relationship between "V" and "U," and some which point to an inverse one. It is not the purpose of this paper to make an extensive analysis of such complex factors, but let us point out a few important consequences.

On the one hand,

(1) urbanization and population concentration—caused generally by economic progress and industrialization—beyond a certain limit increases the tension

between the members of a community due to a number of complex causes beyond the scope of this study;

(2) unemployment is usually a socioeconomic problem magnifying the gap between poor and rich; and

(3) inequality in income distribution is readily observed and the cost of anti-government propaganda, agitation, and organizational activity is reduced, increasing the rate of formation of new expectations, their transformation into new demands, and finally resulting in increased political unrest.

On the other hand,

(1) the cost of control and propaganda by government (per person) is reduced; and

(2) generally speaking, the degree of urbanization reflects a given degree of exposure to modernity by a given segment of the population which is affected. Modernization has certain economic benefits which are desired.

Assuming a uniform distribution of socioeconomic costs, "ΔCU," and benefits, "ΔBU," associated with a given increase in urbanization, the net effect upon political unrest cannot be postulated a priori. Hence, we can write the following expression:

$$V = f_0(U) \quad \text{ceteris paribus}$$

$$\text{and} \quad \frac{\partial V}{\partial U} \leqslant 0 \quad \text{if} \quad \left|\frac{\Delta BU}{\Delta CU}\right| \geqslant 1$$

$$\text{or} \quad \frac{\partial V}{\partial U} \geqslant 0 \quad \text{if} \quad \left|\frac{\Delta BU}{\Delta CU}\right| \leqslant 1$$

where U is urbanization. We have used the percentage of population living in cities with over 20,000 inhabitants as an index of "U," although various other measures can also be used (Russett, 1964).

In terms of partial elasticities, the above condition can be stated thus:

$$\frac{\partial(\log V)}{\partial(\log U)} \leqslant 0 \quad \text{if} \quad \left|\frac{\Delta BU}{\Delta CU}\right| \geqslant 1$$

$$\text{or} \quad \frac{\partial(\log V)}{\partial(\log U)} \geqslant 0 \quad \text{if} \quad \left|\frac{\Delta BU}{\Delta CU}\right| \leqslant 1.$$

Specification of the Model

As a result of the above theoretical analysis, the dependent variable, "V," is postulated to be a function of several economic variables as shown below:

$$V = f(Y, G, A, M, R, U, W),$$

where W is a disturbance random variable standing for all other factors not stated or errors in measurement.

Theoretical results are suggestive but fail in general to provide exact procedures for the specification of the model—i.e., the determination of the functional form which relates the variables of the model once they are singled out. Because, in principle, an infinite number of specifications is possible (even for a two-variable model), it is neither necessary nor desirable to specify the model in advance and treat it as an immutable theoretical construct. For the task at hand, however, only two widely used functional forms in econometrics are considered—the most simple and plausible specifications from a theoretical point of view. Perhaps a greater correlation coefficient could have been obtained by further "curve fitting," but this has not been our purpose. The linear function has two important properties—namely, the property of proportionality, indicating that the result of the action of each separate factor is proportional to its value, and the property of independence, implying that the total result of an action is equal to the sum of the results of the action of separate factors. But the first property does not appear useful, relevant, or realistic for the problem at hand since it implies, for instance, that each fixed change in the level of urbanization causes a corresponding fixed change in political unrest or stability, as the case may be, irrespective of the initial magnitude of the variables. Consequently, it was recognized that a model which relates the corresponding percentage changes in the variables may be more realistic.

Empirical analysis of the data has strengthened the theoretical preference for the postulated model embodying the above property. A greater coefficient of multiple correlation and a greater level of significance than that obtained by linear specification results. Accordingly, the following constant elasticity or logarithmic linear model is specified:

$$V = K \cdot Y^{b1} \cdot G^{b2} \cdot A^{b3} \cdot M^{b4} \cdot R^{b5} \cdot U^{b6} \cdot W,$$

where K is a constant. Taking the natural logarithms of both sides, we get the regression equation:

$$\log V = \log K + b1 \log Y + b2 \log G + b3 \log A + b4 \log M +$$
$$b5 \log R + b6 \log U + \log W.$$

The coefficients, b1 . . . b6, are the elasticities of V with respect to various independent variables as discussed previously. For example,

$$b1 = \frac{(\log V)}{(\log Y)}$$

gives the percentage change in the level of V for a 1% change in the magnitude of Y, while other factors are kept constant. Log W is assumed to be normally distributed around the regression plane with a zero mean, constant variance, and zero covariance (Johnston, 1963).

DATA AND REGRESSION RESULTS

We have used cross-sectional, cross-national data from 26 countries of different regions where data have been available, reliable, and complete. The magnitude of variables of the model are averages of several years, representing a single point. The main advantages of using cross-sectional data in this particular case are as follows:

(1) The greater range of variation in the economic variables among countries of different regions, coupled with a lesser degree of interaction between independent (explanatory) variables, makes possible a more reliable determination of the regression coefficients than does the time series data. In addition, since the countries are at various stages of socioeconomic development, they may be thought to represent points on a path that a typical country would follow in a hypothetical process of instantaneous growth to an advanced economy (Chenery, 1960).

(2) The data actually available are mainly cross-sectional, and, since they have been collected recently, they may be more accurate than time series data.

(3) Representing the average value of several years as one point has the benefit of averaging out a large portion of the transient or random fluctuations of the variable.

(4) Generally, achievement claims by governments may be more exaggerated for a short period than for a long stretch of time, especially when later administrations are ready to correct the inflated claims of their predecessors.

This constitutes another advantage of representing each point by the average magnitude of several years instead of an instantaneous value at one moment in time.

(5) Finally, despite the aforementioned advantages of using cross-sectional data in this particular case, it must also be pointed out that, due to the scarcity of time series data in general, other approaches are not readily available.

Although there exist some differences in the statistical accuracy of the information available for various countries (Russett, 1964), there are four reasons why we have not tried to improve or correct the available data by certain arbitrary means:

(1) Large variation in the actual magnitudes of variables lessens the significance of such errors.

(2) It is not certain that the manipulation of data based on an a priori rule would lead to its improvement.

(3) In general, it is not possible to find the exact means by which data are actually obtained and processed in each particular case.

(4) The purpose of this paper is not to contribute to the methodology of the usage of data in econometric models.

Finally, it should be pointed out that, assuming the validity of the range and associated probabilities of errors as stated in the data source reference, the results obtained and conclusions reached in this paper could only be marginally affected.

The observations are used in two ways, unweighted and weighted according to the population size "P" of each country (see Appendix for the data sheet; see also Russett, 1964). In Tables 1 and 2, a summary of the unweighted and weighted regression results, respectively, are given. Decimal numbers are rounded to the nearest hundredth.

The unweighted regression procedure is straightforward and needs no further explanation except for the interpretation of the results and their comparison with that of a weighted regression. In the weighted regression, the smallest country in population (i.e., Israel) is considered as an observation unit size. Accordingly, a country "n" times greater in population is entered as "n" points with identical statistics. Thus, we formally assume that a country like India is made up of so many countries grouped together. The reason for the adoption of this assumption and, thus, the weighted regression is to give a size-determined proportional influence to the observation points. However, if the legitimacy of this assumption is questioned, then the resultant t-ratios (Table 2) are to be considered inflated and thus taken with caution.

TABLE 1
UNWEIGHTED REGRESSION ESTIMATES OF THE POLITICAL
UNREST MODEL

Variables	Coefficients	Regression Coefficients	Standard Errors	T-Values
Per capita income "Y"	b1	−2.68	1.62	−1.66
Per capita income growth "G"	b2	−2.27	0.80	−2.82
Income distribution "A"	b3	−2.98	1.68	−1.77
Socioeconomic mobility "M"	b4	−3.10	1.48	−2.10
Communication intensity "R"	b5	0.94	1.09	.86
Concentration factor "U"	b6	0.35	1.94	0.18

NOTES: Degrees of freedom = 19. The coefficient of multiple correlation R = .83. The coefficient of multiple determination R^2 = .67. The intercept K = 17.99. All coefficients are significant at about .05 or lower levels of significance with the exception of b6 which is not significant.

Furthermore, note that, although countries are observation points, political systems are not. Two countries with identical economic statistics but completely different political systems would look identical and influence the results equivalently in this study. The results of unweighted and weighted regressions are in general agreement but for the following exceptions. As it is seen for the unweighted regression, urbanization appears as an impotent explanatory variable, implying that the costs and

TABLE 2
WEIGHTED REGRESSION ESTIMATES OF THE POLITICAL
UNREST MODEL

Variables	Coefficients	Regression Coefficients	Standard Errors	T-Values
Per capita income "Y"	b1	−1.60	0.22	−7.30
Per capita income growth "G"	b2	−0.77	0.12	−6.50
Income distribution "A"	b3	0.18	0.24	0.74
Socioeconomic mobility "M"	b4	−1.76	.14	12.33
Communication intensity "R"	b5	1.05	0.17	6.16
Concentration factor "U"	b6	−2.53	.34	−7.41

NOTES: Degrees of freedom = 626. The coefficient of multiple correlation R = 91. The coefficient of multiple determination R^2 = .83. The intercept K = 20.75. All coefficients are significant at 0.001 level of significance with the exception of b3 which is not significant.

benefits of urbanization neutralize each other insofar as political violence is concerned, while weighted regression results imply that benefits of urbanization overcome its costs—i.e., political violence and urbanization are inversely related. Since practically all violent revolutions and unrest since World War II have taken place in predominantly agricultural countries, weighted regression results seem more realistic. In either case, suggestions that urbanization as such contributes to political violence are not in general supported. Thus, population migration from rural regions to urban centers is most often voluntary and entails a net gain in benefits. Finally, it should be noted that this result does not impart any information concerning criminal violence in urban centers.

In the theoretical analysis it was suggested that, beyond a given optimum level of income distribution, further egalitarian measures may increase violence as a privileged class resistance to further erosion of privileges increases. However, it is difficult to accept that this optimum level has been reached for the sample as a whole, as unweighted regression results suggest. It can be speculated that this is due to the fact that a number of relatively small and rich countries have achieved this level of income distribution. Hence, their number, not relative size, influences the unweighted regression results more heavily than is appropriate from a population-size standpoint. It appears that weighting the observations has compensated for this flaw. Thus, in addition to the above two refinements leading to more plausible results, the weighted regression's additional sixteen percent explanation of political violence is of some empirical significance. Other results of the two regressions are in general agreement, and thus the following conclusions are supported by both methods of analysis.

Summary and Conclusion

In general, our empirical analysis strongly supports the a priori assumptions postulated and the theoretical results obtained in this study.

The above model explains a large portion of the variation in the level of political unrest, using certain universal explanatory economic factors (see R^2, Tables 1 and 2). Specific or local factors—such as location, ethnic, racial, and religious differences—could also be included and tested in more complicated time series or cross-sectional models. Here, however, we have been interested in universal factors—hence, the analysis of cross-national data.

(1) The results obtained in this paper suggest that concrete economic conditions must be improved in order to reduce political unrest. Note that the material "composition" of the gross national product—and not merely its associated monetary magnitude—may also be a determining factor of violence, although it is not investigated or tested here. For example, would two countries equivalent in income level, but one with a greater production and ownership of private guns and the other with a greater construction and use of playgrounds, exhibit the same level of violence? A corollary of the above is the division of income into public and private sectors, which may be a contributing factor to political stability or instability.

(2) Income growth makes feasible the realization of a number of current expectations and demands and creates an optimistic time structure concerning the future flow of additional benefits from the viewpoint of an individual or of larger social units. According to the regression results, it appears that, in economic and social terms, the benefits of a sustained income growth are greater than its cost. However, our conclusion here refers to the range of growth rates observed in the world today. Increasing the income growth rate requires increased savings and necessitates a higher rate of social transformation, inflicting greater hardships on various social units and society as a whole. In fact, it is rather obvious that, beyond a threshold level, a higher income growth rate would increase violence rather than decrease it. Thus, as far as political stability is concerned, there exists an optimum rate of income growth. This optimum growth rate may be different for different countries or may vary for the same country over time. We have not attempted here to determine an average optimum rate for one or more countries.

(3) Consistent with the conclusion of other writers discussed previously, the weighted regression results in this study indicate that income inequality is a contributor to political unrest. However, it should be noted that the *level* of per capita income, the absolute level of economic well-being, is a more influential factor than the extent of income inequality, or the relative economic well-being. At least from an economic point of view, this conclusion should modify the emphasis on relative deprivation theories of political unrest. It is reasonable to speculate here that income inequality *among* countries, may also give rise to political unrest. This observation and its logical implications have comprised perhaps one major reason besides political interests and humanitarian

considerations for various proposals concerning a certain degree of income redistribution among nations. The present model, however, does not test the validity of the hypothesis that income inequality among nations may be a contributing factor to political unrest within, or friction among, nations. Furthermore, no attempt is made here to determine the optimum level of income inequality.

(4) Socioeconomic mobility, measured by the extent of the availability of educational opportunity, affects political unrest in the predicted direction. Apparently the stabilizing effects of socioeconomic mobility overcome the previously stated possible destabilizing consequences for the present socioeconomic structure of the countries in the sample.

(5) The fact that socioeconomic mobility and the income growth rate are stronger explanatory factors than is relative deprivation in explaining the level of violence permits us to formulate the following tentative principle. Ceteris paribus, the impact of deprivation on political unrest is of a lesser importance than the rate of its dissolution; hope for a better day evidenced by favorable change makes an intolerable condition tolerable, while hopelessness due to persistant stagnation may make an otherwise tolerable situation intolerable.

(6) In our theoretical discussion, we hypothesized that mass communication could affect the level of political unrest one way or the other, depending on the level of expectations, "E," and the extent to which these are fulfilled, "G." This indicates that, generally, formation of the rate of expectations and their transformation to demands, "E," is greater than the rate of fulfillment, "G," or that the rate of rising dissatisfactions is greater than the rate of their compensating remedies in the countries considered.

Conclusions (4) and (5) together permit us to formulate the following tentative yet important principles: The more the facts of a social condition are known by the people, the greater will be the likelihood that they will learn to dislike it more (or appreciate it less), and, conversely, the less people know about the facts of a social condition, the greater will be the likelihood that they will dislike it less (or appreciate it more). Furthermore, economic resources allocated to censorship and to the production and distribution of misinformation by the governments, past and present, of various countries supports the above principle. In addition, this principle suggests that an increase in knowledge concerning the facts of a social condition and the associated heightened consciousness of sufficient

members of a social unit is necessary for the formulation of demands and for the implementation of any social transformation. Thus, heightened social consciousness leads to dissatisfaction and, if not heeded, to political violence. This finding will hold true as long as heaven on earth remains unattainable and man remains curious and imaginative and has preferences.

(7) An important general conclusion concerning the variables possessing a dual nature and exerting a dual effect on political unrest is the following: In some cases, opposing forces are almost neutralized, leaving the variable in question with small "net" explanatory power, while in others, one set of forces becomes the dominating one. From a methodological point of view, the necessity of empirical research in such cases is unquestionable and imperative. No other method seems capable of assessing or predicting the net effect of such variables on political unrest. However, for some explanatory variables such as income growth rate, political unrest is not a monotonically dependent variable for all ranges of independent variables. Thus most present theories of political violence which are based on this or that factor(s), be it economics or otherwise, are at most piece-wise explanations. In such theories, only an arbitrary range or direction of one or more explanatory factors is taken into account. We have concluded here that the change in the magnitude or direction of a single factor may result in an increase or decrease of the political violence depending on the initial level of the factor under consideration and the existing historical epoch.

With the generation of data from more countries and the increasing availability of data concerning other indicators, further work in this area becomes possible. These results should be considered a first step and, at best, a first approximation.

REFERENCES

BRINTON, C. (1969) The Changing Societies. New Haven, Conn.: Yale Univ. Press.

CHENERY, H. B. (1960) "Patterns of industrial growth." Amer. Econ. Rev. 50 (September): 663-664.

DEUTSCH, K. W. (1961) "Social mobilization and political development." Amer. Pol. Sci. Rev. 55 (September): 493-514.

ECKSTEIN, H. [ed.] (1964) "Introduction: toward the theoretical study of internal war," pp. 1-32 in Internal War, Problems and Approaches. New York: Free Press.

FEIERABEND, I. K. and R. L. FEIERABEND (1966) "Aggressive behaviors within polities, 1948-1962: a cross-national study." J. of Conflict Resolution 10 (September): 249-271.

GRINSHAW, M. (1970) Article in Annals of Amer. Academy of Pol. and Social Sci. (September): 9-20.

GURR, T. R. (1970) "Sources of rebellion in Western societies: some quantitative evidence." Annals of Amer. Academy of Pol. Sci. Rev. 62 (September): 128-144.

——— (1968a) "Psychological factors in civil violence." World Politics 20 (January): 245-278.

——— (1968b) "A causal model of civil strife: a comparative analysis using new indices." Amer. Pol. Sci. Rev. 62 (December): 1104-1124.

HARBISON, F. and C. A. MYERS (1964) Education, Manpower and Economic Growth. New York: McGraw Hill.

HIRSCHMAN, A. O. (1964) The Strategy of Economic Development. New Haven, Conn.: Yale Univ. Press.

JOHNSTON, J. (1963) Econometric Methods. New York: McGraw-Hill.

KUZNETS, S. (1963) "Quantitative aspects of the economic growth of nations. Part VIII: distribution of income by size." Economic Development and Cultural Change" (January).

LASSWELL, H. D. and A. KAPLAN (1950) Power and Society. New Haven, Conn.: Yale Univ. Press.

LERNER, D. (1963) "Toward a communication theory of modernization," pp. 327-350 in L. Pye (ed.) Communication and Political Development. Princeton: Princeton Univ. Press.

MITCHELL, E. J. (1969) "Some econometrics of the Huk rebellion." Amer. Pol. Sci. Rev. 63 (December): 1159-1171.

NIEBURG, H. L. (1962) "The threat of violence and social change." Amer. Pol. Sci. Rev. 66 (December): 965-973.

RICHARDSON, LEWIS F. (1960a) Arms and Insecurity. Pittsburgh: Boxwood.

——— (1960b) The Statistics of Deadly Quarrels. Pittsburgh: Boxwood.

ROSENAU, J. N. [ed.] (1964) International Aspects of Civil Strife. Princeton: Princeton Univ. Press.

RUMMEL, R. J. (1966) "Dimensions of conflict behavior within nations, 1946-1959." J. of Conflict Resolution 10 (March): 65-73.

——— (1963) "Dimensions of conflict behavior within and between nations." General Systems Yearbook 8: 1-50.

RUSSETT, B. M. (1964) World Handbook of Political and Social Indicators. New Haven, Conn.: Yale Univ. Press.

SCHILLER, H. I. (1969) Mass Communications and American Empire. New York: Kelley.

SOROKIN, P. A. (1937) Social and Cultural Dynamics. New York: American Book.

TANTER, R. (1966) "Dimensions of conflict behavior within and between nations, 1958-1960." J. of Conflict Resolution 10 (March): 41-64.

WEINERT, R. S. (1966) "Violence in pre-modern societies: rural Colombia." Amer. Pol. Sci. Rev. 60 (June): 340-347.

WILLIAMSON, R. C. (1965) "Toward a theory of political violence: the case of rural Colombia." Western Pol. Q. 43 (March): 35-44.

WRIGHT, Q. (1964) A Study of War. Chicago: Univ. of Chicago Press.

Country	Level of Violence va	Per Capita Income Yb	Income Distribution Ac	Per Capita Income Growth Gd	Socio Economic Mobility Me	Communication Intensity Rf	Concentration Factor Ug	Population ph
Argentina	217.00	490.00	0.20	0.40	82.00	175.00	48.30	20346.00
Belgium	0.90	1196.00	0.05	2.30	123.60	298.00	32.00	91.84.00
Brazil	1.00	293.00	0.29	2.80	20.90	64.30	28.10	73238.00
Chile	2.00	379.00	0.23	0.60	51.20	130.20	46.30	7827.00
Colombia	316.00	263.00	0.18	2.10	22.60	139.50	22.40	14443.00
Denmark	0.00	1057.00	0.13	3.40	77.10	365.00	48.50	4617.00
Ecuador	18.00	189.00	0.20	1.10	24.40	40.60	17.80	4455.00
Finland	0.00	794.00	0.09	4.00	88.70	289.00	31.20	4467.00
Germany (Fed. Rep. of)	0.02	927.00	0.11	5.70	85.80	319.00	47.60	54027.00
India	14.00	73.00	0.21	1.40	35.20	5.00	12.00	442195.00
Indonesia	860.00	131.00	0.20	1.70	10.70	7.40	9.10	95666.00
Iran	36.00	108.00	0.20	1.50	17.30	65.30	21.00	20678.00
Israel	3.00	726.00	0.06	6.30	84.90	194.00	60.90	2185.00
Italy	0.20	516.00	0.15	5.40	56.80	170.00	30.30	49455.00
Japan	0.10	306.00	0.09	8.80	111.40	106.70	43.10	94050.00
Mexico	4.00	262.00	0.10	3.00	33.00	96.90	24.00	36091.00
Netherlands	0.00	836.00	0.15	3.40	133.70	263.00	49.80	11637.00
Norway	0.00	1130.00	0.19	2.70	73.80	286.00	32.80	3611.00
Pakistan	9.00	70.00	0.17	0.60	25.20	3.00	8.00	94547.00
Peru	26.00	179.00	0.45	0.30	30.20	77.90	13.90	10820.00
Portugal	1.00	224.00	0.19	4.30	40.80	98.10	16.50	8992.00
Spain	0.20	293.00	0.12	4.90	39.60	90.00	39.80	30559.00
Turkey	0.90	220.00	0.21	1.90	27.20	52.50	18.20	28602.00
United Arab Republic	1.60	142.00	0.18	2.10	40.10	65.80	29.10	26593.00
United Kingdom	0.00	1189.00	0.06	2.20	121.60	289.00	66.90	52925.00
United States	0.01	2577.00	0.12	1.10	261.30	948.00	52.00	183742.00

SOURCES: a. Russett (1964: 197).   c. Kuznets (1963: 17).   e. Harbison and Myers (1964: 31-34).   g. Russett (1964: 50).
b. Russett (1964: 155-156).   d. Russett (1964: 158-161).   f. Russett, (1964: 118).   h. Russett (1964: 18-20).

[296]