DYNAMICS OF FORMAL POLITICAL STRUCTURE:

AN EVENT-HISTORY ANALYSIS*

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ABSTRACT

This paper explores a series of hypotheses from the modernization and world-system perspectives regarding the causes of changes in national political structure. We depart from the static tradition of cross-national research and apply event-history methods to records on 90 countries over the 1950-1975 period. We find that per capita gross national product, population, and ethnic diversity affect overall rates of political change. However, the effects are more complex than earlier quantitative research has shown.

DYNAMICS OF FORMAL POLITICAL STRUCTURE: AN EVENT-HISTORY ANALYSIS

The post-war period has not been a happy one for those who favor competitive national politics. The number of countries with multiparty politics declines and the number of one-party and military regimes seems to rise each year (see Sartori, 1976). This shift toward what Dahl (1971) calls hegemonic politics is such a striking feature of the modern period that the social science literature has begun to accept the trend as inevitable and unidirectional. The reality is more complex. The flow does not go only one way; some one-party and military regimes return to multiparty conditions. Understanding the nature of political change in the modern world requires analysis of the causes of the flows in both directions, into and out of hegemonic politics.

Comparative sociology and political science have addressed these issues largely with case study and static methods. Most quantitative-comparative research still relies on cross-sectional associations, sometimes supplemented by aggregate-trend analyses. But when the change process is not near equilibrium, use of static methods reveals little about the causal structure. Me show that application of dynamic models and methods gives some important leverage for unraveling the various dimensions of political change.

Our interest in this problem was stimulated by what we regard as the first serious attempt at quantitative study of the rise of hegemonic politics. Thomas et al. (in press) use a panel design to study the effects of a wide variety of factors on shifts towards state centralism.

Though the panel methodology used by Thomas et al. is a step in the right direction, it does not fully exploit the information in the data - it ignores information on sequences and timing of changes. We reanalyze the same data uith more powerful methods, applying hazard rate analysis to the event histories. Ue have two aims. First, ue wish to explore further the causes of changes in national political structure over the 1950-1975 period. Second, we uant to illustrate the value of event-history methodology to macrosociological analysis. Its usefulness in the study of events in career histories of individuals has already been demonstrated (Tuma, 1976; Tuma, Hannan, and Groeneveld, 1979). We are not aware of any application of these methods to macrosociological problems.

1. The<?rgtjcal Background

An immense body of theory and speculation discusses the forces that change political structure. We note only the main lines of argument* concentrating on those that have an obvious bearing on the dynamics ue study.

Most work on political change uses a general modernization theory, which holds that modernizing countries move along a single development trajectory previously traversed by the European liberal democracies. Any change that makes a peripheral nation more like one of the European states is assumed to increase the likelihood of "modern" competitive (or even "democratic") politics. One variant of modernization theory follows the lead of Lipset (1960) and focuses on the existence of "modern" cultural rules and modernizing institutions that prepare

individuals for effective political participation. The set of institutional arrangements that produce modern political capacities are thought to include a productive industrial economy, urbanism, modern schooling, etc. Thus nations with such characteristics ought to have more effective and stable oppositional politics.

The role of economic development has received special attention within the modernization perspective. Dahl (1971:74) summarizes the modernization argument succinctly as follous:

> "A very general hypothesis will help, I think, to establish the connection between the political system and socioeconomic level: the chances that a country will develop and maintain a competitive political regime ... depend upon the extent to which the country's society and economy: (a) provide literacy, education, and communication; (b) create a pluralistic rather than a centrally dominated social order; (c) prevent extreme inequalities among the potentially relevant strata of the country."

Oahl goes on to argue that advanced economies require efficient systems of communication and diverse specialized organizations (see also Almond and Powell, 1966). The creation of such structures "automatically distribute political resources and political skills to a vast variety of individuals, groups, and organizations" (Dahl, 1971:77). Decentralization of political skills presumably creates conditions for effective opposition to coercion and for the creation of special-interest movements.

Ue hardly need to mention that the modernization perspective holds that development equalizes the distribution of valued outcomes. Extreme inequalities are thought to destabilize competitive politics.

In recent years? the modernization perspective has been challenged by the uorld system perspective. Wallerstein (1974) argues that events are determined less by a country's internal structure than by its position in the world division of labor and by the discipline of the world market. Countries in different structural positions presumably face different constraints (that have mostly to do with the need for controlling different types of labor) and typically develop different political forms.' This perspective rejects the notion of a single development path. It argues instead that political change must be related to a country's role in the world division of labor.

Thomas et al. (in press) have adapted this style of argument, focusing on institutional rules and power relations in the modern world system, to account for the spread of hegemonic state structures. They argue that modern states must increase productivity if they are to live up to the rules of the modern game. Poor states, especially those that serve as peripheral producers of low-wage products, face intense pressure to modernize. Elites in such countries typically resort to centralist strategies to speed up the process of economic growth. According to this view, once level of development (GNP per capita) and dependence in the world economy have been taken into account, education, urbanism, and other modernizing factors on political structure should

not affect political change. Thus, as Thomas et al. formulate the problem, there is a testable difference between the modernization and world system perspective.

Finally, both perspectives agree that ethnic diversity destabilizes competitive politics. One view is that ethnic diversity creates conflict over fundamental values and that such conflict cannot be resolved through the usual process of political bargaining. Thus countries with ethnic diversity run a high risk of explosive conflict that often results in takeovers by one party or the military.[2] Thomas et al. (in press) develop the argument differently. They argue that the existence of ethnic diversity gives lie to claims to a single national identity. The "moral boundary crisis" that results creates a need for symbols of unitary national authority. As Uallerstein (1966) argues, a hegemonic state is one solution to such a need.

This brief review suggests that we focus on the role of the level of economic development,[3] measures of the spread of modernizing institutions and organizations, structural position of countries in the world economy, ethnic diversity, and inequality in affecting movement among political forms. Due to paucity of data over the whole period (1950-1975) we do not study effects of inequality. Below we discuss our measures of each of the other dimensions.

2. Research Design

Me concentrate on formal political organization and ignore political struggles and changes that occur within a form. Given our interest in formal hegemony.* the degree to which formal authority is located in a single organization in society, we devote special attention to states with only one party or in which parties have been abolished. The latter class includes military dictatorships. We distinguish both of these centralist forms from traditional no party states and from states that have some minimal level of formal political opposition in the governments states with two or more active (legal) parties.[5] That is, we identify four forms of organizations

1. Traditional no-party states: governments ruled by traditional rulers and traditional elites. These countries are usually monarchies (e.g., Libya, Jordan) and party organizations are illegal.

2. Military regimes: states in which the military rules, whether or not parties have been abolished. There are two subclasses: (a) constitutional military rule (e.g., Ghana); and (b) military coups (e.g., Ethiopia).

3. One-party states: states with only one legal party represented in the legislature (e.g., China, Czechoslovakia, U.S.S.R.); those with a single major party and several subordinates (e.g., Poland); and states in which a single party consistently dominates despite the legal existence of opposition parties (e.g., Mexico, Iran).

4. flul tipartv states: the residual category which includes states with two parties or more.[6]

Ue use data from Banks (1977) to record moves among these four categories.[7] In Table 3 below we report the coding of specific countries.

The data give yearly readings on position in this category system for 140 nations. Though Banks sometimes reports the date of the event (e.g., of a coup), dates are not available for all changes. Thus we associate events with the year in which they occur - our time unit is a year.

Our measures of independent variables and sources are as follows:

(a) level of economic development: gross national product per capita in constant 1973 U.S. dollars (IBRDUT);

(b) spread of modern organizations and institutions' urbanism (UNDY), enrollments in primary, secondary, and teritary education (UNSY);

(c) position in the world economy: export-partner concentration (UNYITS) -- see Chase-Dunn (1975) and Rubinson (1976) for discussions of the measurement and interpretation of this variable;

(d) ethnic diversity: the measure of ethno-linguistic fractionalization presented by Taylor and Hudson (1972).

Ue add as control variables:

(e) population (UNOY); and

(f) dummy variables for region: Africa, Asia, Central and South America.

Measures of all these variables are available for only 90 of the 140 countries for which measures on the dependent variable are available.

3. Methods **Q**± Analysis

Ue begin by discussing several conventional approaches to analyzing data such as these. Ue show how our methodology differs from common practice, and in particular how our procedures differ from those used by Thomas et al.

A. Panel Analysis: Table 1 records the data in the conventional panel framework: a cross-tabulation of destination by origin for the 1950-1975 period.® It shows a sharp rise in military regimes and one-party states over the 25-year period, as we remarked at the outset. Indeed 76/C of the newly-independent states end up in one of the two centralist forms.

[Insert Table 1 about here]

We are mainly interested in testing hypotheses about the causes of these changes. Thus the data in Table 1 must be related in some fashion to measures of the various independent variables listed above. The social science literature suggests three strategies for such analysis.

Most current uork on analyzing tables such as Table 1 uses log-linear models for counted data (see, for example, Hauser, 1977). If our independent variables were categorical, these methods might be appropriate. But, since some of our causal variables are quantitative, we would lose much information by breaking them into discrete categories.

The most common alternative to categorical analysis uses regression analysis or a close relative (e.g., logit analysis). Use of readily available and conventional procedures requires that the outcome space in Table 1 be collapsed into dichotomies. Thomas et al. follow this strategy. They collapse tables like Table 1 in two different ways. For one outcome, called state centralism, they combine states 1, 2, and 3 into one category and put those in state 4 into another. This procedure gives dummy variables for origin and destination. A second procedure defines a variable called military regime, which treats state 2 as a distinct category, i.e., distinguishes (2) from (1, 3, 4). Thomas et al. regress each dummy variable on its lagged value and one or more measures of socioeconomic structure of the country.

Of course the analyses of the two outcome measures are not independent. We cannot tell whether effects on state centralism simply repeat effects shown for the military regimes since some of the same

cases appear in each outcome. This method also does not deal with the constraints on discrete outcomes (see Hanuschek and Jackson, 1975, Chap. 7 for details on these problems).

Both these defects can be remedied by using logit (or probit) analysis procedures for multiple, discrete outcomes (polytomies) - see Nerlove and Press (1973). Adopting such an approach would, however, require extensive retooling. In view of the weaknesses of the panel approach (see below), we do not apply this strategy for the problem at hand.

The panel framework wastes some of the information available in these data; it ignores sequences and timing of events (see Hannan and Tuma, in press). We pay a high price for disregarding such information. To see this we must be more explicit about the process that generates events (changes in political forms). The process of change in political forms has at least two properties: changes may occur at any time (there is no fixed lag time in the process); and randomness plays a central role. Therefore the most natural modeling framework is the class of continuous-timfe stochastic processes with discrete-state space. In this framework, the panel data consist of observations at two arbitrary times of the states of N (independent) stochastic processes - observation records with gaps. We normally assume all N units have the same process, so that we think of the data as N replications of the same process. The fundamental difficulties uith the panel framework in this context concern embedding and model identification. Singer and Spilerman (1976 a,b) prove that a two-wave panel does not provide enough

information to uniquely identify an underlying process even under highly restrictive assumptions (e.g., invoking the Markov property). This is not an estimation problem; it is a more fundamental, logical difficulty.

If ue hope to identify and estimate models for political events, ue must exploit more of the information in the data. The remainder of the paper discusses the more detailed information and uses it to estimate causal effects.

B. Analysis of Transitions: Table 2 reports data in a form similar to that of Table 1 except that the entries count all observed transitions between states. Due to multiple changes for many countries, we observe 206 transitions. Table 2 tells a rather different story from Table 1. Not surprisingly it gives the impression of much greater movement. Notice how much smaller than in Table 1 are the counts on the main diagonal. For example, Table 1 shows that 72% of the countries that began with multiparty systems had the same form of organization 25 years later. Table 2 tells that only 4955 of the spells that begin in the multiparty category do not move to some other form. In addition we see that new states (those becoming independent after 1950) have a distribution of initial forms that is quite different from the array of 1975 outcomes (compare the bottom rows in the two tables).

[Insert Table 2 about here]

Inclusion of data on transitions gives slightly more leverage for model identification. But we have not come close to using all the information.

C. Event Sequences: Table 2 does not follow individual countries. Consequently, we cannot tell which multi-step patterns of movement occur most commonly. This gap is filled by Table 3 which records the 30 distinct sequences of moves we observe. The most frequent patterns are stable multiparty and colony to multiparty. There is also a good deal of movement back and forth between multiparty and military.

[Insert Table 3 about here]

Suppose that the parameters of the underlying stochastic process are constant, i.e., that there is no heterogeneity in transition rates due to social structural variations among countries. In this extreme simplification, one can use event sequences directly to test among classes of models. For example, Singer (1977) shows how to test the Markov property (see below) with straightforward conditional probability arguments (see also Billingsley (1961) and Goodman (1968)).

Some simple calculations of various conditional probabilities show that multi-step moves involving transiting between multiparty and military do not fit a constant rate Markov model. If we assumed that the rates were indeed constants over all N units (i.e., no population heterogeneity), these calculations would force us to abandon the Markov assumption. However, we suppose that social structural differences do indeed affect transition rates, and the rates are thereby not constant. In this context the Markov property cannot be tested quite so simply. Some of the apparent dependence on history may reflect the continued operation of stable causal variables that we include in the analysis reported below. Unfortunately, we do not have enough cases to conduct

causal analysis separately for various sequences so that ue can do a full-bloun test of the Markov property given heterogeneity. Belou ue discuss an analysis strategy that addresses this issue indirectly albeit partially.

0. Event-History Analysis: An event history adds information on timing to an event sequence. The main value of using event histories is that the identification problem discussed above does not arise in such an extreme form.' Me have discussed strategies for event-history analysis at length elseuhere (Tuma and Hannan, 1979; Tuma et al., 1979; Hannan and Tuma, in press). Here ue repeat only the minimally essential detail s.

Our approach is to state the dynamic process in terms of tuo sets of fundamental parameters:

(a) the instantaneous transition rates:

$$r_{jk}(t) = \lim_{a-t\hat{}0} pj_{k}(t, t+At)/At$$

where pjic(t, t+At) is an ordinary transition probability for movement from state j to k; and

(b) the hazard function, the rate of leaving a state:

$$rj(t) = - Z\ rjic(t)$$
$$IT^{*}$$

Ue build causal effects into these parameters in the following general form:

$$rjfc(t) = expUo + aiXi\,(t') + \cdots + aX\ (t')|$$

(1)

where t' denotes the time of entry into the state occupied at t. Our goal is to estimate the a's, the effects of observable variables on transition rates (or on hazard functions).[10]

Ue use specifications that differ on two dimensions: (1) Markov vs. more general forms of dependence on history; and (2) time homogeneity vs. time dependence. As is well known, the Markov property holds that history (the record of state occupancies) does not affect the future of the process once we take present state into account. Under the Markov assumption we may pool all the spells ennumerated in Table 2 into a single analysis. Ue report such analyses and label them "all-spell" analyses. If the Markov assumption does not hold, it is not legitimate to pool spells for the same country and history must be taken into account. Ue do not have enough observations to conduct any extensive non-Markovian analysis. Instead, we report analyses that use only the first spells for each country (following 1950 or date of independence, whichever is later). If the first spell results differ substantially from those that use all spells, ue suspect that ignoring higher order dependence gives misleading qualitative conclusions regarding causal effects.[1,]

The second dimension in our design concerns assumptions about the variability of hazards over time. Ue take two approaches. In the first we assume that, conditional on levels of exogenous variables upon entry

into a state (or 1950 whichever is later), the rates are constant. For this case, we use maximum-1 ike lihood estimators of the sort described by Tuma et al. (1979). Our second approach assumes a general, but unknown, form of time variation. Specifically, we assume that the hazard is:

$$rj(t) = h(t)\ \exp[BiXi(t') + \cdots + B|(X|f(t')1$$

where h(t) is constant for all units. For this specification we use Cox's (1975) partial-likelihood analysis (see the discussion in Tuma and Hannan, 1978).[12] Ue use Cox's estimator only to estimate effects on hazards (rates of leaving a state). Comparisons of Cox and maximum-likelihood estimators gives an indication of the likely importance of time variation (net of the time variation in the causal variables) and the likely noise in our maximum-likelihood estimates.[13]

E. Estimated Rates from Event-Histories: Before proceeding with causal analysis, ue report maximum-likelihood estimates of constant transition rates[1]* (assuming population homogeneity) for comparison with the proportions in Tables 1 and 2. Recall that Table 2 counts all observed transitions but ignores timing. The event-history estimators use timing of changes to estimate rates. Thus any differences between Tables 2 and 4 shows that ignoring timing makes a substantive difference. The relevant rates are reported in Table 4. Panel A gives rates using all spells; panel B reports rates estimated only from first spells. The largest off diagonal cells in Table 2 involve moves from

military to multiparty, the reverse move, and one party to military. These are also the largest rates in Table 4. There are relatively high rates of flou into military (first column in Tables 4 a,b) but even higher rates of flow out (first row). Flows out of two party are larger than flows in, which are indeed quite small.

[Insert Table 4 about here]

Using data on timing of events makes a difference. In Table 2, which ignores timing, the percent flows from multiparty to military and back are fairly similar. In Table 3 these two rates are quite different; the flow rate from military to multiparty is more than double the magnitude of the reverse flow.

Table 4 allows us to evaluate Huntington's (1968) claims about the relative stability of the political forms.[15] He argues that no party, military, and multiparty systems lack the institutional support necessary for stability, but that the one-party system is inherently more stable. Huntington also claims that multiparty systems are more likely than one-party states to undergo military coups. The panel data in Table 1 appear to support these assertions; one-party systems show the least movement (relative frequency of .25) and are only half as likely as multiparty states to be military regimes in 1975 (relative frequency of .12 vs. .23). These results, however, are spurious and arise solely because the panel design has ignored important information, as can be seen in Tables 2 and 4. In Table 2 the one-party form appears to be the most stable (relative frequency .50), but its degree of

stability is indistinguishable from that of other forms (military, the least stable, has a "staying" frequency of .48). Further, movement from one party to military becomes more likely (.47 vs. .39) than movement from multiparty to military. When the rates for each origin state are summed in Table 4, the multiparty form is most stable (.043) and the one-party state ranks third (.049). Only the military form is less stable than one party. In addition, the rate of movement from one party into military is higher than the same rate for multiparty origins (.046 vs. .033). When the data are properly analyzed, Huntington's claims are shoun to be wrong on two counts. First, the one-party form is no more stable than the others. In fact, it may be less stable. Second, the multiparty form is apparently no less susceptible to military coups than the one-party state.

4. Causal Analy?i?

Before presenting our main findings, we review the results of Thomas et al., who sought to arbitrate between the two competing accounts discussed earlier. Thomas et al.'s panel regressions reveal consistent negative effects of per capita GNP on state centralism. This finding holds both when centralism is measured as military rule and when military regimes and one-party states are combined into one category. This finding does not help distinguish between the modernization and world-system perspectives as both predict that national wealth retards movement towards centralism. But while Thomas et al. find no evidence that other modernizing experiences (urbanism, schooling, etc.) affect centralism, they do find that two measures of national dependence

(export-partner concentration and investment dependence) significantly increase centralism. Thus they conclude that the data favor the uorld-system perspective.

Ue explore the effects of most of the same independent variables.[16] Like Thomas et al. ue study the 1950-1975 period. Ue chose not to collapse categories of political forms, however. Some of the differences between our analysis and Thomas et al.'s may reflect this difference. In general, we think that the results presented below diverge from those of Thomas et al. largely because we have used a more appropriate model and estimation procedures.

Ue begin with simple models and gradually increase complexity. First, we estimate effects on overall rates of movement (averaging over both origins and destinations). Then we consider effects on rates of movement out of particular forms (averaging over destinations) and then on rates of movement into forms (averaging over origins). These analyses would generally be less useful than a complete origin by destination analysis. Unfortunately, our sample is too small to reliably estimate effects on 12 distinct transition rates. Ue have nonetheless performed such analysis and discuss the findings briefly. However, we focus most attention on the results of the simpler procedures.

A. Effects an Changes of all Types: First, we analyze whether the measured socioeconomic conditions affect overall rates of movement among

political forms. Only four of the variables ue examined had significant effects:[17] GNP per capita, population, ethnic diversity, and region (a set of dummy variables). Table 5 gives the relevant findings. Both uealth (or productivity) and population decrease rates of political change.

[Insert Table 5 about here]

We pay particular attention to the GNP effect. The estimates in Table 5 imply huge differences in rates of political change betueen various levels of development. Figure 1, uhich relates per capita GNP to the multiplier of the base rate given by the constant and the levels of other independent variables (see equation [1]), makes this plain. Given the conventional demarcation betueen developed and developing countries at roughly $1000 GNP per capita. Figure 1 implies strong effects of changes in GNP over the uhole range of development. At the same time, the curve suggests that GNP has little effect on rates of political change among developed or core countries.

[Insert Figure 1 about here]

The close agreement betueen maximum-likelihood and partial-likelihood estimates,[18] suggests that causal effects are not confounded uith possible temporal variation in rates of political change due to uorld-system processes. The situation is less simple regarding the comparison of analyses using only first spells uith those using all spells. It makes little difference uhich design ue use to estimate the GNP effect and slightly more difference for the effect of population.

Both effects are stronger in the first-spell analysis. Quite the opposite occurs with the other two effects. In the all-spells analysis, both ethnic diversity and regional terms have significant effects. The diversity effect is also quite strong; it implies a tuo and a half fold increase in the rate betueen the minimum and maximum values of diversity ue observe (see Figure 2). Houever, neither diversity nor region have significant effects in the first-spells analysis. These findings suggest that ethnically diverse countries contribute disproportionately to multiple changes of political form. It does not, houever, appear to affect the rate of changing at all. This difference in findings betueen methods may also mean that the Markov assumption is not appropriate here.

[Insert Figure 2 about here!

B. Effects on Movement Out of Specific States: Next ue disaggregate spells by origin and repeat analyses such as those in Table 5 for each origin category. Thomas et al.'s analysis suggests that the GNP effect uill vary sharply by origin. According to their argument, richer nations should be less likely to move out of noncentralist forms and more likely to move out of centralist forms. Our results are quite different. GNP has a stronger effect on the rate of moving out of the one-party form than on the rate of leaving the multiparty form. At the same level of uealth, one-party states are at least as likely as states uith multiple parties to retain their form of organization. National uealth has small and insignificant effects on rates of movement from military regimes and tuo-party states.

An interesting difference concerning the effect of ethnic diversity can be seen in Tables 6 and 7. Whereas Table 5 showed that ethnically-diverse states are more likely to change political forms. Tables 6 and 7 show that the effect holds particularly for multiparty states. Apparently, states with high ethnic diversity and a political structure that legitimates political organization of such diversity are especially unstable. On the other hand, it appears that ethnic diversity decreases the rate of leaving the one-party category (see Table 7). Ethnically-diverse states are likely to transit from the multiparty form. If they move to a one-party form, they are likely to retain this political form.

[Insert Tables 6 and 7 about here]

Notice in Table 6 that none of the variables have any substantial (or significant) impact on the rate of abandoning military rule. In particular, military regimes, unlike nonmilitary centralist states, do not benefit in terms of stability from national productivity.

C. Effects on Entering Cateoories; Next we reverse our procedure and examine effects on flows into the four categories, ignoring origins. The relevant findings appear in Table 8. These results support the arguments of Thomas et al. GNP per capita lowers rates of moving into the two centralist forms, military and one party. Moreover, there is a suggestion of a positive effect of GNP on rates of transition to the multiparty form (only in the analysis of first spells).

[Insert Table 8 about here]

The most striking finding in Table 8 is the impact of ethnic diversity on flows into the one-party form. Take the smaller estimate of this effect, in Panel B. It implies that the rate for countries close to the mean on diversity (.5) is more than two and a half times larger than for completely homogeneous countries; countries close to the maximum (with diversity scores of .9) have an estimated rate six times larger. Ethnic diversity appears to exert a strong force on movement towards one-party rule.

D. Effects an Specific Transition Rates: Finally, we turn to the detailed findings regarding causal effects on specific transitions. Even ignoring the no-party form, there are 12 distinct transitions and thus 12 sets of parameters to be estimated. Consequently, we get rather imprecise estimates of effects. We do not report the estimates but instead discuss the patterns that appear.

On the whole, the detailed findings suggest that our results on rates of leaving states (ignoring destinations) and on rates of entry (ignoring origins) give a reasonably accurate picture of the process. Recall that we find that GNP and population depress rates of movement and also lower rates of entry into centralist forms. These patterns continue in the detailed analysis. The only new piece of information is that per capita GNP lowers the rate of military coups for one-party states (indeed this effect is the strongest and most significant GNP effect in the set). National wealth also affects movement betueen the two centralist forms.

There is no clear pattern for effects of ethnic diversity. Me find a very strong effect (4.43) for moves from multiparty to one party. But ue also find that ethnic diversity significantly increases the rate of transition from military to one party. Thus ethnic diversity favors one-party rule generally. However, the effect is strongest for multiparty states.

5. Discussion

This analysis agrees partly uith that of Thomas et al. Both studies find no evidence that modernizing experiences and institutions affect rates of change in political forms. The absence of such effects is not especially informative; ue can think of a great number of reasons (beginning uith problems of measurement of modernizing experience) why these research designs are not well suited to detecting such impacts.

The most interesting comparison of the panel and event-history analyses concerns the impacts of GNP per capita. The panel regressions support the common contention that development reduces the likelihood of political centralism. Our event-history analysis adds two additional dimensions to the analysis of these issues. First, we retain the distinctions among four distinct political forms; we do not collapse categories. Second, we look separately at effects on leaving a political form and at effects on movement into forms.

Our analyses suggest that military regimes and one-party states have different dynamics. Two findings are notable in this respect. First, ethnic diversity increases the rate of movement into the one-party form

but does not affect the rate of military takeovers. Second, GNP has a significant negative effect on the rate of transition from one-party to military control. Both findings imply that ue should not consider these two forms as alternative indicators of hegemonic state organization.

Our general findings regarding GNP effects agrees uith the panel regressions in one respect but disagrees in another. The tuo analyses agree uith respect to effects on movement touards centralism or hegemony. Richer countries are less likely to move from multiparty politics to one-party or military rule. In this respect the conventional uisdom appears correct. Houever, the literature does not anticipate our findings concerning the second aspect of the process of change, the rate of moving at all. Wg, find that countries uith high per caoita GNP are less likelv to change political forms, whatever the form. This effect holds uith equal force for the most common centralist form (one party) and for the decentralist form (multiparty). Put loosely, successful countries retain their political strategies. This result gives a very different image of the underlying dynamic process. It calls into question the world-system arguments advanced by Thomas et al. Further, it clearly invalidates Huntington's (1968) claim that sustained modernization threatens the one-party system.

There is another important difference betueen our findings and those of Thomas et al. Ue find no evidence that dependency, as measured by export-partner concentration, affects political stability or the direction of change.

Event-history methods (but not panel regressions) support the widespread belief that ethnic diversity destabilizes politics, especially competitive politics. However, the interpretation of this relationship is problematic. On the one hand, diversity may simply undermine political bargaining and explode coalitional politics as some political scientists argue. On the other hand, ethnically-diverse countries might have a greater need for overarching symbols of nationhood that can be filled only by a hegemonic state structure. Or, the relationship might be more contingent and dynamic. Elsewhere (Hannan, in press; see also Nielsen, 1977 and Olzak, 1978) we have argued that expansion of state structures may create the conditions for successful large scale ethnic resistance to the state. So alterations in the forms of political structure (especially towards formal hegemony) might create and intensify ethnic conflicts. These conflicts may in turn destabilize the political structure. Unfortunately, the data at hand does not contain sufficient detail on ethnic organization and collective action to permit more refined analyses of these issues. Ue think that this matter should have high priority in the continuing research on political change.

Ue have found very close agreement between maximum likelihood and partial likelihood where both are defined. This agreement suggests several conclusions. First, there may be little variation over the 25-year period in rates of leaving specific political forms. This conclusion differs from that of Thomas et al. who contrasted the 1950-1960 and 1960-1975 periods. Second, our estimates of causal effects are relatively insensitive to the exact timing of events. Our

ML estimator uses exact timing while PL uses only information on the ordering of times of changes.

We see larger differences regarding the other dimension of our design: first-spell versus all-spell analysis. As we suggested above, our results may imply a complex dependence on the history of the process. Neither of our estimators take history into account. Therefore, we view our findings as only a first approximation to a more complete analysis of these issues. Any such analysis will require use of more data than we used - this will undoubtedly require extending the data base further back into history.

Finally, as panel regressions and event-history analysis give different qualitative findings for these issues, the choice between methodologies makes an important substantive difference. We argue that the methods used in this paper make better use of available data and provide a sounder footing for further research.

APPENDIX

Fyngtigngl Isrm of ME Effect

Throughout the analysis ue have reported log-linear GNP effects. As Figure 1 shous, this specification implies that a unit increase in GNP per capita has its strongest impact near zero GNP and that the effect of a given change declines monotonically at each higher level. In this appendix ue compare estimates from the log-linear model uith those from a model uith a threshold. Ue use a function ($r(t) = \exp laG^{2}$], uhere G is per capita GNP) that permits the relationship betueen GNP and the rate of political change to have a backuard S-shape. This permits increments in GNP to have small impacts on political stability for very poor as uell as very rich countries.

All the qualitative conclusions of the paper are unchanged uhen ue use this alternative specification for the GNP effect. GNP still has a very substantial (and statistically significant) negative effect on the overall rate of movement. The effects of other variables are also unaffected by the change in the model.

Still the tuo specifications give different impressions of the nature of the GNP effect. Figure A.1 plots the multipliers of the base rate of political change as functions of GNP for both specifications. The log-square form tells that there is almost no difference in rates of change betueen countries uith GNP's of $50 and $200; the curve is almost horizontal. The log-linear model implies a large difference in rates betueen these tuo levels of GNP. That is, the tuo specifications have

quite different implications about the relationship of GNP per capita to political stability for the least developed nations.

[Insert Figure A.1 about here]

Given this difference, ue uould like to use data to choose betueen the specifications. Since the tuo models are not hierarchically nested, ue cannot use classical hypothesis testing procedures to discriminate betueen them. The usual alternative procedure is to use calculated residuals for specification tests. Unfortunately, since r5k is not observable, ue cannot look directly at residuals (observed minus predicted rates). Instead ue use the fact that expected duration='/rj* and calculate observed minus predicted durations in states. Me can then search for relationships betueen residuals and levels of GNP to determine uhich curve in Figure A.1 fits the data better. But ue encounter another problem: censored observations do not have completed observations so ue can calculate residuals only over the uncensored spells. Clearly this amounts to selection on an endogenous characteristic and uill generally lead to systematic differences betueen selected and unselected samples. Nonetheless, ue overlook this defect in the procedure and calculate residuals for completed spells for countries in the range in uhich the specifications disagree (GNP<$1000). Clearly this procedure must be judged cautiously due to the omission of censored spells.

The plots of calculated residuals by GNP per capita are shoun in Figure A.2 and A.3. Neither specification is a clear uinner. Rather the log-linear specification seems to predict someuhat better for the

lowest portion of the range (GNP < 200). It appears that changes in GNP below this level have a larger effect than the log-square model implies. But the log-square predicts better over the range from 200 to roughly 800. So we are unable to use empirical methods to choose between the two simple specifications. Perhaps a more complex model can improve the fits we achieved. Given the substantive importance of the differences between these formulations, this matter deserves some attention.

(Insert Figures A.2 and A.3 about here!

FOOTNOTES

1. There is considerable debate uithin the broad world system perspective regarding the relationship betueen the state and the social structure. For example, Skocpol (1977) has critized Mailerstein for neglecting the specific dynamics of the state. A variety of vieus on this issue can be found in the papers collected by Tilly (1975) and by Meyer and Hannan (in press).

2. The modernization perspective does not really have a satisfactory explanation of the destabilizing effects of ethnic diversity. It argues that modernization erodes primordial ethnic identities and defuses ethnic conflict. At the same time, theorists like Oahl argue that social diversity promotes competitive politics but that cultural pluralism favors hegemonic politics. But it is not clear uhy some kinds of pluralism have one effect and other types of pluralism have the opposite effect.

3. Some readers have reminded us that one theme in the modernization perspective holds that rapid development is destabilizing because it raises expectations disproportionately to outputs (see especially Oeutsch, 1961 and Olson, 1963). Me have not tried to distinguish effects of levels of economic development from rates of change. It is not clear hou one should do so. Since virtually all countries have grouing economies, lack of grouth is tantamount to decline. Then hou large must the grouth rate be to destabilize the political

structure? The literature does not offer any clues. What is more, the rate of grouth in expectations may nou be largely uncoupled from national growth rates. Expectations may be set by world culture and transmitted by mass media (Meyer and Hannan, 1979). Moreover, a good deal of recent sociological research has cast doubt on the thesis that political erruptions reflect revolutions of rising expectations. Finally, most of the modernization literature does not make separate hypotheses about levels and rates of change in economic development. Thus our empirical analysis conforms to the most widespread version of the modernization argument.

4. Our concern here is with formal aspects of political structure. Mhile formal structure no doubt constrains process, the relationship between formal structure and the character of politics is at best a weak one. In particular, formal structure may not imply a great deal about political participation, legitimacy of the state, political freedom, centralization of power in the state, etc. Formal structure does, however, determine whether certain dissident movements operate within existing political structures or underground. It may also tell something about the relationship betueen state and society (Swanson, 1971; Thomas et al., in press.) Ue treat formal patterns as interesting in their own right, while taking care not to suggest that changes in form imply anything about the quality of outcomes to citizens.

5. Political scientists typically make a major distinction between two-party and multiparty systems (see, e.g., Huntington (1968) and LaPalombara and Weiner (1966)). However, the literature does not agree about criteria for distinguishing these forms. This lack of agreement leads to many different coding schemes. For example, Blondel (1969) codes 21 countries as having two-party systems. Banks and Textor (1963) find 11. Sartori (1976:185) argues persuasively that a strict definition yields only three countries with two-party systems. For these reasons, we chose to ignore this distinction and classify all systems with two or more active parties as multiparty.

6. At times, even the distinction betueen one-party and multiparty states breaks down. For example, India has been labelled a dominant party system (Duverger, 1960) even though the opposition often mobilizes a substantial popular vote. We have followed Sartori's (1976) suggestion to use average election return distances to define multiparty. If the majority party has a greater than 40% lead over the second party for tuo consecutive elections, ue code the country as one party. This rule places India in the multiparty category but puts Iran in the one-party category. For countries uhere election returns are unavailable, ue have used the party system classifications given by Sartori (1976), Banks and Textor (1963) and Banks (1977). Overall ue have attempted to reflect the consensus of the literature in our codings.

7. Ue do not study stability of regimes within forms. Thus if a military coup occurs within a country already ruled by another faction of the military, we do not code such an event.

8. Ue could, of course, produce tables for other time periods. The logic of our argument does not depend on the periods of measurement, however.

9. More precisely, event histories eliminate the identification problem as long as we restrict attention a priori to a certain class of models, e.g., Markov processes.

10. Following Dahl's (1977:67-68) suggestion we also used another specification for the effect of GNP per capita that permits a threshold effect as well as a floor effect. This involves replacing GNP per capita with its square in equation (1) (see Hannan, Tuma, and Groeneveld, 1978). Ue obtain similar qualitative results from the two specifications and cannot clearly choose one over the other. In the text we report estimates from the pure log-linear model (equation (1)). In the appendix we contrast the findings from the two specifications.

11. This comparison gives only a rough indication of a problem. If the process is indeed non-Markovian, even the first-spell analysis is misspecified due to the omission of the relevant historical data. On the other hand, misspecification of the causal structure or of

the nature of time variation in rates may also lead to differences betueen the tuo analyses. John Meyer (personal communication) has suggested that first spells for neu states may differ from other spells because the initial political form is imposed by the outgoing imperial ruler. For these reasons, comparison of first and all spells can at best identify problems that deserve further research.

12. Ue obtained both maximum-likelihood and partial-likelihood estimates using Tuma's (1979) RATE program. The partial-likelihood extension uas developed by Barbara Warsavage. Cox's estimator has recently been extended to the case of multiple destinations (or competing risks), see Holt (1978) and Prentice et al. (1978). Ue have not yet implemented this extension, houever.

13. Ue have also estimated models uith explicit time dependence (and uhich take into account changes in levels of independent variables during spells). Ue do not report results of these analyses since they did not significantly improve the fit relative to the simpler models.

14. For this simple case, the maximum-likelihood equation has an explicit solution (given in Tuma and Hannan, 1978) so that estimates may be computed in a straightforuard uay.

15. Huntington's argument separates tuo-party and multipary systems; houever, ue do not in the current discussion. Separate analysis

using this distinction does not yield substantially different conclusions.

16. Me did not have access to measures of investment dependence (one of Thomas et al.'s measures of dependence) for enough countries for detailed analysis. Thus ue did not use this measure in our uork.

17. Me use the .10 level of significance. For the convenience of readers uho prefer more stringent tests, ue have indicated the .05 and .01 levels as uell.

18. Me do not report estimates of a constant for PL. Recall from above that the equivalent of a constant for PL is h(t) a time-dependent function.

REFERENCES

Almond, G. A., £ Powell, G. B.》 Jr. Comparative politics: i developmental approach. Boston: Little Brown, 1966.

Banks, A. S. Poli tical handbook of the world. New York: McGraw Hill, 1977.

Banks, A. S.》 & Textor, R. £ cross-po!itv survey. Cambridge, Massachusetts: The MIT Press, 1963.

Billingsley, P. Statistical inference in markov processes. Chicago: University of Chicago Press, 1961.

Blondel, J. Introduction to comparative government. New York: Praeger, 1969.

Chase-Dunn, C. The effects of international economic dependence on development and inequality: a cross-national study. American Sociological Review, 1975, 40, 720-738. V

Dahl, R. A. Polyarchy: participation and opposition. New Haven: Yale University Press, 1971.

Deutsch, K. W. Social mobilization and political development. American Political Science Review, 1961, 55, 493-514.

Duverger, M. La sociologie des partis politiques. In G. Gurvitch (Ed.), Traite de sociologie Vol. II. Presses Universitaives, 1960.

Goodman, L. A. Analysis of cross-classified data: independence, quasi-independence, and interactions in contingency tables with or without missing entries. Journal of American Statistical Association, 1968, 63, 1091-1131.

Hannan, M. T. The dynamics of ethnic boundaries in modern states. In J. Meyer and M. Hannan (Eds.), National develooment and the wor1d system. Chicago: University of Chicago Press. In press.

Hannan, M. T., £ Tuma, N. B. Methods of temporal analysis. Annual Review of Sociology, 5. In press.

Hanushek, E., £ Jackson, J. Statistical methods for social scientists. New York: Academic Press, 1975.

Hauser, R. M. A structural model of the mobility table. Social Forces> 1977, 56, 919-953.

Holt, J. D. Competing risk analyses with special reference to matched pair experiments. Biometrika, 1978, 65, 159-165.

Huntington, S. P. Political order in changing societies. New Haven: Yale University Press, 1968.

IBRDWT. International tiank ifi£ reconstruction aad development world tables (various years). Washington: D.C.: IBRO.

LaPalombara, J., £ Weiner, M. (Eds.) Political parties and poli tical develoomeni. Princeton: Princeton University Press, 1966.

Lipset, S. M. Political man. Garden City, New York: Doubleday, 1960.

Meyer, J. W., £ Hannan, M. T. (Eds.) National development and the worl d SV9*?m: educational, gconcn^ic and political change, 1950-1970. Chicago: University of Chicago Press. In press.

Meyer, J. W., £ Hannan, M. T. Issues for further comparative research. In J. W. Meyer and M. T. Hannan (Eds.), Nati onal develoPment and Sh£ Mprld system: educational, economic and pOlitical change, 1950-1970. Chicago: University of Chicago Press. In press.

Nerlove, M., £ Press, S. J. Univariate and multivariate log-linear and logistic models. Santa Monica, California: Rand Corp., 1973.

Nielsen, F. Linguistic conflict in Belgium: an ecological approach. Ph.D. dissertation, Stanford University, 1977.

Olson, M. Rapid growth as a destabilizing force. Journal of Economic History. 1963, 23, 529-558.

Olzak, S. M. An ecological-competitive model of the emergence of ethnicity: the French-Canadian example. Ph.O. dissertation, Stanford University, 1978.

Prentice, R. L., Kalfleisch, J. D., Peterson, A. V. Jr., Florour, N., Farewell, V. T., £ Breslow, N. E. The analysis of failure times in the presence of competing risk. Biometrics, 1978, 34, 541-554.

Rubinson, R. The world economy and the distribution of income within states: a cross-national study. American Sociological Review, 1976, 41, 638-659.

Sartori, G. Parties and party systems Vol. I. Cambridge: Cambridge University Press, 1976.

Singer, B. Individual histories as the focus of analysis in longitudinal surveys. Paper presented at the SSRC Conference on the National Longitudinal Surveys, Washington, D. C., 1977.

Singer, B., & Spilerman, S. The representation of social processes by Markov models. American Journal of Socio!ogy, 1976, 82, 1-54. (a)

Singer, B., £ Spilerman, S. Some methodological issues in the analysis of longitudinal surveys. Anna!s ?f Economic and Social Measurement, 1976, 5, 447-474. (b)

Skocpol, T. Mai lerstein's world capitalist system: a theoretical and historical critique. American Journal of Sociology, 1977, 82, 1075-1089.

Swanson, G. E. An organizational analysis of collectives. American Sociolog ical Review, 1971, 36, 607-623.

Taylor, C. L., £ Hudson, M. C. Morid handbook of poli tical and social indicators Vol. II. Inter-university Consortium for Political Research. Ann Arbor: University of Michigan Press, 1971.

Thomas, G. M., Ramirez, F. O., Meyer, J. W., £ Gobalet, J. G. Maintaining national boundaries in the world system: the rise of centralist regimes. In J. Meyer and M. Hannan (Eds.), national development and the world system. Chicago: University of Chicago Press. In press.

Tilly, C. (Ed.) Hi£ fprmqtion al ngtjpn states in western Europe. Princeton, New Jersey: Princeton University Press, 1975.

Tuma,' N. B. Rewards, resources, and the rate of mobility: a nonstationary-multivariate stochastic model. Ameri can Sociolog ical Review, 1976, 41, 338-360.

Tuma, N. B. Invoking RATE (2nd ed.). Menlo Park, California: SRI International, 1979.

Tuma, N. B., £ Hannan, M. T. Approaches to the censoring problem in event-history analysis. In K. Schuessler (Ed.), Sociological methodology, 1979. San Francisco: Jossey-Bass, 1978. Pp. 209-240.

Tuma, N. B., Hannan, M. T., £ Groeneveld, L. P. Dynamic analysis of event histories. American Journal Sociology, 1979, 84, 820-854.

UNDY. llni ted nati ons demographic yearbook (various years).

UNSY. Uni ted nations statistical yearbook (various years). Louvain, Belg ium.

UNYITS. Uni ted nations yearbook of international trade stati sties (various years).

Wallerstein, I. The decline of the party in single-party African states. In J. LaPalombara and M. Weiner (Eds.), Political parties and poli tical development. Princeton: Princeton University Press, 1966. Pp. 201-214.

Wallerstein, I. The modern nor1d system: capitalist agriculture and the prigin? fil 1M SurppgaP world economy 1q ihjg. sixteenth century. New York: Academic Press, 1974.

Table 1. Panel Observations on Political Form, 1950-1975.

	1975				
	No party (1)	Military (2)	One party (3)	Multiparty (4)	
No party (1)	1 (.50)	1 (.50)	0	0	2
Military (2)	0	1 (.33)	0	2 (.67)	3
One party (3)	0	1 (.12)	6 (.75)	1 (.12)	8
Multiparty (4)	0	9 (.23)	2 (.05)	28 (.72)	39
Colony (5)	1 (.03)	14 (.37)	15 (.39)	8 (.21)	38
		26	23	39	90

Table 2. Counts of Transitions.'

	Destination				
	No party (1)				
No party (1)	2 (.50)	1 (.25)	0	1 (.25)	4
Military (2)	0	22 (.48)	7 (.15)	17 (.37)	46
One party (3)	0	18 (.47)	19 (.50)	1 (.03)	38
Multiparty (4)	1 (.01)	31 (.39)	9 (.11)	39 (.49)	80
Colony (5)	1 (.03)	1 (.03)	16 (.42)	20 (.53)	38
		73	51	78	206

Counts on the main diagonal record observations that are censored, i.e., still in the state in 1975.

Table 3. Transition Sequences of Political Structures by Country

Sequence	Frequency	Countries
12		Afghanistan
141		Nepal
2424		El Salvador
24242		Peru
2434		Thailand
3		Mexico, Nicaragua, China, Taiwan, Spain
32		Portugal
323		Egypt
324		Dominican Republic
4	22	South Africa, Canada, Costa Rica, United States, India, Israel, Japan, Belgium, Denmark, Finland, France, West Germany, Ireland, Italy, Luxemborg, Netherlands, Norway Sweden, Switzerland, United Kingdom, Australia, Iceland
42	6	Panama, Brazil, Chile, Paraguay, Indonesia, Syria
423232	1	Bolivia
424	4	Columbia, Venezuela, Turkey, Greece
4242		Ecuador
42423	1	Burma
42424	1	Argentina
424242	1	Honduras
4242424	1	Guatemala
43	1	Phillipines
51	1	Kuwait
52	1	Botswana
53	8	Guinea, Ivory Coast, Kenya, Malawi, Rwanda, Rhodesia, Tanzania, Singapore
532	6	Algeria, Burundi, Central African Republic, Chad, Mali, Niger
53232	1	Upper Volta
5323232323	1	Benin (Dahomey)
54	8	Mauritius, Jamaica, Trinidad and Tobago, Guyana, Cyprus Malaysia, Malta, New Guinea
542	4	Zaire, Nigeria, Somalia, Togo
5423	1	Sierra Leone
543	5	Cameroon, Gabon, Gambia, Mauritania, Zambia
5432	_2	Congo (Brazzaville), Uganda
	90	

* Code: 1 《 No party; 2 - Military; 3 》 One party; 4 》 Multiparty; 5 《 Colony.

Table 4. Maximum Likelihood Estimates of Constant Transition Rates.

A. All Spells

	Destination State			
Origin State	No Party	Military	One Party	Multiparty
No party		.016	0	.033
Military	0			.071
			.028	
One party	0	.046		.002
Multiparty	.001	.033		
			.009	

B. First Spells Only

No party		.022	0	.002
Military	0		0	.077
One party	0	.034		0
Multiparty	0	.024	.009	

Table 5. Effects on Rates of Change in Political Form.

A. All Spells Analysis

	Maximum Likelihood	Partial Likelihood
Constant	-2.765*** (.6963)	
GUP/CAP	-.0023*** (.0006)	-.0021*** (.0007)
Population	-.0006* (.0003)	-.0006* (.0003)
Ethnic diversity	.9642** (.4727)	.8993* (.4792)
Region	a	
N	192	192

B. First Spells Analysis

Constant	-1.917*** (.3903)	
GNP/CAP	-.0030*** (.0008)	-.0031*** (.0008)
Population	-.0012* (.0007)	-.0011* (.0007)
Ethnic diversity	-.0672 (.5334)	-.2931 (.5548)
Region	b	b
N	90	90

Standard errors of estimates are shown in parentheses.

a: Region effects, Jointly significant at the .10 level, included in model,
b: Region effects, not jointly significant the the .10 level, not included in model.

* Significant at Che .10 level.
** Significant at the .05 level.
*** Significant at the .01 level.

Table 6. Effects on Movement from Specific Forms: All Spells.

A. Maximum Likelihood Estimates.

	Origin		
	Military	One Party	Multiparty
Constant	-1.159	-1.793**	-1.959***
	(1.518)	(.7278)	(.3904)
GNP/capita	-.0010	-.0053**	-.0030***
	(.0013)	(.0024)	(.0008)
Population	-.0004	-.0012	-.0013**
	(.0008)	(.0013)	(.0006)
Ethnic diversity	.9231	.1191	1.116**
	(.8993)	(.8506)	(.5249)
Region	a	b	b

Partial Likelihood Estimates.

	Origin		
	Military	One Party	Multiparty
GNP/capita	-.0002	-.0049**	-.0028***
	(.0008)	(.0025)	(.0008)
Population	-.0002	-.0010	-.0012**
	(.0008)	(.0012)	(.0006)
Ethnic diversity	.3143	-.2752	.9690*
	(.8271)	(.9663)	(.5529)
Region	c	b	b
N	55	34	88

Standard errors of estimates are shown in parentheses.

a! Region effects, jointly significant at the .10 level, included in model,
b: Region effects, not jointly significant at the .10 level, not included in model.
c: Model with region effects could not be estimated.

* Significant at the .10 level.
** Significant at the .05 level.
*** Significant at the .01 level.

Table 7. Effects on Movement from Specific Forms: First Spells Only.

A. Maximum Likelihood Estimates.

	Origin		
	Military	One Party	Multiparty
Constant	d	-1.929 (1.592)	-1.839*** (.4493)
GNP/capita	d	-.0040 (.0036)	-.0031*** (.0010)
Population	d	-.0036 (.0052)	-.0018 (.0009)
Ethnic diversity	d	-2.796*** (1.069)	.7989 (.6162)
Region	d	a	b

Partial Likelihood Estimates.

	Origin		
	Military	One Party	Multiparty
GNP/capita	d	-.0066** (.0032)	-.0033*** (.0010)
Population	d	-.0016 (.0028)	-.0016 (.0009)
Ethnic diversity	d	-2.102** (1.139)	.6225 (.6460)
Region	d	b	b
N	3	16	60

Standard errors of estimates are shown in parentheses.

a: Region effects, jointly significant at the .10 level, included in model,
b: Region effects, not jointly significant at the .10 level, not included in model.
d: Model could not be estimated due to small N.

* Significant at the .10 level.
** Significant the the .05 level.
*** Significant at the .01 level.

Table 8. Effects on Rates of Movement Into Forms: MLE.

A. All Spells.

	Destination		
	Military	One Party	Multiparty
Constant	-2.366*** (.3545)	-5.332*** (.9668)	-4.920*** (1.393)
GNP/capita	-.0027*** (.0007)	-.0026* (.0016)	-.0016 (.8885)
Population	-.0009* (.0005)	-.0021 (.0016)	-.0004 (.0005)
Ethnic diversity	-.0149 (.4887)	3.257*** (1.200)	1.659* (.9823)
Region	b	b	a

N - 182

B. First Spells Only.

	Destination		
	Military	One Party	Multiparty
Constant	-1.725*** (.4276)	-4.494*** (.6401)	-3.666*** (.3132)
GNP/capita	-.0036*** (.0010)	-.0011* (.0006)	.0002* (.0001)
Population	-.0011 (.0008)	-.0002 (.0003)	-.0001 (.0002)
Ethnic diversity	-.8696 (.6095)	2.023*** (.8504)	-.451? (.6041)
Region	b	b	b

N - 90

Standard errors of estimates are shown In parentheses.

a: Region effects, jointly significant at the .10 level, included in model.

b: Region effects, not jointly significant at the .10 level, not included in model.

* Significant at the .10 level.
** Significant at the .05 level.
*** Significant at the .01 level.

FIGURE L GNP EFFECT F0R ALL EVENTS

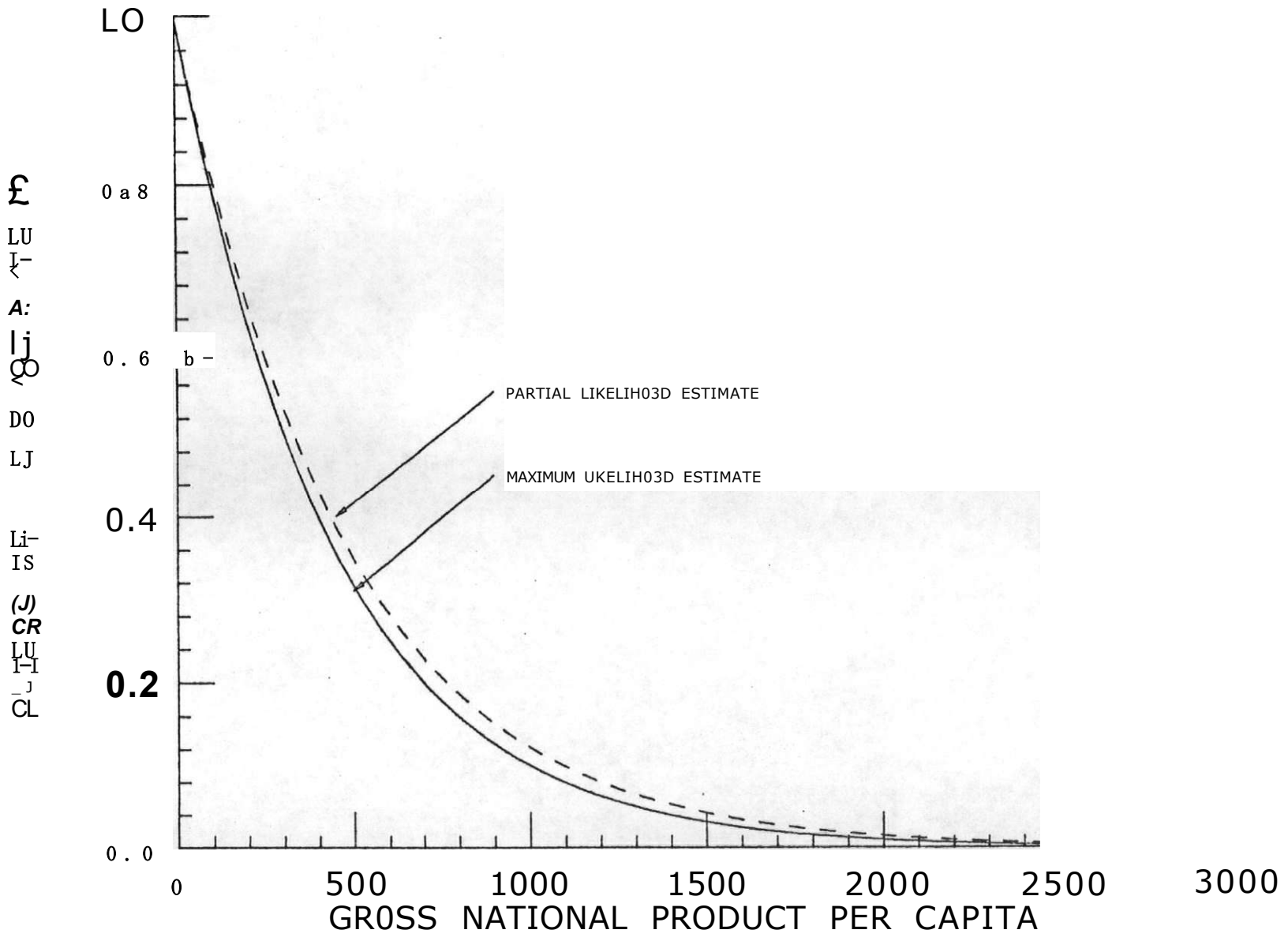
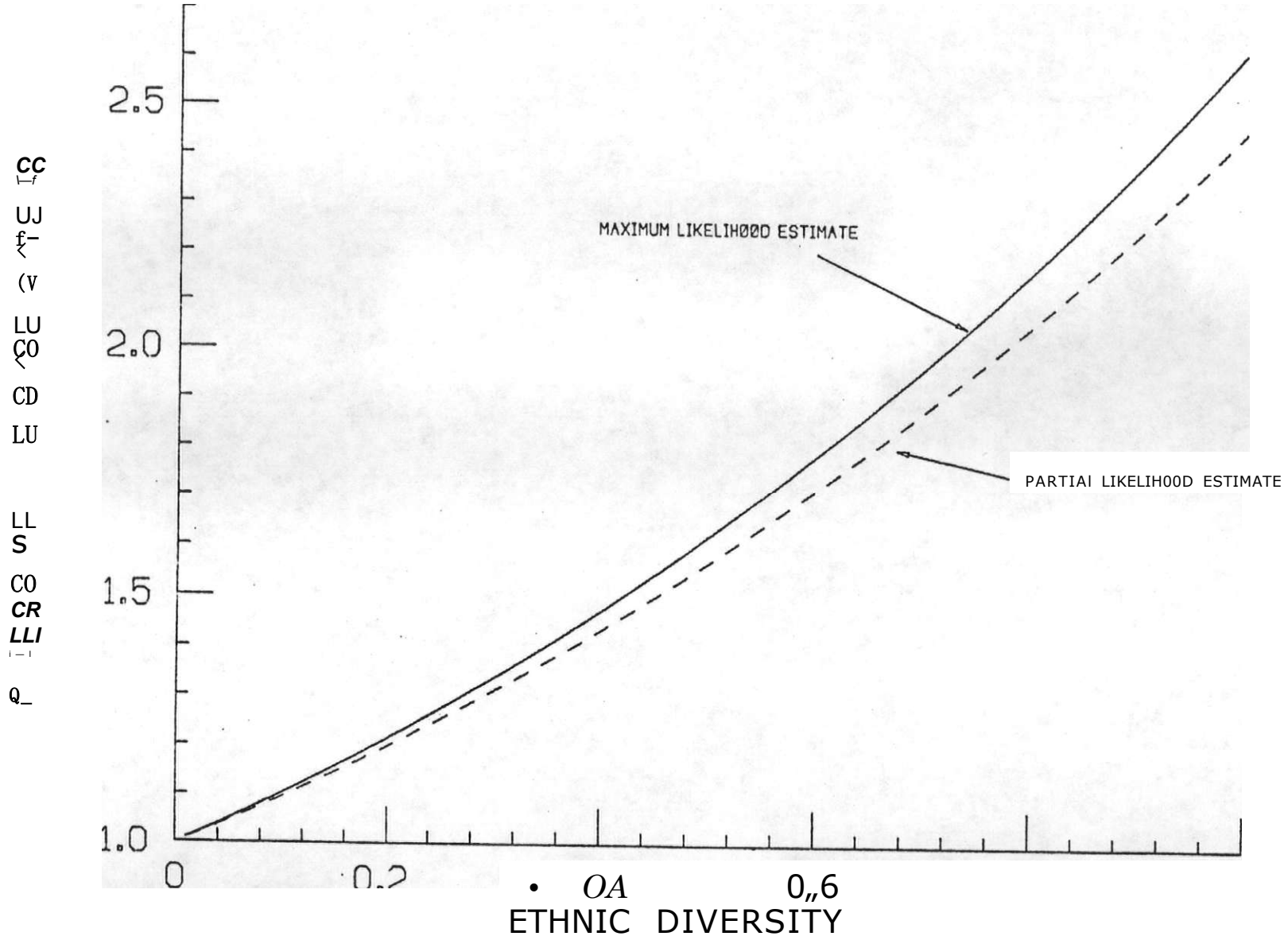


FIGURE 2. ETHNIC DIVERSITY EFFECT F0R ALL EVENTS



3 i v d 3 s v a 3 H i J 0 s a B i i d i i i n w

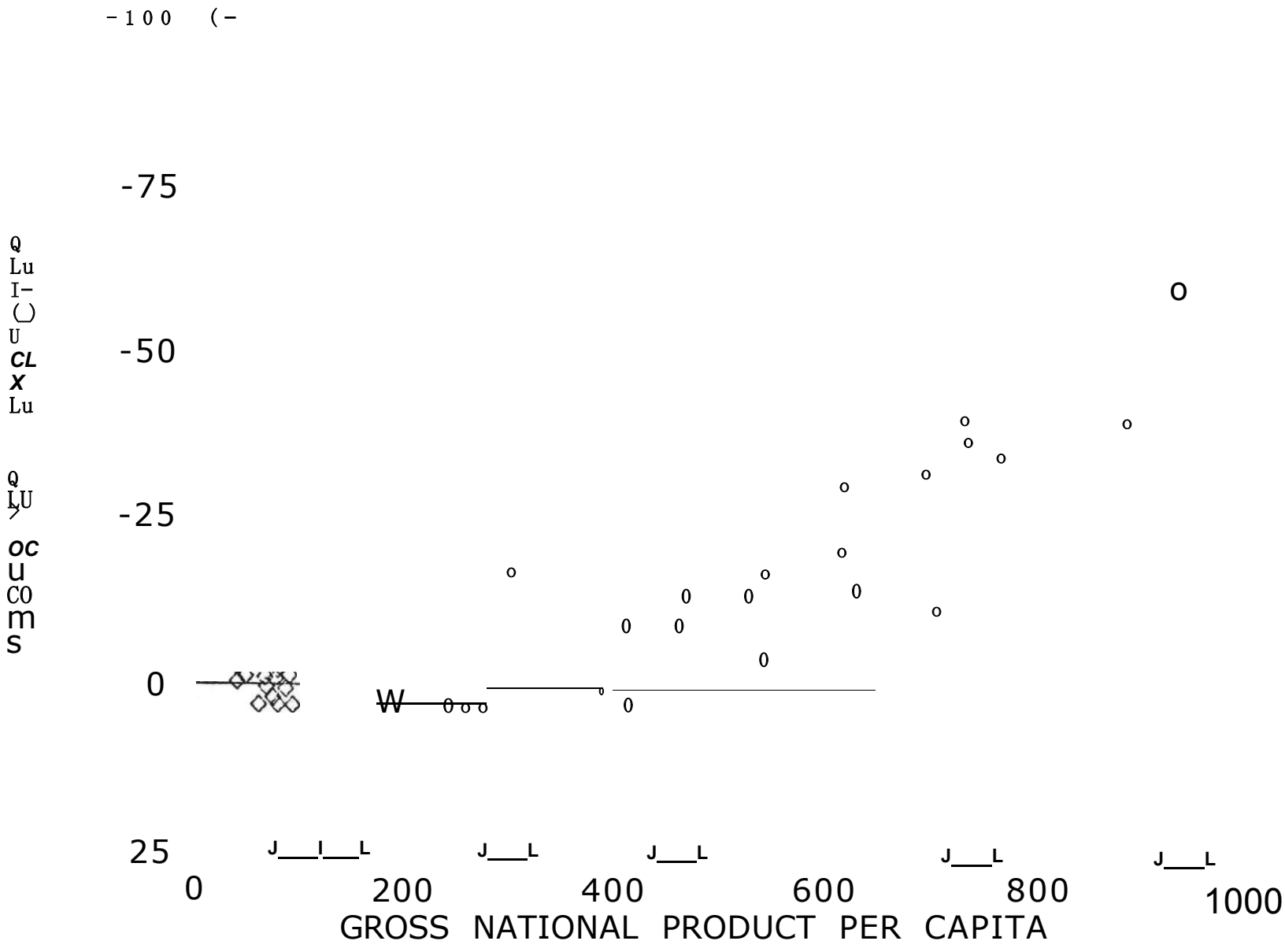
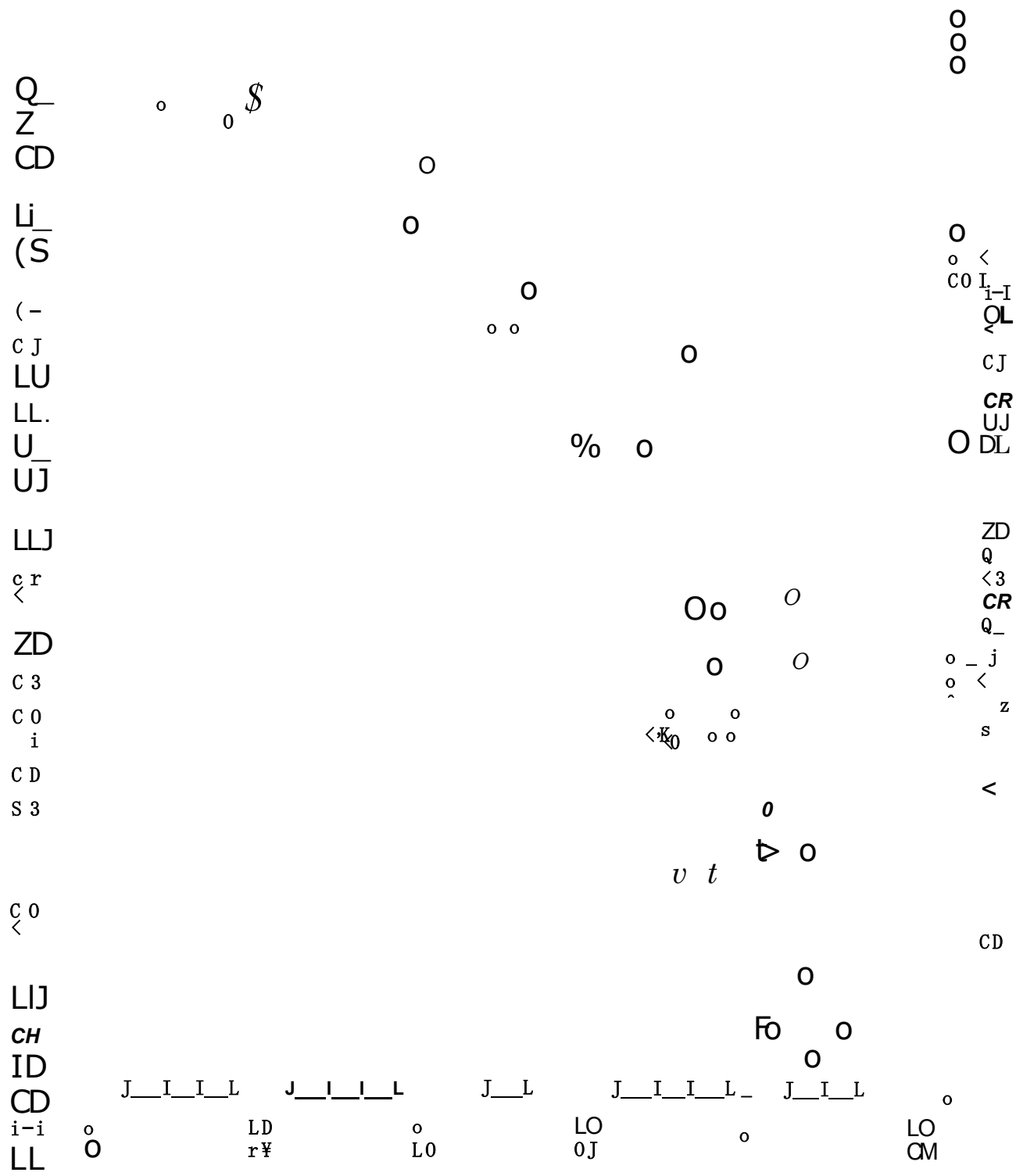



FIGURE A2n L0G-LINEAR EFFECT 0F GNP