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This report describes the development of long-range forecasting models for the Middle East, Latin America, and Africa. Volume 1, the Executive Summary, summarizes the work on all tasks in non-technical language. Volume II, Research Findings, describes the long-range forecasts and simulations and their implications for strategic policy and planning. Volume III, the Technical Appendix, describes in detail all phases of the study. These include the iden-tification of key concepts and their operational referents, the specification

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of forecasting equations, and the construction of the three region-specific
forecasting models.

Guidelines for generating forecasts and simulations are also presented in the
Technical Appendix to enable Department of Defense personnel to become better
acquainted with the approaches to generating meaningful, interesting, alternative
futures for comparing the strategic implications of contrasting developments.
Finally, the Appendix contains several annexes that identify the nations used
in the study, the years and sources of all data, the model parameters, the computer
forecasting program and data, the results of a standard forecast, and a sample
simulation.

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WASHINGTON, D.C. OFFICES

FINAL TECHNICAL REPORT

STOCHASTIC SIMULATIONS OF
LONG-RANGE FORECASTING MODELS

VOLUME III
Technical Appendix

October 31, 1975

Sponsored by:
Defense Advanced Research Projects Agency

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Army, Defense Advanced Research Projects Agency, or the U.S. Government.

This report describes the development of long-range forecasting models
for the Middle East, Latin America, and Africa. The research was sup-
ported by the Defense Advanced Research Projects Agency, Contract No.
MDA903-75-C-0179.

For the past three years CACI has been engaged in an effort to enhance
forecasting capabilities within the Department of Defense. In particular,
that effort has sought to apply social science research methodologies to
the problem of projecting important economic, political, military, and
social variables over a 5- to 20-year range. The forecasts produced so
far have been directed toward the Joint Long-Range Strategic Study (JLRSS),
prepared by JCS/J-5. During the first phase of this effort, CACI developed
a few very simple models to forecast key concepts (international conflict,
international alignment, and domestic stability) for 20 Indian Ocean coun-
tries and demonstrated the potential utility of combining substantive
expertise with quantitative methods. This combination was the basis for
later efforts. As a result of this study, a second phase was planned and
completed. A more complex model (12 interrelated equations rather than
the 3 independent equations developed the previous year) was constructed
for Europe to forecast five central environmental descriptors (international
conflict, international alignment, international trade, internal instability,
and national power base) over the long range.

The primary goal of the current project is to enhance long-range fore-
casting capability in the defense community by developing and introducing
new methodologies that add a simulation capability. A second, but no
less important, purpose is to provide the defense community with high
quality forecasting models for the Middle East, Latin America, and Africa
in support of the JLRSS. In this connection, JCS/J-5 has operational
current models for the Middle East, Latin America, and Africa that can be

used to generate alternative futures and to manipulate policy-sensitive variables. Changes in these variables can be considered representative of policy shifts by the United States and the Soviet Union.

The current innovations are designed to handle the highly volatile situations found in the developing world and to produce usable forecasts on the basis of the imperfect data available for these regions. The models include stochastic (probabilistic) elements to project events like irregular governmental transfers (coups) which are probabilistic by nature. The most important new element in the regional models is the simulation capability which will permit hypothetical policy choices by the United States and the Soviet Union to be evaluated in an experimental setting by giving the analyst the capability to examine the impact of alternative U.S. and Soviet behavior toward the Third World regions. Hence, the project provides JCS/J-5 with a specific forecasting capability tailored to the development of long-range estimates of strategic plans and requirements.

This final report is presented in three volumes. Volume 1, the Executive Summary, summarizes the work on all tasks in non-technical language. Volume II, Research Findings, describes the long-range forecasts and simulations and their implications for strategic policy and planning. Volume III, the Technical Appendix, describes in detail all phases of the study. These include the identification of key concepts and their operational referents, the specification of forecasting equations, and the construction of the three region-specific forecasting models.

Guidelines for generating forecasts and simulations are also presented in the Technical Appendix to enable Department of Defense personnel to become better acquainted with the approaches to generating meaningful, interesting, alternative futures for comparing the strategic implications of contrasting developments. Finally, the Appendix contains several annexes that identify the nations used in the study, the years and sources of all data, the model parameters, the computer forecasting program and data, the results of a standard forecast, and a simple simulation.

ACKNOWLEDGEMENTS

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CHAPTER 1. INTRODUCTION

This introductory chapter of the Technical Appendix to the final technical report for Contract MDA903-75-C-0179 describes the development of the forecasting models for the Middle East, Latin America, and Africa. It begins with a broad discussion of the approach, or methodology, that guided research decisions during the course of this nine-month effort. That approach has two complementary components: theoretical soundness and empirical verification. The second and third sections of this chapter detail the implementation of each of these components. This discussion, although technical at times, is designed to help analysts and other users of the models understand and utilize them to address specific policy questions.

GENERAL APPROACH AND METHODOLOGY

In this effort, three long-range forecasting models were developed for the Middle East, Latin America, and Africa to project the absolute and/or relative values of a series of important environmental variables over the 10- to 20-year time frame. The models were developed in support of the Joint Long-Range Strategic Study (JLRSS). Hence the variables were chosen to reflect the interests of JCS/J-5, the office responsible for preparing the JLRSS. In consultation with representatives of JCS/J-5, five broad concepts were selected as the focus of the models: national power base, international transactions, international alignment, international conflict, and internal instability. The models are designed to project the values of variables representing these five broad concepts for each nation in each of the three regions. The specific nations included within each region (listed in Annex I of this Appendix) were selected by representatives of the JCS/J-5 and the study team.

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The model development strategy assumed that two broad aspects of contemporary social science -- substantive theory and empirical verification -- can be brought to bear on developing capabilities for long-range environmental forecasting. Theory, as the term is used here, is a manageable abstraction and simplification of the innumerable potentially important aspects of an environment. Thus, it is an ordering schema that designates some aspects of an environment as "important" or "relevant" and suggests how they are interrelated. In this case, initial theoretical examinations consisted of reviews of substantive literature and discussions with area specialists which focused on the central concepts under consideration, or concepts similar to them, in the context of the three regions being studied. The review isolated a number of hypotheses about the causes of each concept, or, more specifically, the variables used to represent them. Of course, a much larger number of causal hypotheses than were actually examined exist in the literature. Much of the theoretical work consisted of selecting a coherent, manageable, and non-contradictory set.

Three basic criteria guided the process of identifying and isolating potentially useful hypotheses about the causes of the phenomena to be forecast. First, the study team sought to identify causal relationships in which both the "cause" and "effect" variables were included in the model. To project a variable by means of these relationships requires projecting the "causes" of that variable. If both the cause and effect variables can be included within the model, of course, reliance upon extraneous projections of the "causes" is minimized. By and large, the effort to bound the models in this manner was successful, even though some variables were not considered forecast variables, such as urbanization and literacy rates. These variables were required to make the model reasonably self-contained.

The second criterion is that some predictors represent policies under the control of major world powers, specifically the United States and the Soviet Union. This criterion is based upon the uses to which these models will be put, namely, to support the JLRSS, a long-range planning

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document. Planning is an attempt to exercise control over a future
environment. If planners are to be successful they must have some notion
about how they can affect that future environment. By explicitly includ-
ing variables that represent policies of the United States and the Soviet
Union, the models will be able to assess the impact of specific policy
options in advance. Since the models are not designed to forecast U.S.
and Soviet policy choices, these predictors are exogenous, or outside the
bounds of the models themselves, and their values must be set hypothetically
by the planner who is using the models to address specific policy questions.

The final criterion guiding the theoretical aspect of the effort concerns
the trade-off between consistency and inclusiveness. Any theory is an
ordering of variables and a specification of relationships among them.
Hence, the particular criterion embedded within any given theory governs
the ordering of variables, and the propensity to employ one theoretical
framework over another depends to a large extent upon the orientations
of the researchers and the users of the models. The restrictiveness of
any one theoretical orientation, then, can reduce the quantity and
quality of information used to forecast the variables. An effort was
made to include relationships from a broad body of extant theory; but the
relationships selected had to be consistent with one another. Multiple
sets of theory, then, tend to override restrictiveness. Where competing
theories were found, empirical analysis was used to select the one employed
in model development.

The result of this examination and selection process was a set of hypothe-
sized predictors for each of the variables representing the five broad
concepts -- the central environmental descriptors -- identified above.
The predictors were identical for all three regions but were assumed to
have different impacts in the different regions. Some predictors were
expected to have essentially no predictive power in some of the regions.

Empirical verification was used to assess the precise nature of the rela-
tionships between forecast variables -- representative of the central

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environmental descriptors -- and associated predictors in the context of each region and/or country.[1]

The specific form of empirical verification employed was regression analysis. The set of hypothesized predictive relationships for each forecast variable was subjected to multiple regression analysis. This identified that subset of predictors that was of particular value in the specific region/country under examination and provided a quantitative measure of the direction and strength of the relationship between the predictor variable and forecast variable. While the set of hypothesized relationships between forecast and predictor variables was the same for all three regions, considerable differences in the nature and/or strength of those relationships was found across regions. Moreover, some of the hypothesized relationships were non-existent for some regions as the coefficients for those relationships were different from zero.

Thus, a single theoretical model, shown in Table 1, served as the starting point for three regional models, differentiated by the estimated parameters representing the relationhips among the variables included within the theoretical model. (The parameters for each region are shown in the tables in Chapter 2 of this Technical Appendix.) Table 2 lists the variables included within the theoretical model. A few points will clarify Table 1. First, 28 equations are listed. Thirteen of these -- numbers 7, 8, 10, 13, 14, 16, 17, 18, 19, 22, 23, 26, and 28 -- are identities. That is, they only transform variables for intermediate calculations or transform calculated values to forecast variables and contain none of the estimated parameters. Equations 1 through 6 were estimated on a country-specific basis so that the parameters in Matrix B are generally different for each of the 65 nations included in this study. Matrix B is listed in Annex IV of this Technical Appendix, with 16 parameters shown for each country. B_1 through B_4 are on the first line for

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[1] Specifically, the variables representative of some aspects of economic power base -- gross domestic product, consumption, domestic government spending, investment, total exports, total imports, and population -- were generally examined empirically on a country-by-country basis while the remaining variables were empirically examined in a region-wide basis.

TABLE 1

MODEL STRUCTURE

1. $POP_t = \beta_1 * POP_{t-1}$

2. $CONS_t = \beta_2 + \beta_3 * GDP_t + \beta_4 * CONS_{t-1}$

3. $INV_t = \beta_5 + \beta_6 * (GDP_{t-1} - GDP_{t-2})$

4. $DOM_t = \beta_7 + \beta_8 * DOM_{t-1} + \beta_9 * GDP_{t-1} + \beta_{10} * POP_t$

5. $TIM_t = \beta_{11} + \beta_{12} * GDP_t + \beta_{13} * POP_t$

6. $TEX_t = \beta_{14} + \beta_{15} * GDP_t + \beta_{16} * POP_t$

7. $GDP_t = CONS_t + INV_t + DOM_t + DEFX_t + TEX_t - TIM_t$

8. $MILA_t = USM_t + SUM_t$

9. $\Delta DEFX_t = \alpha_1 + \alpha_2 * \Delta RIVDEX_{t-1}$

$$+ \alpha_3 \ (DEFX_{t-1}/GDP_{t-2}) + \alpha_4 * CONF_{t-1}$$

$$+ \alpha_5 \ (GDP_{t-1} - GDP_{t-1}) \ / \ (POP_{t-1} - POP_{t-2})$$

$$+ \alpha_6 * \left(\frac{\overset{5}{\underset{i=1}{\Sigma} MILA_{t-i}}}{5} \right) + \alpha_7 \ COOP_{t-1}$$

10. $DEFX_t = DEFX_{t-1} + \Delta DEFX_t$

11. $TRADEUS_t = (\alpha_7 + \alpha_{12}) + (\alpha_8 + \alpha_{13}) * GDP_t$

$$+ (\alpha_9 + \alpha_{14}) * POP_t + (\alpha_{10} + \alpha_{15}) * USGDP_t$$

$$+ (\alpha_{11} + \alpha_{16}) * VOT\Theta_{t-1}$$

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TABLE 1 (Con't.)

12. $TRADESU = (\alpha_{17} + \alpha_{55}) + (\alpha_{18} + \alpha_{56}) * GDP_t$

$$+ (\alpha_{52} + \alpha_{57}) * POP_t + (\alpha_{53} + \alpha_{58}) * SUGDP_t$$

$$+ (\alpha_{52} + \alpha_{59}) * VOT\Theta_{t-1}$$

13. $$TRADR_t = \sqrt{\left(\frac{TRADESU_t}{TRADESU_t + TRADEUS_t}\right)^2 + \left(\frac{TRADEUS_t}{TRADESU_t + TRADEUS_t}\right)^2}$$

14. $$TRAD\Theta_t = \left(\frac{TRADESU_t}{TRADESU_t + TRADEUS_t}\right) \Big/ TRADR_t$$

15. $\Delta MILM_t = \alpha_{19} + \alpha_{20} * CONF_{t-1} + \alpha_{21} * \Delta DEFX_t$

$$+ \alpha_{22} * \left(\frac{\sum\limits_{i=1}^{5} MILA_{t-i}}{5}\right)$$

16. $MILM_t = MILM_{t-1} + \Delta MILM_t$

17. $$ARMR_t = \sqrt{\left(\frac{SUT_t}{SUT_t + UST_t}\right)^2 + \left(\frac{UST_t}{SUT_t + UST_t}\right)^2}$$

18. $$ARM\Theta_t = \left(\frac{SUT_t}{SUT_t + UST_t}\right) \Big/ ARMR_t$$

19. $RELAID_t = (USA_t + USM_t) / (SUA_t + SUM_t + 1.0)$

20. $VOT\Theta_t = \alpha_{23} + \alpha_{24} * ARM\Theta_t + \alpha_{25} * GOVT_t$

$$+ \alpha_{26} * TRAD\Theta_t + \alpha_{27} * RELAID_t$$

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TABLE 1 (Con't.)

21. $VOTR_t = \alpha_{28} + \alpha_{29} * TRADR_t + \alpha_{30} * GOVT_t$

$$+ \alpha_{31} * \left[(GDP_t - GDP_t) / (POP_t - POP_{t-1}) \right]$$

$$+ \alpha_{34} * \left(\frac{\sum\limits_{i=1}^{5} MILA_{t-i}}{5} \right)$$

22. $ALIGNR_t = (TRADR_t + VOTR_t) / 2.0$

23. $ALINS_t = \left| TRAD\theta_t - VOT\theta_t \right|$

24. $TMI_t = \alpha_{35} + \alpha_{36} * TML_{t-1}$

$$+ \alpha_{37} \left(\frac{\sum\limits_{i=1}^{5} COUP_{t-i}}{5} \right) + \alpha_{38} * STRAIN_t$$

$$+ \alpha_{39} * MILM_t + \alpha_{40} * (DEFX_t / GDP_t)$$

$$+ \alpha_{41} * \left(\frac{\sum\limits_{i=1}^{5} MILA_{t-i}}{5} \right)$$

25. $COUP_t = \alpha_{42} + \alpha_{43} * \left(\frac{\sum\limits_{i=1}^{5} COUP_{t-1}}{5} \right) + \alpha_{44} * TML_t$

$$+ \alpha_{45} * \left(\frac{\sum\limits_{i=1}^{5} MILA_{t-i}}{5} \right) + \alpha_{46} * \left(\frac{GDP_t - GDP_{t-4}}{POP_t - POP_{t-4}} \right)$$

26. $COOP_t = USC_t + SUC_t$

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TABLE 1 (Con't.)

27. $\text{CONF}_t = \alpha_{47} + \alpha_{48} * \text{CONF}_{t-1} + \alpha_{49} * \Delta\text{DEFX}_t$
    $+ \alpha_{50} * (\text{DEFX}_t/\text{GDP}_t) + \alpha_{51} * \text{COOP}_t$

28. $\text{TR}_t = (\text{DEFX}_t/\overline{\text{DEFX}}_t) * 100.0$

TABLE 2

MODEL VARIABLES

Variable Name	Variable
ALINS	Alignment Instability
ALIGNR	Average Alignment Intensity
ARMO	Arms Alignment Direction
ARMR	Arms Alignment Intensity
CONF	International Conflict
CONS	Consumption Expenditures
COOP	Cooperative Behavior from U.S. and USSR
COUP	Propensity for Coups
DEFX	Defense Expenditures
DOM	Domestic Government Expenditures
ΔDEFX	Yearly Change in Defense Expenditures
ΔMILM	Yearly Change in Military Manpower Levels
ΔRIVDEX	Yearly Change in Rival's Defense Expenditures
GDP	Gross Domestic Product
GOVT	Government Type
INV	Investment Expenditures
MILA	Military Aid from U.S. and USSR
MILM	Military Manpower Levels
POP	Population
RELAID	Aid from U.S. Relative to Aid from USSR
RIVDEX	Rival's Defense Expenditures
STRAIN	Domestic Strain
SUA	Economic Aid from USSR
SUT	Arms Purchases from USSR
SUM	Military Aid from USSR
SUC	Cooperative Behavior from USSR
SUGDP	USSR Gross Domestic Product
TML	Turmoil Behavior
TR	Tension Ratio
TEX	Total Exports
TIM	Total Imports
TRADO	Trade Alignment Direction
TRADR	Trade Alignment Intensity
TRADEUS	Trade with U.S.
TRADESU	Trade with USSR
USA	Economic Aid from U.S.
UST	Arms Purchases from U.S.
USM	Military Aid from U.S.
USC	Cooperative Behavior from U.S.
USGDP	U.S. Gross Domestic Product
VOTO	Voting Alignment Direction
VOTR	Voting Alignment Intensity

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each country; B_5 through B_8 are on the second line; B_9 through B_{12} on the third line; while B_{13} through B_{16} are on the fourth line of the set of parameters for each country. The remainder of the equations -- numbers 9, 11, 12, 15, 20, 21, 24, 25, and 27 -- were estimated on a region-specific basis and the parameters for these equations are found in Matrix A. In Matrix A, also shown in Annex IV, there are three columns for each of the parameters shown in the equations in Table 1. The first of these columns contains the parameters for the Latin American nations; the second, for the nations of the Middle East; and the third, for the African countries. The equations follow standard FORTRAN IV priorities: exponentiation is performed first, followed by multiplication and division, and then addition and subtraction.

The equations contained in Table 1 consist of three blocs. Bloc 1 -- which includes the equations for POP (1), INV (3), DEFX (9 and 10), and DOM (4) -- is completely recursive and was therefore estimated via ordinary least squares (OLS) techniques. That is, Bloc 1 variables are functions of previous values of other forecast variables and exogenous predictors only. Bloc 2 -- which includes GDP (7), CONS (2), TEX (6), and TIM (5) -- is non-recursive and over-identified. That is, variables in Bloc 2 are functions not only of lagged values of forecast variables and exogenous predictors, but also present values of forecast variables in both Blocs 1 and 2. Further, no one-to-one relationships between the structural coefficients of the models and reduced-form parameters existed. The use of present values of the forecast variables as predictors meant that one of the assumptions of classical regression models -- that there be no error in the independent variables -- was violated. Overidentification means that a reduced form could not be estimated to circumvent this violation of classical regression assumptions. (See Wannacott and Wannacott 1970: 149-190, 343-356, and 383-400 for a thorough discussion of these types of estimation problems and appropriate solutions.) To circumvent the effects of these combined difficulties, Bloc 2 structural coefficients were estimated via two-stage least squares techniques (2SLS) and were then combined linearly for a direct solution of GDP in the computer forecasting

models.[2] Bloc 3 contained the remainder of the equations in the models.
Since these equations did not have any present values of Bloc 3 forecast
variables as predictors, they were estimated via OLS techniques. Thus,
Bloc 3 equations contain, as predictors, lagged values of the forecast
variables, exogenous variables, and present values of forecast variables
found in Blocs 1 and 2. In the computer forecasting models, the equations
in Bloc 3 are merely solved in sequence because no direct feedback exists
within Bloc 3 or from Bloc 3 to Blocs 1 or 2.

The three blocs contained in the forecasting models are recursive with
respect to one another. No present values of Bloc 2 or Bloc 3 variables
are used as predictors in Bloc 1 and no present values of Bloc 3 vari-
ables are used as predictors in either Bloc 1 or Bloc 2. Strictly speak-
ing, all of the equations in the models ought to have been estimated via
2SLS or other generalized least squares techniques. However, this proce-
dure would have entailed substantially higher estimation and model develop-
ment costs and, given resource limitations for the project as a whole and
the theoretically satisfactory results from the simpler procedure, the
particular trade-offs chosen were viewed as reasonable.

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[2] Technically, lagged values of the forecast variables also contain error
components. Thus, strict adherence to convention would have meant also
estimating equations contained in Blocs 1 and 3 via 2SLS techniques. The
effect of such an approach would have been to increase the complexity of
the computer model manyfold to the point where its usability would have
been severely limited. Moreover, both the 2SLS estimating technique and
the process of combining parameters in a direct-form solution for the
computer model (or the alternative solution by iteration) place exten-
sive demands upon the exogenous variables in the system and upon the
structure of the model. The tolerance for error in the exogenous vari-
ables and for misspecification of the model structure, then, is quite
low. While these considerations present a minimal problem in the economic
sector of the models, they are more serious in the political equations,
for which theory is less developed and data more sparse and error-prone.
Given cost and these other considerations, it was felt that the more
limited solution to the problem of removing error from the predictor vari-
ables -- estimating only Bloc 2 via 2SLS -- was an appropriate trade-off.

Finally, some modifications were made to the OLS and 2SLS coefficients
in the development of the computer forecasting model. Some modifications
were required because of difficulties encountered in interfacing the
country-specific equations in the economic sector of the models (Equations
1 through 7) with the remaining equations, which were estimated on a
region-specific basis. Other modifications were necessary because of the
particular strategies employed to circumvent problems arising from missing
data. More detail on the nature of these difficulties, the approaches
used to surmount them, and the effects of these approaches on the inter-
pretability of the resulting forecasts is presented in the third section
of this chapter. Before turning to that issue, however, the next section
reviews the specific substantive theories underlying these models.

SUBSTANTIVE BASIS OF THE MODELS

The forecasting models developed for the Latin American, Middle Eastern,
and African regions are designed to forecast variables representative
of five broad concepts relevant to JCS/J-5 planning requirements: national
power base, international transactions, international alignment, internal
instability, and international conflict. These are, of course, essentially
the same concepts as examined in the European study (CACI, 1974). Two
of the tasks in the statement of work for this effort (Tasks 1 and 2 of
Contract No. MDA903-75-C-0179) require a reconsideration of the variables
that represent those concepts and a reanalysis of the linkages among those
representative variables, or operational referents of the concepts.

In the course of completing the work called for in these two tasks, all
five concepts, cr central environmental descriptors, have been substan-
tially enriched. Generally speaking, this enrichment has taken two
distinct, though interrelated, forms. First, since the nations in these
Third World regions are undergoing processes of economic, political, and
social change that are complex and dissimilar across regions, and sometimes
across countries, the number of operational referents, or representative
variables, for each concept has been increased. Rather than simply assessing

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economic power on the basis of gross domestic product (GDP), for example, the various components of GDP, such as consumption expenditures, investment expenditures, domestic government expenditures, exports, and imports are forecast separately. This greater complexity is required by the dissimilarity among the nations of these regions in the manner in which total production is allocated within the economy. Since the distribution of expenditures across components of GDP can have substantial effects on the development processes in these Third World nations, the greater complexity of this aspect of the forecasting models captures better the complexity of political and economic developments. Essentially, the same can be said for the other central environmental descriptors included in the model. More aspects, or dimensions, of alignment, for example, are included in that concept to account for phenomena that are substantially more important in the Third World than they are in developed regions of the world, such as arms flows and economic and military aid from major powers. Similarly, the internal instability concept has been enriched to capture a form of anti-regime behavior more significant in Third World nations than in developed countries: elite anti-regime behavior, or coups d'etat.

Second, by breaking out the components of the five central environmental descriptors more explicitly, it is possible to base the model on more theoretically sound causal relationships among the variables representing those descriptors. For example, the linkages among the various components of gross domestic product in each of the 65 countries have been investigated, rather than simply relying upon the serial correlation (over time autocorrelation) in GDP itself as a surrogate for these complex and, as found in the empirical analysis, dissimilar relationships among the components of GDP. This second aspect of model enrichment has resulted in the more theoretically based, sensitive, and useful forecasting models required to capture realistically the complexity of differing configurations of development found in the three regions under study.

This broad overview serves as an introduction to the specific theoretical bases by which the various components of these forecasting models

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have been developed. The theoretical equations which were then sub-
jected to empirical verification were shown in the previous section of
this chapter. Here, we explain in substantive terms why each of the
components, or predictors, was included in the equations, dealing in turn
with the forecast variables representative of each of the central environ-
mental descriptors.

National Power Base

Three aspects of national power base are treated explicitly in these
forecasting models: resource power base, economi power base, and mili-
tary power base. Each of these three aspects is considered in turn.

Resource Power Base, or the possession of natural resources, has only
recently become a source of power capabilities, at least in the context
of Third World countries. This refers to the considerable enhancement of
power of members of the oil-exporting community. The successes of this
small group of nations notwithstanding, the majority of Third World
nations are incapable of converting their natural resources into the
hardware of power because they lack the required economic and political
infrastructure. Their primary natural resource, but one whose contribu-
tion to power capability is of a mixed nature, is people. Population
can be advantageous to a nation in terms of numbers; but it can also be
a detriment when food, shelter, and other basic subsistence requirements
drain a large proportion of the nation's total productivity.

Regardless of a nation's level of economic development, some minimum
population is required if the nation is to exploit its natural resources
effectively and employ high-energy production techniques (Aron, 1966:
229). A large population also provides the necessary domestic market for
industry (Organski, 1958: 141). In short, without a colonial empire
no nation can become or remain a significant world or regional power with-
out the population necessary to establish and maintain an industrial base,
field combat units, and feed and equip the soldiers and citizenry

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(Morgenthau, 1973: 119). Moreover, forecasts of population provide a means of meaningfully comparing forecasts of other variables for nations of greatly differing sizes. Forecasts of gross domestic product (GDP), for example, cannot be used to infer relative levels of economic development for countries very different in population. Per capita forecasts, which require an estimate of future population, reduce much of this comparability problem.

The approach used for forecasting population is to apply estimated population growth rates from the U.N. Statistical Yearbook to past populations for each iteration of the model (see Equation 1). Population growth rates are not attenuated by per capita income (GDP/POP) so that there is an assumption of constant growth in population throughout the forecast period. While almost all population experts agree that present population growth rates are too high to be maintained indefinitely (Freedman and Berelson, 1974; Coale, 1974; and Revelle, 1974), it is extremely difficult to predict when leveling off will occur or the extent to which growth will be diminished. Since the primary purpose of the population forecasts is to provide comparability to forecasts of gross domestic product (GDP), domestic government spending (DOM), and the like, and since there is no a priori reason to expect significantly different decreases in population growth across the nations included in this study, the use of these constant population growth rates is likely to lead to very little distortion in the resulting forecasts.

Economic Power Base, as mentioned above, has been considerably enriched in the development of these forecasting models. The basic variable representative of economic power base is gross domestic product (GDP). But in order to successfully forecast GDP for countries with complex and disparate patterns of development, it was necessary to construct a set of equations that describe economic patterns within each country. Eight major variables -- gross domestic product (GDP), population (POP), defense expenditures (DEFX), domestic (non-defense) government expenditures (DOM), investment expenditures (INV), consumption expenditures (CONS), total

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exports (TEX), and total imports (TIM) -- are used to represent the economic sector of each country. The economic model is developed from Keynesian income-expenditures analysis. By definition, income equals production in each period and spending, appropriately defined, also equals production. Total production, or total expenditures, is gross domestic product (GDP). The problem in specifying this economic model is to identify the components of spending and to develop equations for forecasting each of these components so that forecasts of GDP can be generated.

Three basic types of expenditures are identified: (1) private spending, (2) government spending, and (3) foreign sector spending. Each of these, in turn, is divided into components so that the different combinations of variables that influence each component of spending can be more accurately identified and the nature and strength of these influences more precisely estimated. Private spending, for example, is divided into consumption expenditures and investment expenditures, the latter including spending on plants and equipment (capital goods) as well as spending on inventory accumulation. The equations for predicting consumption and investment expenditures are shown in Table 1 (Equations 2 and 3 respectively). The basic influence on consumption (Equation 2) is disposable income. GDP is used as a proxy measure for the "true" value of disposable income. This is the normal practice when this model is applied to less developed countries for which direct data on disposable income are generally unavailable. Previous values of consumption are included as a predictor in order to capture an adjustment effect since large increases or decreases in disposable income are often not translated immediately into proportional changes in consumption expenditures. The investment equation (Equation 3) is based upon the assumption that plants are constructed and equipment purchased against expectations that additional production can be sold. The problem is that the model must forecast investment spending before the value of total sales in the economy is known. The assumption employed to resolve this difficulty is quite simple and generally accepted: the pattern of expected future sales is based on past patterns so that investment is predicted as a function of changes in the proxy variable for disposable income -- GDP.

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Government spending, likewise, is divided into two components -- domestic non-defense government spending (DOM) and defense expenditures (DEFX) -- and predicted by Equations 4, 9, and 10 in Table 1. Defense expenditures are assumed to be influenced by political as well as economic factors and are "exogenous" from the other economic variables in the sense that, while they do influence current economic conditions, they are not determined by current economic conditions. The equations for predicting defense spending (Equations 9 and 10) are discussed in greater detail in the section below on military power base.

Non-defense government spending (Equation 4) is predicted by previous values of non-defense government spending and GDP and the present value of population. The previous level of non-defense government spending is included in the equation to capture the inertia that typically characterizes government economic policy and behavior. The lagged value of GDP is included to capture the influence of total wealth of the nation on government activity. It is generally true that increases in income for a country are associated with more than proportional increases in government spending. The population variable captures two quite distinct influences, the tendency for a larger population to require increased governmental spending for such services as education, public facilities, and social services, and the tendency for per capita wealth to decline, or grow more slowly, in a country with a rapidly growing population. The particular mix of influences captured by the population predictor is likely to vary from one country to another.[3]

Finally, foreign sector spending is represented by two equations in the model, one for export sales, or spending from other countries (Equation 6),

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[3] This treatment of government expenditures is very different from those found in conventional public expenditures economics, which typically views government spending from the standpoint of decision-makers and optimization theory. These conventional viewpoints are of limited value for long-range forecasting since it is difficult to project decision-makers' preferences and the constraints under which they must operate. See Millward (1971).

and another for imports, or spending going to other countries (Equation 5). Although these two equations take an identical form, the interpretations given to the predictor variables included within them, or theoretical justifications for those predictor variables, differ considerably. The interpretation of the import equation (Equation 5) is quite similar to that of the consumption equation (Equation 2). GDP influences imports as a proxy measure of disposable income and the nation's endowments of resources. When controlled for population, it also provides an approximate measures of the level of technology within the country. In the export equation (Equation 6) GDP serves as a measure of the total available production for export while population serves as a surrogate for the size of the domestic market. The larger the domestic market the greater the proportion of total production that tends to be consumed internally.

The basic variable representative of economic power base -- GDP is calculated as the sum of all types of spending, or production, within the economy according to Equation 7 (Table 1). Imports are subtracted from that sum because they do not generate production within the nation but rather production within other countries.

The final aspect of nations' power capabilities included within these models, Military Power Base, is represented by two operational variables: defense expenditures (DEFX) and military manpower levels (MILM). As a measure of actual military power, these variables are open to several criticisms. In particular, they are not exhaustive, they put too much emphasis on quantity as opposed to quality, and they ignore the efficiency and intensity of use of available military resources. On the other hand, there are a number of good reasons for using expenditures and manpower levels as measures of military capability, particularly in a long-range forecasting model. First, the more ephemeral aspects of military capability, such as the quality of the defense establishment and the efficiency and intensity of use of military resources, are difficult to measure directly

and forecast with credibility over the long range. Since spending can enhance the quality of a nation's armed forces as well as their size, defense expenditures do not represent only the quantitative aspects of military capabilities. This not to say that levels of skill, technology, and organizational/administrative capabilities do not act as constraints on military capability. Rather, in the long run, basic economic and resource variables are the major constraints on a nation's capacity for projecting military force. As a result, defense spending tends to be highly correlated with other indicators of military capability when size of nation is roughly controlled (Abolfathi, 1975). Finally, defense spending relative to the size of armed forces serves as an adequate indicator of the quality of military capability for long-range forecasts, although short-term forecasting would require more sensitive indicators.

The theoretical forecasting equations for defense expenditures (Equations 9 and 10) and military manpower levels (Equations 15 and 16) are shown in Table 1. In both cases the equations predict changes in expenditures and manpower levels in order to capture the dynamics of linkages between the domestic and international political conditions a nation faces and its response in terms of enhancing or reducing military capability. Annual changes in defense spending are predicted by annual changes in the defense spending of a major rival, the previous proportion of GDP devoted to the military establishment, previous levels of conflict, annual changes in per capita wealth, and average levels of miliary aid received from the two superpowers (the United States and the Soviet Union) during the previous five years. In other words, an increase (or decrease) in military expenditures is assumed to result from an increase (or decrease) in wealth, involvement in arms races, conflict, and military aid. Defense spending relative to GDP is also assumed to have some upper bound.

The relationship between conflict and defense spending seems obvious. There are numerous anecdotal references to conflict events leading to increased rates of defense spending, conscription, mobilization, and the like. The relationship between conflict and military expenditures has

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also been subjected to a good deal of empirical examination (see, for example, Richardson, 1960; Newcombe, 1975; and Abolfathi and Park, 1975). Similarly, the notion of rivalries (arms races) influencing defense spending tends to be supported in both casual and systematic literature, the classic formulation being found in Richardson (1960). "Rival" nations, for the purposes of these models, were selected on the basis of historical rivalries, border and territorial disputes, and other major forms of conflicts of interest.

Changes in income levels are assumed to lead to changes in defense spending since increases (or decreases) in income levels increase (or decrease) the total resource "pie" from which military and other expenditures can be drawn. The inclusion of military aid as a predictor of defense spending is based on the following argument: Nation A receives military aid, in the form of hardware, from one of the superpowers. Nation A then must provide complementary and supporting armaments, training in the use of the supplied hardware, and maintenance and spare parts for the supplied hardware. Finally, it is assumed that there is some upper limit on the proportion of total resources that a nation can devote to the military establishment, represented in this equation by the ratio of defense expenditures to GDP.

The equations for military manpower levels (Equations 15 and 16) predict the annual change in the number of regular armed forces personnel on the basis of changes in defense spending, past levels of conflict, and military aid from the superpowers. It is assumed that, as with defense spending, conflict increases the requirements for military manpower levels, and therefore high conflict levels will be accompanied by relatively large increases in military forces. It is also assumed that military aid affects manpower levels much like its effect on defense spending -- that the provision of military hardware by the superpowers will require the recipient country to provide additional personnel to operate that hardware.

Finally, annual changes in defense spending are included in the military manpower equation to capture the effect of force modernization. It is assumed that, to some extent at least, nations can substitute equipment with greater firepower for additional manpower to achieve a given capability for projecting force. The inclusion of this latter variable may switch the sign of the parameter for military aid in one or more region. That is, the particular portion of variance in annual changes in manpower levels accounted for by changes in defense spending as opposed to military aid could make the aid parameter negative and the spending parameter positive since aid and spending are themselves causally related.

There are, then, three basic components of national power base. Each of these is, in turn, divided into a number of sub-components that are systematically related via hypothesized causal mechanisms to produce a theoretically grounded and sensitive model for projecting national power base over the long term. The various operational referents of national power base, in turn, constitute some of the more powerful predictors of variables representing the other four central environmental descriptors included in the models.

International Transactions

Our description of economic power base was confined to the equations required to estimate GDP for each nation included in this study. The equations for imports and exports (Equations 5 and 6 respectively) discussed in that section forecast the total trade flows into and from a nation, and imports and exports together, relative to GDP, can be used as a measure of the extent to which a nation's economy is interrelated to the economies of other countries. Forecasts of imports and exports relative to GDP, therefore, can be used to assess the extent to which international transactions are expected to be a significant aspect of a nation's economy over the long range.

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The total import and export variables do not, however, indicate a nation's trading partners. It was initially hoped that forecasting equations could be developed to predict trade flows between each of the 4160 dyads included in this study and between each of the 65 countries included in the three regions and the United States and the Soviet Union. Time and resource constraints, however, prohibited pursuit of the first of these objectives. Forecasting equations were developed and estimated to project trade with the United States and the Soviet Union (Equations 11 and 12 respectively). These equations are conceptually similar to the total import and export equations discussed above. For the importer, GDP represents the income level available to finance purchases while for the exporter, GDP represents the level of production available for sale on international markets. Population, as in the total exports equation (Equation 6), captures the influence of the size of the nation's market. Finally, previous direction of voting alignment -- VOTO -- is included to measure resistance to trade stemming from political considerations, and acts much the same way as the commonly used distance variable. In the actual estimation process, separate equations were estimated for exports to and imports from the United States and exports to and imports from the Soviet Union for each of the three regions. For each region, then, four equations were estimated so that the combination of these four into Equations 11 and 12 in Table 1 is for presentation purposes only. In addition, logarithmic transformations were applied to each of the variables before estimation. In combination, these deviations from equations 11 and 12, as shown in Table 1, produced both more detailed and more accurate forecasting equations for trade with the United States and the Soviet Union.

International Alignment

For this project, alignment has been conceptualized to consist of several components that reflect the degree to which a nation is aligned with one or both of the two superpowers, the United States and the Soviet Union. The attributes and behavior of the Latin American, Middle Eastern, and

African nations are used to predict their alignment behavior vis-a-vis these two superpowers. Alignment was conceptualized as having three dimensions of particular importance when examining Third World countries: trade alignment, arms alignment, and U.N. voting alignment. Given the capability to forecast trade with each of the two superpowers, Equations 13 and 14 are used to transform those values into forecasts of trade alignment direction -- TRADΘ -- and trade alignment intensity -- TRADR (see Table 1). Thus, the trade alignment variables are simply transformations of two of the measures forecast for the international transactions descriptor.

A second component of international alignment thought to be of particular relevance to these Third World regions is arms alignment. Analyses of arms flows between the nations of these regions and the two superpowers, conducted during the estimation and empirical verification analyses for the arms alignment variables, however, suggested that arms transfers are probably the most unstable indicator of alignment with major powers, at least for Third World nations. First, patterns of arms transfers are influenced at least as much by policies of supplier nations as they are by policies of recipients, particularly when restrictions are placed on arms transfers in terms of types of weapons to be sold and/or uses to which the weapons may be put. Second, during the 1960's many new buyers, particularly among the African nations, entered the arms market. Other buyers, especially in the Middle East, substantially altered their procurement activities, both in terms of the quantity of weapons procured and the types of weapons obtained. Partly as a result of these phenomena, past patterns of economic and military assistance and non-arms trade among these two groups of buyers and the two primary suppliers, the United States and the Soviet Union, were weak and inadequate predictors of arms transfers. Third, during the 1960's new arms suppliers, mostly Western European countries, entered the arms market and generated extensive economic and political competition with the established sellers, the United States and the Soviet Union. This, too, disrupted traditional relationships among arms transfers, non-arms trade,

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and economic and military assistance. Finally, additional nations, probably non-European, may become arms suppliers in the future. Israel, Argentina, Brazil, and India already have fledgling arms industries, and other countries, particularly Organization of Petroleum Exporting Countries, are either developing of planning to develop some arms production capacity. Experience has shown that only through exports can production runs be long enough to balance sunken R&D costs, and that this requirement becomes more severe when the procurement capacity of the supplier nations is relatively low. Thus, it is likely that there will be further disruptions to the relationships among arms transfers, trade, and aid which would reduce the validity and usefulness of any parameters estimated from data from the 1960's.

Nonetheless, it is equally clear that arms transfers play an important role in many of the processes of interest to JCS/J-5, especially patterns of conflict among nations that are clients of the superpowers, and trade and diplomatic alignments of Third World nations with those superpowers. In order to capture these effects and to permit an examination of alternative policies by the United States and the Soviet Union regarding credits and terms for and restrictions upon arms transfers to the Third World, U.S. and Soviet arms transfers will be treated as exogenous and manipulable variables in the forecasting models. Thus, user-induced changes can be examined to determine the effects of alternative arms supply policies for multiple world futures.

The raw indicators used to construct the arms alignment measures are total arms purchases from the United States (UST) and total arms purchases from the Soviet Union (SUT). These raw indicators are transformed into measures of arms alignment intensity -- ARMR -- and arms alignment direction -- ARMθ -- according to Equations 17 and 18 respectively (see Table 1). One word of caution regarding the interpretation of ARMR should be made at this point. Since the ability to purchase weaponry depends, to some extent, on a nation's level of wealth, this measure is biased by correlation with GDP and per capita GDP. ARMR, normed by standardized values

of GDP or GDP/POP, might be better suited for inferences about a nation's tendency to align with the two superpowers on the arms dimension.

A third component of international alignment included in the present study taps a more purely political aspect of alignment, U.N. voting patterns. U.N. voting represents a behavior that entails the least amount of commitment vis-a-vis the United States and the Soviet Union. Voting shifts, unlike arms and trade alignment shifts, do not involve high potential costs to the nation. Yet this indicator is useful in complementing the others because it is essentially devoid of the economic component and countries often signal policy or alignment changes first in this "low cost" arena. The voting alignment measures may not represent the manner in which nations' perceive their alignment interest as well as the other two alignment components, particularly since a tendency to vote with the Soviet Union in the United Nations may be more apparent than real. That is, voting with the Soviet Union may be, from the standpoint of these Third World countries, more coincidence than actual identification with the principles propounded by the Soviet Union. The Soviet Union often attempts to make political capital of issues that are salient for Third World countries by voting with them in the United Nations. While this caveat is important to consider when making inferences from the scores about the political alignment tendencies of these nations, it may not affect the interpretability of shifts in the measures that take place during the forecast period.

The raw indicators used for measuring voting alignment are the percentage of total votes in agreement with the United States and the percentage of total votes in agreement with the Soviet Union. These raw indicators are transformed into VOTθ and VOTR scores -- representing voting alignment direction and voting alignment intensity respectively -- in the same manner as those transformations are performed on the raw trade alignment and arms alignment indicators. The equation predicting voting alignment direction (Equation 20 in Table 1) is based on the propositions that the

direction of voting alignment vis-a-vis the two superpowers is a function
of the direction of arms alignment, the direction of trade alignment,
the quantity of total aid received from one superpower relative to that
received from the other (RELAID, calculated in Equation 19), and the
nation's type of government. The equation for voting alignment intensity
(Equation 21 in Table 1) calculates the intensity of overall voting align-
ment from trade alignment intensity, arms alignment intensity, the average
level of military aid received from the two superpowers together during the
previous five-year period, type of government, changes in per capita
income, and previous levels of voting alignment intensity.

Finally, two composite measures of alignment, which combine in different
ways the two alignment components actually forecast in the models -- trade
alignment and voting alignment -- are calculated. The average alignment
intensity for countries, ALIGNR (Equation 22), is the simple mean of the
TRADR and VOTR scores. The alignment instability measure, ALINS (Equa-
tion 23), is the absolute value of the difference between the TRADθ and
the VOTθ scores. ALIGNR can be interpeted as representing the overall
propensity for nations to align with the two superpowers while ALINS can
be viewed as an indicator of incongruities, and thus the potential for
change, in nations' alignment direction.

Internal Instability

We noted above that the internal instability descriptor has been enriched
in these models to project the propensity for elite anti-regime behavior
(COUP) as well as mass anti-regime behavior (TML). The equation used to
forecast turmoil (TML) for Latin America, the Middle East, and Africa is
drawn from the theoretical and empirical work of Gurr (1970), and later
modified to focus on the nation-state as the unit of analysis (Gurr and
Duvall, 1972). The turmoil equation (Equation 24, Table 1) is based upon
the assumptions that turmoil is a function of the existence of normative
and utilitarian justifications for violence in the society; the existence

of relatively invariant, structural constraints on the distribution of
values in the society or strain; short-term stress in the society; and the
balance of coercive capabilities between regimes and dissidents. Of course,
the particular measures employed to represent these concepts in this effort
differ considerably from those used by Gurr and Duvall (1972), primarily
because of the need to use predictor variables which themselves could be
forecast in the larger models. Nonetheless, the specific representation
used is substantively equivalent to the theoretical model developed and
tested by Gurr.

The ratio DEFX/GDP represents the extent to which resources are diverted
from domestic social requirements to military needs. Given the assumption
of resource constraints in these countries, it reflects the relative
amount of unmet domestic social needs. This form of the concept strain
is supplemented by a second operational measure, termed STRAIN in Equa-
tion 24, which measures the sum of the differences between per capita
income and the job skills, education levels, and urbanization levels which
are traditionally viewed as contributing to increased income levels.
This measure of strain is high when increases in job skills (percentage
of the labor force in non-agricultural employment), education levels
(percentage of the population literate), and urbanization (percentage of
the population living in urban areas) are not accompanied by increases
in per capita income levels. Projections of the first three of these
components, in turn, are made within the models on the basis of work by
McIlroy (1974). This composite variable -- STRAIN -- captures the differ-
ential rates of development along multiple dimensions that can cause
requirements generated in one sector to be unmet because of insufficient
capabilities in other, related sectors of the economy, and complements
the more simple measure of strain, the ratio DEFX/GDP.

The concept stress refers to shortages or relative declines in the supply
of valued social, economic, or political goods. Stress was measured by
Gurr and Duvall (1972) with, among others, the operational variable DEFX/
GDP, one of our measures of the concept strain. The ratio DEFX/GDP

captures in part the relative unavailability of valued social goods, such
as resources for governmental social services, as well as one aspect of
the structural constraints on the distribution of those goods in the
society.

A third predictor of civil unrest employed in the Gurr model is the norma-
tive and utilitarian justifications for internal instability extant within
the society. Since this concept is not directly measurable on a societal
level, indirect measures, such as past levels of turmoil and past propensi-
ties for coups d'etat, must be employed. Finally, the 1972 Gurr model
postulates that domestic unrest is a function of the balance of coercive
capabilities between regimes and dissidents. While an ideal operational-
ization of this concept would include the capabilities of both sides,
data on dissident capabilities are simply not available in published
collections. This concept is imperfectly measured by two variables --
changes in military manpower levels and average levels of miltary aid
from the superpowers during the previous five years.

While some of the predictors included in the turmoil equation are identical
to those employed by Gurr and Duvall (1972), in other cases substitutes
which could be themselves forecast in the larger models were used. As a
hedge against possible distortions resulting from this substitution process,
multiple measures of each concept were used where possible. Hence, two
measures of strain, justifications for unrest and regime capabilities,
were used. While this cannot insure that the model adequately represents
the theory upon which it is presumably based, much previous research
(Campbell and Fiske, 1959 and Janda, 1971) suggests that this multiple
operationalization technique militates against validity and reliability
problems associated with the use of imperfect measures.

A second aspect of internal instability is elite anti-regime behavior, or
the propensity for coups d'etat (COUP). The increasing frequency of coups
in the Latin American, Middle Eastern, and especially African nations has
created a situation in which coups are highly unlikely in only a few of the

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countries included in this study. Nonetheless, the coup equation (Equation 25, Table 1) is based on recent research which suggests that there are some definite patterns to the occurrence of coups that make it possible to distinguish between nations with a very high propensity for coups and those with a low propensity. Coups tend to occur more frequently during periods of economic recession, high inflation, military defeat, and considerable turmoil. They tend to be more prevalent in societies experiencing rapid changes in political structure, economic development, or other forms of transition and less common in traditional societies not disrupted by war, colonialism, economic development, or natural disasters.

The equation for coup propensity (Equation 26, Table 1) attempts to capture, either directly or indirectly, the various factors that appear to be associated with irregular governmental changes. Two variables -- turmoil (TML) and the five-year change in per capita income, capture directly two of the disturbances mentioned above, internal unrest and economic recession. Average levels of military aid received from the superpowers during the previous five-year period are included to assess the relationship between professionalized military forces and coup proneness in these three regions since analysis suggests that military aid is often associated with force modernization, and professionalism is often a major aspect of force modernization. Finally, the average coup proneness of a nation during the previous five-year period is included as a surrogate for types of rapid change mentioned above which are not explicitly included in the larger models.

International Conflict

Like the internal instability descriptor, international conflict is measured by two variables in the models for the Middle East, Latin America, and Africa. The first of these -- CONF -- taps a wide continuum of conflict behavior, from verbal conflict to actual military engagements. Thus conflict, as assessed by the variable CONF, is a unidimensional

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phenomenon with small-scale disruptions and negative verbal behavior of a limited scope falling at the lower end and military or other violent conflict falling at the upper end. The operational measure CONF is constructed according to the procedures specified in CACI (1974: 353-365), and then subjected to a base 10 logarithmic transformation. The measure CONF can be interpreted as reflecting not only the absolute quantity of negative behavior in which a country engages but also the intensity of its negative behavior.

The equation used to forecast the variable CONF (Equation 27, Table 1) attempts to capture the impact of both domestic and international forces on a nation's conflict behavior vis-a-vis other countries. DEFX, as a proportion of GDP, is used to capture the degree to which nations' budgetary outcomes indicate a preoccupation with military affairs, while changes in the absolute value of defense spending over the short term are used to represent fluctuations in military preparedness, serving as a surrogate for preparations for conflict or possible conflict. The operational variable COOP -- total U.S. and Soviet cooperative behavior directed toward a nation (Equation 26, Table 1) -- is used to capture the extent of bi-polar interest in a particular conflict arena, and thus the extent to which superpower competition is likely to intensify conflict behaviors among client nations. Finally, previous conflict levels are used as a surrogate for the historical conflict proneness of nations and unmeasurable domestic and international influences on nations' conflict behaviors.

A second operational measure of the conflict proneness of nations is the tension ratio (TR). This measure is drawn from the work of Newcombe, et al. (1969, 1972a, 1972b, 1974a, 1974b, and 1975) which is turn is based to a large extent on studies of arms races (Richardson, 1960; Smoker, 1965; and Wolfson, 1968). The tension ratio measure is based on the proposition that nations that devote an unusually high proportion of their resources to the military are likely to employ those resources directly to attain foreign policy objectives. Calculation of the TR

measure first requires that an indicator of the level of resources devoted to the military "expected" on the basis of available total resources be developed. This indicator of "expected" defense spending is obtained by regressing forecasts of defense expenditures per capita upon forecasts of per capita GDP. The predicted value of per capita defense expenditures is multiplied by forecast values of population to produce this "expected" level of defense spending ($\overline{DEFX}$ in Equation 28, Table 1). The tension ratio itself is calculated as the ratio of actual forecast defense spending (DEFX) to the "expected" value of defense spending ($\overline{DEFX}$) multiplied by 100 (Equation 28). The tension ratio can be interpreted directly as a measure of the extent to which nations "overspend" on defense relative to total available resources and indirectly as an indicator of the extent to which nations' conflict behavior is likely to involve the use of the military, thus complementing the measure CONF by isolating specifically countries projected to engage in military activity.

Summary

This second section of Chapter 1 of the Technical Appendix has described the substantive theoretical basis of the equations estimated for and included within these forecasting models for the Middle East, Latin America, and Africa. It has also described some of the more non-obvious operationalizations of the five central environmental descriptors. More detail regarding the justifications for the inclusion of particular predictor variables and regarding variable operationalizations can be found in the Interim Technical Report for Contract No. MDA903-75-C-0179 (CACI, 1975: 34-78).

INTERPRETIVE GUIDELINES

This final section presents guidelines for the interpretation of forecasts generated by the models for Middle Eastern, Latin American, and African nations. These guidelines are based on the preceding discussions of methodology and substantive bases underlying the models. In addition, this

section describes significant research problems that arose in implementing the methodology described above, the mechanisms employed to solve those problems or counteract their effects, and the impact of those solutions on interpreting the forecasts.

As noted in CACI (1974: 439-479), the manner in which the results of a forecasting model of this type can be interpreted depends to a large extent upon the manner in which the parameters of the models were estimated. That earlier report noted that models estimated from cross-sectional data are essentially comparative models and should be interpreted comparatively. That is, the output of cross-sectionally estimated models discriminates among nations along the forecast variables. Thus, such a model can be used as a basis for the statement: "Nation A is forecast to have higher levels of defense spending and to experience higher levels of international conflict than nation B." To aid users in interpreting model results, the forecasts generated from the European model were presented as rank orderings of nations along the variables of interest and as comparisons of groups of countries -- such as NATO nations versus Warsaw Pact countries -- on the forecast variables.

Alternatively, models estimated on a time-series basis for each nation can be used to track change on variables of interest during the forecast period. Thus, a country-specific, time-series model can be used to make inferences about rates of change on variables of interest for each of the nations included within the model since the model itself was estimated from data that track each country's performance on those variables over time.

On the basis of these considerations some general statements can be made about how the forecasts generated by the Middle Eastern, Latin American, and African models should be interpreted. Some of the equations included in the models were estimated from cross-sectional data while others were estimated for each country separately (with the exceptions noted below) from time-series data. Specifically, the equations in Bloc 2 -- GDP,

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consumption, total exports, and total imports -- plus three of the equations in Bloc 1 -- population, investment, and domestic government spending -- were estimated for each country separately (again, with the exceptions noted below) from time-series data. All of the equations in Bloc 3 and one of the Bloc 1 equations -- defense spending -- were estimated cross-sectionally for each of the three regions. Generally speaking, then, the economic and population variables, with the exception of defense spending, can be interpreted as tracking nations' behavior over time, while the military and political variables should be interpreted comparatively. We can make inferences from the forecasts, then, about relative growth in various components of a nation's economy but must confine ourselves to comparative inferences about the military and political variables such as, "Nation A is forecast to have substantially more turmoil than other nations of the region."

Of course, these guidelines are general; problems in data availability, discussed below, forced deviations from these estimation strategies in selected cases. In those cases, an effort was made to adjust the parameters to retain model interpretability consistent with these general guidelines Finally, one must recognize that one of the components of GDP -- defense expenditures -- is estimated on a cross-sectional basis and that the interface between this variable and the other economic variables forced further parameter adjustments to retain the ability of the economic sub-model to track nations' economic behavior over time. As discussed below, the basic approach to solving problems resulting from this interface of time-series and cross-sectional equations is similar in nature and effect to the approach used to solve problems resulting from a less than adequate quantity of data.

Data Constraints

Clearly, in any model driven by parameters estimated from real world data, the quality of resulting forecasts cannot substantially exceed that of the data upon which the parameters were estimated. One of the advantages

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of developing a forecasting model for the European region (CACI, 1974:
147) is that economic, military, and political data are substantially
easier to get and more accurate than those found for less developed
regions of the world, mainly because the bureaucracies that collect and
maintain the data have existed longer, are better developed, and have
established and accepted data collection procedures within Europe. More-
over, since the European economies are rather similar in their general
structure as compared to the economies in the developing regions of
the Middle East, Latin America, and Africa, the specific measures avail-
able are likely to be more conceptually valid for Europe than for the
other three regions. Substantial data problems exist in estimating the
equations for the Middle East, Latin America, and particularly Africa.
Those difficulties are treated as two distinct, though related, subsets
of problems: data quantity and data quality.

Data Quantity. The primary area of difficulty with respect to data avail-
ability was found in the economic sector, particularly for measures of
GDP, consumption expenditures, investment expenditures, and domestic
government expenditures. This problem is rather ironic since economic
data are collected by most nations. Two types of phenomena inhibited
the collection of the required economic data for all countries. First,
some nations use an accounting system that differs from the model des-
cribed in the previous section where GDP is the sum of all types of expen-
ditures, and thus of all production. This problem is especially prevalent
in socialist countries. Where appropriate conversion factors were avail-
able, GDP estimates were developed. In some cases, proven conversion
factors were simply not available so that economic data were missing for
those countries. Second, the economic equations were estimated, as noted
previously, on a time series basis. These data were required for a number of
years in succession. Some of the nations included in the study, particu-
larly African nations, were not founded until some time in the 1960's.
For them, data were either not collected or not published for a long enough
period of time to permit reliable and efficient estimates of the model
parameters to be developed.

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Estimates of consumption, investment, and domestic government expenditures were obtained as a percentage of gross domestic product. These percentages were applied to the obtained measures of GDP to obtain estimates of these components of gross domestic product for each country for each year included in the time series (1960-1970). Some of these percentage estimates were missing for some countries, particularly African countries, for selected years included in this analysis. Combined with missing values on GDP for some countries for selected years, the unavailability of selected percentage estimates for these three components of gross domestic product resulted in a substantial amount of missing data for GDP and consumption, investment, and domestic government expenditures. Here, too, much of the missing data are in the African region. Total exports and total imports were obtained from an alternative source and very little missing data existed on these variables. Finally, defense expenditures were estimated on a cross-sectional data base; the extensive time series of data were not required for this variable.

In the estimation process itself, all country-years that had missing data on any one or more of the variables included in the particular equation being estimated were deleted. Alternative strategies for handling missing data, such as pairwise deletion, were investigated and found to result in inefficient estimates. However, the resulting number of cases available for some nations for the time-series economic sub-model estimation was far too small to be of use in developing reliable estimates. The basic strategy used to overcome this insufficient data problem was to combine, or pool, nations into groups if each of the nations could not be estimated separately.

The estimates derived from pooled data are analogous to cross-sectionally based estimates except that multiple observations on each country were used. The effect of this estimation strategy is to inflate the estimates of the structural coefficients as compared to estimates derived from time-series data on an individual country. These inflated estimates are not inappropriate per se since they can be used to make inferences comparatively

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about relative differences between nations along variables of interest. The problem with the pooled estimates is that the economic sub-model is being used to track nations' economic behavior over time. Hence the inflated estimates for selected countries -- those combined into pools -- must be adjusted downward so that the tracking capability of the economic sub-model is comparable across all countries in the three regions under study.

To explain how those coefficients were adjusted, it is necessary to review the manner in which pools were constructed to overcome missing data problems. First, the pools were region-specific. That is, African nations with substantial missing data were pooled only with other African nations, and not with nations included in either the Latin American or Middle Eastern regions. The same strategy was followed for those Middle Eastern and Latin American nations with substantial missing data on the economic variables. Further, an effort was made to combine nations into pools to minimize the within-pool variance on the economic variables. This strategy was followed to minimize the extent to which pooled estimates were inflated relative to estimates derived from time-series data for a single nation, which tend to exhibit minimum variance on the variables included within a given equation. Thus the inflated pooled estimates were adjusted downward into the confidence ranges established for the time-series estimates for nations with scores that were comparable to those exhibited by the members of the pool.

There were some missing data problems with the cross-sectional data used to estimate the military and political sub-models for the three regions. These were, however, not nearly as severe as those experienced in the data used for the economic sub-model. Moreover, since the estimates were region-specific rather than country-specific, missing data for any one country did not prohibit generating the parameters required to forecast all the military and political variables for an entire region. Listwise deletion -- the same missing data-handling procedure used in the economic sub-model -- was used in these region-specific cross-sectional estimates.

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Of course, the effect of simply living with the missing data in this manner is to exclude the impact of some nations from the parameter estimates for some regions for some variables. Using the resulting parameter estimates for the entire region is tantamount to assuming that the distribution of data on the variables included within that particular equation for the "sample" used for estimation is the same as for the entire "population" of the region. This implies that the nations actually used for estimation constitute a random sample of the entire region. While this assumption is open to question on substantive grounds, the number of nations for which data were missing on the military and political variables was small enough that the assumption is a useful working basis.

Data Quality. Several questions regarding data quality also impinge on the interpretability of the forecasts. These questions can be roughly categorized into two groups. (1) the meaningfulness of indicators of domestic unrest and international conflict, a question discussed at some length in the final report describing the European model (CACI, 1974: 144-153, 353-365) and (2) the comparability of GDP and other economic data across nations, particularly across regions.

The first of these groups of questions arises from the fact that there are no data on the actual number of internal unrest -- or anti-government -- events within nations or on the actual quantity of conflict behavior in which a country engages. Rather, available data reflect the level of reported instability within and conflict emanating from nations. Thus, differential levels of reporting of events among nations and between regions can result in substantial differences in observed values among nations within a given region and between regions themselves. Of course, our use of the resulting forecasts of these variables to compare within regions will effectively eliminate the negative impact of differential reporting levels between regions. To militate against the effects of differential reporting among nations within a given region, the raw data were subjected to the identical transformations used in the European study (CACI, 1974: 146-150 and 355-365) which reduces skewness in the

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observed distributions, much of which can be attributed directly to the
differential reporting problem. The research on biases in event measures
taken from news sources suggests that differential reporting results
in rather complex biasing. The accuracy of available data appears to be
directly related to the thoroughness of news coverage in the various
nations, which, of course, is in part a function of the particular poli-
cies followed by a nation's government at a particular time and the loca-
tion of perceived U.S. interests. The transformations used here, then,
tend to reduce the impact of the most extreme and the most inaccurate
scores in the distributions. The complexity of the biasing, of course,
makes such simple transformations an imperfect way to insure the complete
comparability of scores across countries. However, the resulting measures
appear useful for comparing nations' expected levels of internal unrest
and conflict behaviors over the long term.

The second group of questions centers on the comparability of GDP and other
economic data across regions and across countries within a given region.
The use of resulting forecasts to track nations' behavior over time and
compare change across nations requires comparability within and across
regions. A partial solution to this problem for the GDP measure required
collection of data from multiple sources and careful comparison of alterna-
tive values for each country-year. Every effort was made to assemble, from
these multiple, partial sources, as complete a set of time-series GDP
measures as possible with as much comparability, both over time and across
nations, as could be obtained. This procedure is, at best, a partial solu-
tion, for there is no absolute guarantee that the desired comparability
was obtained in all cases. Nonetheless, the effort resulted in a much
richer and more useful data set than would have been obtained had any one
of the sources been used alone.

Incomparability on other economic measures -- aside from that resulting
from applying percentages to GDP values to obtain some of them -- by and
large results from the fact that domestic government spending and invest-
ment expenditures have some interchangeable characteristics. Governments

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buy factories, dams, and electrical generation plants and equipment in
greater quantities relative to the levels of services they provide in
some countries. Countries with high levels of public investment can be
differentiated from those with relatively lower levels of public invest-
ment and higher levels of private gross domestic capital formation by
the estimates generated for those two equations. (β_6 relates private
investment to change in GDP while β_8, β_9, and β_{10} relate previous domestic
government spending, lagged GDP, and population to domestic government
spending in the current period.) To the extent that domestic government
spending and private investment are interchangeable, the ratio DOM/INV
can be viewed as a measure of government control of the economic infrastruc-
ture. Unfortunately, this measure, which is also a function of the type
of accounting system a nation employs, was not coded. Hence, this relation-
ship was not open to systematic inquiry. In short, substantial caution
should be exercised when comparing either domestic government spending or
private investment expenditures across nations and across time within a
given nation.

Comparison of consumption expenditures relative to GDP across nations
should also consider that as nations' per capita GDP is higher, the
coefficients for the consumption equation (β_3 and β_4) are lower relative
to the combined effects of the domestic government spending and private
investment expenditure coefficients. This results primarily from the
fact that poorer countries require that a greater proportion of their
resources be devoted to subsistence, in much the same manner as the
marginal propensity to consume varies negatively with income and the
marginal propensity to save varies positively with income on a micro-
level.

Finally, it appears that the interchangeability of domestic government
spending and private investment expenditures is greater in wealthier
nations than in poorer nations, at least as wealth is measured by per
capita income. This may result from the fact that domestic government

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spending partially funds services for the population, and that portion of DOM may be higher for poorer countries since these nations must use a greater proportion of their overall resources for subsistence needs. On the other hand, this observation, at least as it is reflected in the existence of non-zero estimates for the coefficient β_{10}, may be a statistical artifact resulting from a larger number of cases in the pools and the fact that a larger number of cases typically results in a greater number of significant estimates for a particular equation. The pools, in turn, are generally composed of nations with lower levels of per capita wealth and smaller and less established bureaucracies which collect and maintain fewer and poorer records. It is clear that these various problems of data comparability in the economic sub-model require that much care be devoted to the interpretation of comparative economic trends within and between regions.

In addition to estimation problems arising directly from the availability and/or quality of data, estimation problems arose from the substantive nature of the equations developed for these forecasting models for Latin America, the Middle East, and Africa. Two such problems, in particular, require some discussion. The interface between time-series equations for GDP and other economic variables and the cross-sectional equations for defense spending (one of the components of GDP) is one area. We noted above that this interface presents problems similar to those arising from the use of pools for estimating country-specific coefficients for the economic sub-model; the resulting coefficient estimates were inflated relative to comparable estimates based on time-series data and created distortions in the economic sub-model as it tracks nations' economic behavior over time. Since there were no comparable time-series estimates with associated confidence intervals to guide adjustments of these coefficients, the general strategy followed was to lower the estimates of coefficients in the defense spending equations for the three regions toward their lower confidence bounds, that is, to make them less different from 0.0 than the respective expected values of the distribution of estimates. While these confidence intervals provide a less satisfying basis for adjusting the estimates

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than those used for the strictly economic equations for pooled estimates, the adjustments made provided intuitively satisfying defense spending trends through the forecast period with few exceptions. This is an area where further developmental research is needed before model results can be used with high confidence.

We might note parenthetically that many of the variables in the political and military sub-models have second- and third-order interfaces with the economic sub-model via their direct and/or indirect impacts upon defense spending. Thus, the problem of inflated estimates in the context of sub-model interfaces is also manifest in these equations. However, adjustment of coefficients at the point of direct interface, namely, the defense spending equation, is sufficient to permit the economic sub-model to track nations' economic behavior over time adequately and, combined with our guidelines for comparative interpretation of forecasts of political and military variables, sufficient to insure the usefulness of these results for JCS/J-5 policy planning as well.

The second special estimation problem that arose in the course of this work centers on the equations for predicting U.S. and Soviet trade with the nations of Latin America, the Middle East, and Africa, used to forecast the trade alignment variables. Briefly, existing theory deals with the general problem of specifying and estimating trade equations but not with the more specific problem of estimating coefficients for U.S. and Soviet bilateral trade, at least not outside the context of a nearly inclusive trade-flow matrix. This lack of theoretical guidelines, combined with the considerations discussed below, made these equations difficult to estimate adequately. Here, again, further developmental research would have high payoffs.

A number of strategies were employed to estimate these equations. These included both OLS and 2SLS estimation strategies, estimations constrained by pre-established coefficients for the population variables, splitting import and export equations, and using both raw data and data subjected

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to logarithmic transformations. The only realistic results were obtained when nations were excluded from specific equations if they did not trade with the Soviet Union at all during the time-series period (1960-1970) combined with splitting the import and export equations and using logarithmically transformed data. In the simulation model, use of parameters estimated in this manner is tantamount to assuming that the existence of trade with the Soviet Union is preconditioned on a Soviet policy decision to initiate trade, and that once that decision is made, the level of resulting trade can be viewed as a function of economic and alignment variables. Thus, Soviet decisions to initiate trade with Middle Eastern, Latin American, and African nations must be introduced exogenously into the model.

This solution is less than wholly satisfactory. Yet one must remember that we are dealing with unstable regions, underdeveloped theory, and rather poor data. We have noted need to devote additional resources to theory development as it bears upon the variables of interest to JCS/J-5 in the context of developing regions of the world (CACI, 1975: 83-89).

We also discussed (CACI, 1975: 83-89) alignment as a two-way interaction, and that accurate and dynamic prediction in these three unstable environments requires forecasting policy shifts of the United States, the Soviet Union, and other major powers as well as those of the nations specifically under study and including the former forecasts in the model. In contrast, policies of the United States and the Soviet Union vis-a-vis Europe have exhibited more stability over time, as have the alignment policies of those European nations themselves. Specific inclusion of dynamic mechanisms for predicting U.S. and Soviet policies, then, would do much to solve problems peculiar to the sub-models which represent interactions among these nations and between the nations of the Middle East, Latin America, and Africa and the two superpowers.

Finally, one objective of the present effort is to determine the transferability of models of the sort developed in the European study to non-European

contexts. The kinds of problems encountered in estimating these equations suggest that there exist some very real problems in making such a transfer in a straightforward manner. Thus, users of these models may wish to examine critically the structures and parameters of the superpower trade equations and experiment with alternative parameters and perhaps alternative structures as well. It may be that expert judgment can be used in place of or to supplement the equations and parameters developed here to forecast changes in U.S. and Soviet trading patterns vis-a-vis the nations of these three regions.

SUMMARY

This brings up, again, the general guidelines for interpreting these forecasts and simulations. The forecasts must be interpreted in a manner consistent with the types of information from which they were developed. Specifically, the economic sub-model can be used to track a nation's economic behavior over time. Where specific data and/or interface problems impinged upon this capability, appropriate compensatory adjustments were made. These adjustments do not entirely eliminate the effects of these problems. They do, however, enhance the comparability of equations in the economic sub-model within and across regions.

The political and military sub-models were developed from a comparative framework, using estimation strategies that sought to discriminate among nations in terms of variance on the forecast variables. Thus, interpretation of the results of these forecasts should focus on the significant within-region differences in these variables, emphasizing outliers, and not on point predictions of the values of these forecast variables or necessarily over-time changes in these values for particular countries. This limitation on interpretation does not effectively constrain the usefulness of these models for long-range policy planning, however, since that kind of planning must focus on areas where threats to U.S. interests are expected and on the strategies that can be implemented by the United States to reduce those threats or alter their effects.

CHAPTER 2. KEY ASPECTS OF THE THREE REGIONAL MODELS

The first chapter of this Technical Appendix discussed the general approach, or methodology, employed in developing the three regional fore-casting models for the Middle East, Latin America, and Africa. That chapter also presented the theoretical justifications for including the predictor variables in each of the equations in those models and spe-cific difficulties that arose in the parameter estimation, or empiri-cal verification, phase of the analysis. In this chapter key aspects, or characteristics, of the regional models that were found in the empiri-cal verification phase of the effort are discussed. For the most part, the discussion focuses on important differences and similarities among the three regions as they are reflected in the parameter estimates used in the computer model.

THE MIDDLE EAST

The parameters obtained for the Middle Eastern equations reflect two quite obvious factors. First, the Arab-Israeli conflict overshadows other determinants of defense spending, military manpower levels, and, indirectly (through these two measures of military power base), internal instability in the region. Moreover, that conflict has important effects on the alignment variables in the Middle East. A second obvious factor reflected in the Middle Eastern parameter estimates is the relative availability of resources in that region, at least as compared to the availability of resources in Latin America or, particularly, Africa. Many of the constraints that dampen increases in defense spending and military man-power levels in Latin America and Africa are simply not found in the Middle East.

Defense Spending

As expected, conflict is a major force behind defense spending in the
Middle Eastern region (Table 1 shows parameters for the DEFX equation --
Equation 9 -- for the Middle Eastern countries) primarily because conflict
patterns in that region are so widespread, intense, and use more military
force to obtain foreign policy objectives than the patterns in the other
regions. Unlike in Latin America, rival defense spending has no signifi-
cant relationship with changes in defense spending once conflict pat-
terns are controlled. Escalating arms races in the Middle East are due,

TABLE 1

Parameters for ΔDEFX: Middle East

Predictor	Estimate
ΔGDP/POP$_{t-1}$	.08166
CONF$_{t-1}$	7.85290
MILA$_t$	.72904
DEFX$_{t-1}$/GDP$_{t-1}$	-13.84200

then, to conflicts among the nations, not to abstract arms buildups. A
second major determinant of changes in defense spending in the Middle
East is the level of available total resources, or changes in per capita
GDP. Increases in resource levels tend to be associated with increases
in the quantity, though not necessarily in the proportion, of resources
devoted to the defense effort. Military aid from the United States and
the Soviet Union is also positively related to increases in defense
spending. This relationship might, however, be partially an artifact.
Aid from the two superpowers typically goes to nations involved in intense
conflicts and those conflicts, in turn, tend to produce high spending
levels. The existence of this linkage, even when past conflict levels
are controlled, suggests that high levels of military aid tend to increase
the strength and bargaining power of the military bureaucracy with regard
to the conduct of foreign affairs.

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Finally, the negative coefficient for the predictor $DEFX_{t-1}/GDP_{t-1}$ suggests that, even in the Middle East, some limit exists on the extent to which resources can be devoted to the military, or an upper lid on the proportion of resources that can be spent on the defense effort. Nonetheless, the size of this coefficient is much smaller in the Middle East than in the other two regions, permitting the inference that the resource constraints are less severe than in Latin America or Africa.

Military Manpower

Military assistance from the United States and the Soviet Union is also the primary predictor of changes in levels of military manpower in the Middle East. (See Table 2.) Military aid has an indirect effect on changes in military manpower levels through its impact on changes in defense spending ($\Delta DEFX$). Interestingly enough, this partial effect is

TABLE 2

Parameters for $\Delta MILM$: Middle East

Predictor	Estimate
$CONF_{t-1}$	.03020
$\Delta DEFX_t$	-.00010
$MILA_t$	.00114

negative while the direct partial impact of aid on manpower levels is positive. This negative partial effect may be due to the fact that military assistance, as reflected through changes in defense spending, may produce force modernization in which equipment is substituted for manpower. Again, there is a relatively powerful impact of conflict levels on this measure of military power base.

Taken together, these equations suggest that the Middle East is in fact the kind of environment that casual diplomatic and military observers often paint. The region is a powderkeg, fueled by multiple, positive feedbacks among conflict, defense spending, and military manpower levels.

As long as conflict patterns in the region remain widespread and resource levels continue to increase, the United States and the Soviet Union are likely to have a minimum impact on reducing the effects of these multiple feedbacks. Nonetheless, it is equally clear that a continuation of substantial arms transfers and military aid by the two superpowers will strengthen the unstable and explosive relationships, leading to continued feeding of the conflict patterns and increases in defense expenditures and military manpower levels.

Voting Alignment Direction

The equation for voting alignment direction (VOTθ) for the Middle Eastern countries suggests that the two primary predictors of the propensity of these nations to align politically with the United States versus the Soviet Union are the relative amounts of trade and aid -- both economic and military aid -- the countries obtain from the two superpowers. Middle Eastern nations tend to vote with the superpower with whom they trade the most and from whom they receive the most assistance.[1] (See Table 3.) Type of

TABLE 3

Parameters for VOTθ: Middle East

Predictor	Estimate
$TRAD\theta_t$	.17646
$RELAID_t$	-.00408
$GOVT_t$	.04617

government also has an effect, albeit small, on the voting alignment direction of Middle Eastern countries, with broad-based and popularly

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[1] The metrics of VOTθ and RELAID are reversed, that is, higher VOTθ scores represent closer alignment with the Soviet Union while higher RELAID scores represent relatively greater aid from the United States. Hence, the negative coefficient for RELAID in Table 3 means that these nations tend to align with the superpower from whom they receive the most aid.

supported regimes more likely to vote with the United States and new or traditionaly elitist regimes more likely to vote with the Soviet Union.

Arms alignment tends to have very little effect on voting alignment direction among Middle Eastern countries. Some nations that obtain most of their arms from the United States, such as Iran and Saudi Arabia, usually vote against the United States while others with the same kind of arms alignment pattern, such as Israel, often vote with the United States. In any event, the high correlation between arms alignment direction and trade alignment direction makes arms alignment a poor predictor in a model that also includes trade alignment as a predictor.

The estimate of the constant term in this equation was substantially higher for the Middle East than for the other two regions, suggesting that Middle Eastern nations have some "natural" tendency to vote with the Soviet Union in the United Nations. This large constant is probably reflective of the Soviet-American division over the Arab-Israeli conflicts and, perhaps more importantly, the Soviet inclination to vote with Third World countries on "North-South issues." This tendency is likely to remain, then, as long as the Arab-Israeli dispute continues and/or the United States remains firmly committed to Israel. Nonetheless, the United States does have a number of potentially strong political allies in the Middle East. Nations such as Iran, Israel, and Saudi Arabia, with whom the United States has strong arms and trade alignment, can become strong political allies as well. Other countries, such as Egypt, Lebanon, and Jordan, might also be amenable to U.S. aid influence when and if the Arab-Israeli dispute is resolved.

Voting Alignment Intensity

At first glance, the Middle Eastern equation for voting alignment intensity (VOTR) appears somewhat confusing and less than intuitively satisfying. Essentially, that equation (Table 4) suggests that, controlling for previous alignment intensity and type of government, higher levels of trade with and military aid from the two superpowers result in lower levels of

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TABLE 4

Parameters for VOTR: Middle East

Predictor	Estimate
$VOTR_{t-1}$	.54649
$TRADR_t$	-.18606
$GOVT_t$	.02056
$MILA_t$	-.00012

trade with the military aid from the two superpowers result in lower
levels of voting alignment intensity with them. However, the Middle
Eastern nations typically trade with and receive aid from only one of the
superpowers. The superpowers themselves are usually at odds over those
U.N. issues most salient to the Middle Eastern countries. This equation
probably reflects a process in which the Middle Eastern countries are
playing one superpower against the other in terms of trade, aid, and
support in the United Nations to obtain advantages without tying themselves
to any one of the superpowers. The United States carries on the bulk of
military and non-military trade with the countries of this region, with
the exception of Egypt, Iraq, and Syria. However, because of its support
for Israel in the United Nations, the United States is at odds with the
majority of the Middle Eastern countries over those political issues most
salient to the region. The negative coefficient relating trade alignment
intensity to voting alignment intensity reflects these specific interactions.

Two other variables -- previous voting alignment intensity ($VOTR_{t-1}$) and
type of government ($GOVT_t$) -- predict positively voting alignment inten-
sity for the Middle Eastern nations. Nations with a history of support-
ing the two superpowers in the United Nations continue to do so and
elitist regimes, both new and traditional, are more likely to support
the superpowers than broad-based and popularly supported regimes. Over-
all, this equation is likely to remain a useful forecasting equation
only given a continuing dispute between Israel and the Arab states. The
trade alignment coefficient would tend to become positive once the

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negative effects of this dispute on U.S.-Arab relations are removed. An interesting alternative forecast can be generated by presuming an end to the Arab-Israeli disputes and setting the coefficient relating trade alignment intensity to voting alignment intensity to some positive value, similar to the coefficients observed for Africa and Latin America.

Turmoil

Although the turmoil equation for the Middle Eastern region is classic in the type of predictors included and the direction of associated coefficients, it is important to remember that turmoil (TML) is not a particularly significant form of governmental instability in that region, at least not when compared to its importance in Latin America or Africa. (See Table 5.) Of greater importance as an indicator of regime instability in the Middle East is the variable representing the propensity for coups d'etat (COUP), a richer and stronger equation for this region than the turmoil equation. High levels of past turmoil and a high propensity for coups d'etat contribute to turmoil in the Middle East while increases in military manpower levels, used as an indicator of a regime's coercive capabilities, tend to mitigate against high turmoil levels.

TABLE 5

Parameters for TML: Middle East

Predictor	Estimate
TML_{t-1}	.71976
$COUP_{t-1}$	.96328
$\Delta MILM_t$	-.76165

Coup Propensity

Even if turmoil is not a particularly significant form of regime instability in the Middle East and even though U.S. and Soviet policy variables do not directly affect turmoil levels in the region, there are some

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interesting and policy-relevant aspects of the linkages between turmoil
(Table 5) and coup propensities (Table 6) in the Middle East. First,
positive reinforcing feedback appears to exist between turmoil and coup
propensities, with the result that the various forms of regime instability

TABLE 6

Parameters for COUP: Middle East

Predictor	Estimate
TML_t	.51983
$COUP_{t-1,t-5}$	.41069
$MILA_t$	-.02679
GDP_t/POP_t	-.00267

tend to feed one another. This feedback seems significant regardless of
how the two regime instability variables -- TML and COUP -- are lead or
lagged. There are, however, a number of factors indirectly affected
by policies of the two superpowers which tend to dampen these feedback
loops. Military aid, for example, reduces coup propensities directly
and, through that variable, reduces turmoil levels indirectly. Military
aid also increases military manpower levels, which, as noted above,
reflects an aspect of regimes' coercive capabilities and directly reduces
turmoil levels. Second, increasing per capita income tends to reduce
coup propensities and thus, indirectly, turmoil levels. Increases in
per capita income permit some satisfaction of demands generated by the
population and thus reduce dissatisfaction with governmental performance.

The equation for coup propensities (Table 6) was estimated in a two-step
process so that efficient estimates for the turmoil, military aid, and
change in per capita GDP coefficients could be obtained. The simple
correlation between coup propensities and past average coup levels
($COUP_{t-1,t-5}$) was extraordinarily high in the Middle East and "washed out"
covariation between COUP and the other three predictor variables. The

two-step estimation strategy -- regressing COUP on the other three predictors and then regressing the residual from this estimation on $COUP_{t-1, t-5}$ -- was used to deliberately underestimate the coefficient for past coup levels and overestimate the coefficients for the other predictors included in the equation. The rationale for this procedure was that the extremely high correlation between coup propensities and past coup levels was unrepresentative of the processes that lead to unscheduled governmental changes in the Middle East. The resulting equation was not dissimilar from those obtained for Latin America and Africa, except that the partial effect of military aid on coup propensities was negative in the Middle East. This result is substantively explicable since the chasm between military bureaucracies and civilian governments tends to be smaller in the Middle East than in the other two regions. Hence, additional military resources tend to support the regime rather than create countervailing influences.

Since the direct and indirect effects of military aid on both aspects of internal instability in the Middle East -- turmoil and coup propensities -- are negative, the provision of military assistance by the United States and/or the Soviet Union to these countries is a consistent and powerful stabilizer of present regimes in the region. Nonetheless, those effects, at least as they are found in the COUP equation, were deliberately overestimated. The actual capability for the superpowers to influence regime stability in this region, then, might be somewhat less than the partial regression coefficients would suggest.

Conflict

For the present at least, the Middle East is the most unstable, explosive, and conflict-prone of the three regions examined. Conflict there is a function of disputes among highly militarized countries and tends to be intensified by American and Soviet interest and activity in the region. The conflict behavior of nations in the region tends to be very highly correlated over time, so much so, in fact, that the inclusion of past conflict levels in the equation substantially reduces the stability of

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parameter estimates for the other predictor variables. (See Table 7.) Since the inclusion of past conflict in the equations results in only a moderate increase in explanatory power, the equation that appears most useful for forecasting conflict in the Middle East includes only two predictors -- defense spending relative to GDP and cooperative behavior

TABLE 7

Parameters for CONF: Middle East

Predictor	Estimate
$DEFX_t/GDP_t$	6.33720
$COOP_t$	.12980

from the two superpowers (COOP). Those nations that are highly militarized, as indicated by the proportion of total resources devoted to the defense effort, and those that are the focus of superpower competition in the region are, on the basis of this equation, most prone to conflict behavior. It should also be noted that, to a certain extent, U.S. and Soviet interest in specific countries in the region, indicated by high values for the COOP variable, results from rather than generates conflict behavior within those countries.

Summary

The Middle East is such a highly volatile region because of the extensive and powerful positive feedback relationships among conflict, changes in defense spending, and changes in military manpower levels. Those relationships, themselves, tend to be intensified by the kinds of military and diplomatic policies presently being followed by the United States and the Soviet Union. Superpower activity in this region appears to take the form of brokering with conflicting clients; thus, the relationships between superpower behavior and conflict in the region are unlikely to be merely data artifacts. Unless both the United States and the Soviet Union can exercise mutual restraint in the areas of arms sales, military aid, and

diplomatic activity, both new and long-standing disputes will continue to erupt into violent conflict.

LATIN AMERICA

One of the most interesting aspects of the Latin American environment as it is captured by the variables included in the forecasting model is the influence of the United States over diverse aspects of that environment. Military aid, for example, has direct effects on changes in defense spending and military manpower levels, on turmoil levels, and on the propensity for coups d'etat in Latin countries. Military aid also has indirect impacts on economic growth in Latin America and on the alignment patterns of Latin nations. Except for Cuba, all military aid to the Latin American countries comes from the United States. In addition, arms sales by the superpowers, mostly the United States again, have both direct and indirect effects on the alignment of the Latin American nations.

Defense Spending

The most important effect of military aid is found in the defense expenditures equations for the Latin American countries. The equation for changes in defense spending (Table 8) suggests that military aid enlarges and strengthens the military bureaucracy in the Latin countries, thus feeding demands for more resources to be devoted to the defense effort. Three other variables are linked to changes in defense expenditures in the Latin American environment: changes in the defense spending of rival nations ($\Delta RIVDEX_{t-1}$), changes in per capita income, and the proportion of a country's total wealth devoted to the defense effort.

Changes in a rival's defense spending relates directly to changes in defense expenditures in the Latin environment, unlike the case in the Middle East where this relationship is mediated by conflict. It appears that rivalries and arms races can exist in Latin America independently of overt and intense conflict among the participants. Changes in per

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TABLE 8

Parameters for ΔDEFX: Latin America

Predictor	Estimate
$MILA_t$	5.2574
$\Delta RIVDEX_{t-1}$	.19563
$\Delta GDP/POP_t$	.01000
$DEFX_{t-1}/GDP_{t-1}$	-27.68300

intense conflict among the participants. Changes in per capita GDP cap-
ture changes in the level of overall resources available for spending,
and the positive partial relationship between this predictor and changes
in defense expenditure suggests that, all other things being equal, nations
with increasing resource bases will devote more marginal resources to the
defense effort. The negative partial coefficient relating defense spending
as a percentage of GDP to changes in defense spending suggests that some
allocation of resources between domestic and other requirements exists that
a nation will not go beyond. Thus, high defense spending relative to total
resources in a given year will lead to demands for reallocation of resources
in the next year, or at least at a lower rate of growth in defense spending.
The same phenomenon was observed in the other two regions, with the effective
constraint appearing greatest in Africa and least in the Middle East. This
latter finding is quite consistent with differences in the availability of
total resources across the three regions.

The equation for changes in defense spending (Table 8) suggests that the
United States is a dominant actor in Latin defense spending. On a statis-
tical level, U.S. military aid determines changes in Latin American defense
spending to an even greater extent than the coefficient in Table 8 indicates
since that coefficient was deliberately depressed by a two-step regression
process. (This procedure was identical to that used in the CONF equation
for the Middle East: changes in defense spending were regressed on the
other three predictors and the residuals from this procedure regressed on
military aid.) The extremely strong statistical relationship observed,

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however, is in part a function of U.S. aid being strongly related to other predictors included in the equation, such as changes in rivals' defense spending and changes in per capita GDP. Moreover, aid is a two-way street, and both the donor and the recipient must desire any transfer. For this reason, too, the United States may have less control over defense spending in Latin America than the regression coefficients for this equation would suggest. Nonetheless, as was noted in the introductory discussion on Latin America, the United States is a more influential actor in this region than in either of the other two regions studied in this effort.

Military Manpower

Military manpower is also sensitive to the effects of military aid, although the direct and indirect impacts of aid appear, on the surface, to be conflicting. As Table 9 shows, the partial direct linkage between

TABLE 9

Parameters for ΔMILM: Latin America

Predictor	Estimate
$\Delta DEFX_t$	.00176
$MILA_t$	-.01442
$CONF_{t-1}$	.01877

aid and changes in military manpower levels is negative. Nations receiving high levels of aid tend to have slowly growing defense establishments, at least in terms of numbers.[2] However, the discussion above noted that military aid tends to propel increases in defense spending in Latin America, and changes in defense expenditures, in turn, are positively related to changes in manpower levels. Taken together, these partial coefficients suggest that military aid has two types of effects on recipients. First, aid tends to

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[2] The simple correlation between aid and changes in manpower levels is positive. Only when changes in defense spending are controlled does the partial coefficient become negative.

increase the size of the defense establishment; thus, the simple relationship between aid and changes in manpower levels is positive and the control for changes in defense spending, which itself is highly related to aid, creates the negative partial coefficient. Second, aid tends to result in force modernization, or the substitution of equipment for manpower. This latter aspect of aid helps explain the extraordinarily simple correlation between aid and changes in defense spending and the existence of a negative residual linkage between aid and changes in manpower levels once changes in defense spending are controlled.

Finally, high levels of conflict appear to drive increases in Latin military manpower levels. Conceptually, this is similar to the effect of conflict in the Middle East. However, the size of the linkage in Latin America versus those found in the Middle East, and the relative impotence of this predictor as compared to the strength of the other two predictors included in the manpower equation, suggest that conflict is a less significant phenomenon in Latin America than it is in the Middle East. This observation, of course, is not at odds with either the popular press or judgments of area experts.

Voting Alignment Direction

The equation for voting alignment direction (Table 10) reflects the impact of the United States on Latin defense establishments and economies. The

TABLE 10

Parameters for VOTO: Latin America

Predictor	Estimate
$ARMO_t$	.28688
$TRADO_t$	.22770
$RELATD_t$	-.00089
$GOVT_t$	.07211

tendency of Latin American nations to purchase arms from the United States rather than from the Soviet Union is a strong predictor of their tendency to vote with the United States rather than with the Soviet Union. Other important predictors of voting alignment direction in Latin America include trade alignment direction, the relative quantity of economic and military aid received from the United States versus that received from the Soviet Union, and the type of government of a nation. Latin nations tend to support that superpower with whom they trade and from whom they receive the most assistance and purchase the most armaments -- which, except in the case of Cuba, means the United States. In addition, broad-based and popularly supported regimes are more likely to vote with the United States while new or traditional elitist regimes tend to align themselves with the Soviet Union.

This equation suggests that the United States has a greater ability to acquire and retain allies among the Latin American nations than it does among the Middle Eastern countries. To the extent that the United States cannot reduce the Arab-Israeli conflict, American policy on trading concessions, selling of sophisticated armaments, and granting of economic and military assistance will be most potent in the Latin American region. Even so, the ability to implement these kinds of policies in that region depends on the willingness of the Latin states to trade with the United States, purchase arms from this country, and receive economic and military aid from the United States. The willingness of Latin American countries to receive the benefits of these American policies, in turn, depends upon a number of exogenous factors, such as their requirements for very high technology goods, the assured availability of spare parts and training for military hardware over the long term, and the applicability of American development strategies to these nations' environments. Thus, U.S. policy options in the areas of trade, arms sales, and aid will have to be carefully designed if they are to appeal to the Latin states. If so designed, American policy can increase the likelihood that the United States can obtain and retain political allies in the region.

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Voting Alignment Intensity

To a limited extent, the intensity of voting alignment for the Latin American countries is affected by U.S. willingness to sell military equipment. Previous levels of voting alignment intensity are the most potent predictor of alignment intensity. Two other variables contribute to predicting voting alignment intensity: the intensity of nations' arms alignment with the two superpowers and changes in per capita GDP. Both of these latter two variables are negatively related to alignment intensity. (See Table 11.) Once previous support for the superpowers in the

TABLE 11

Parameters for VOTR: Latin America

Predictor	Estimate
$VOTR_{t-1}$	.91264
$ARMR_t$	-.02536
$\Delta GDP/POP_t$	-.00057

United Nations is controlled, nations tend to become less supportive of the United States and the Soviet Union as their level of per capita national wealth increases. This finding may stem from the fact that increases in wealth enable Third World countries to carry out more activity independently of support from the superpowers. Moreover, it appears that the marginal effect of arms supplies from the United States and/or the Soviet Union may not be to generate support for those powers in the United Nations. Thus, it seems that neither the United States nor the Soviet Union can "buy" votes in the United Nations by providing arms to Latin countries, at least once the long-term secular trend in voting alignment intensity is controlled.

Turmoil

Turmoil is another variable that appears to be susceptible to the influence of U.S. policy in Latin America. The turmoil equation for Latin America is quite straightforward, with the STRAIN variable, past levels of turmoil, and high coup propensities predicting positively to high turmoil levels. Military aid contributes to the coercive capabilities of the Latin regimes, and thus predicts negatively to turmoil. Finally, defense spending relative to GDP predicts positively to turmoil, suggesting that this variable is a good indicator of the concept of strain, at least in the Latin environment. (See Table 12.)

TABLE 12
Parameters for TML: Latin America

Predictor	Estimate
TML_{t-1}	.75720
$COUP_{t-1}$	.70260
$DEFX_t/GDP_t$	22.95800
$STRAIN_t$	.27233
$MILA_t$	−.09864

It appears that the United States can exercise a complex of direct and indirect effects on internal instability within the Latin American environment. First, military assistance has a direct negative effect on turmoil, presumably because aid increases regimes' coercive capabilities. At the same time, aid increases defense spending and high defense outlays relative to total resources tend to produce turmoil-causing strains. Moreover, military aid is also associated with high coup propensities in the region, and turmoil and coups tend to have a positive-feedback interaction in Latin America. Thus, one potential U.S. policy arena, military aid, has both positive and negative impacts on turmoil in Latin nations. Even though the exact balance between these forces cannot be readily calculated

from the parameter estimates, it is likely that aid will _appear_ to have
essentially no effect on turmoil behavior when in fact it may be exercis-
ing a complex of contradicting effects.

Coup Propensity

As noted earlier, military aid is associated with high propensities for
coups d'etat in Latin America. Other important predictors of coup pro-
pensity in this region include turmoil, a previous history of coups
within the country, and long-term changes in GDP per capita, the latter
variable having a negative effect on coup propensities. (See Table 13.)

TABLE 13

Parameters for COUP: Latin America

Predictor	Estimate
TML_t	.13209
$COUP_{t-1, t-5}$	.50437
$MILA_t$	.05673
$\Delta GDP/POP_t$	-.00491

It seems as though the United States can have a number of direct and
indirect influences over the propensities for coups in Latin America,
although those influences tend to run in contradictory directions, much
as in the turmoil equation. On the one hand, substantial U.S. military
aid increases the size and strength of the military establishments and
therefore enhances their suppressive capabilities. This effect reduces
turmoil levels directly, and through turmoil, coup propensities indirectly.
However, it is the military establishment that is most likely to engage
in coup activity, and high levels of aid increase their capabilities to
replace governments; hence, the positive direct linkage between aid
levels and coup propensities. Increasing per capita income, which can
be stimulated to some extent by developmental aid, stabilizes Latin gov-
ernments in two ways. First, such increases lower turmoil levels, thus

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indirectly lowering coup propensities. Second, those increases directly lower coup propensities independently of their effect on turmoil levels. The effect of U.S. policy, then, tends to be both complex and often contradictory with regard to internal instability in Latin America. American influences may appear to have no effect on the stability of Latin regimes when in fact they are having a combination of positive and negative impacts.

Conflict

The conflict equation for Latin America is one in which American policy variables have no direct effects, although the complex of direct and indirect impacts on the Latin environment do feed the conflict equation. (See Table 14.) Conflict is directly fed by previous hostilities in

TABLE 14

Parameters for CONF: Latin America

Predictor	Estimate
$CONF_{t-1}$	.40489
$\Delta DEFX_t$	.00170
$DEFX_t/GDP_t$	-13.43900

which a nation is involved and increases in resources devoted to the military. This latter relationship, of course, may be more a result than a cause of conflict. Moreover, there appears to be an upper limit on the relative cost Latin American nations are willing to pay to achieve foreign policy objectives via conflict behavior. The existence of this upper limit is suggested by the negative partial coefficient for the $DEFX_t/GDP_t$ predictor. Thus, Latin American arms races and rivalries tend to be less likely to spiral and involve intense conflict than are those of the more volatile Middle Eastern and African regions.

Summary

Clearly, one of the most significant aspects of the Latin American environment is that the defense establishments of those countries are largely supported and promoted by the United States, although cursory examination of available data would tend to overestimate the potential for American manipulation of Latin defense efforts. Even so, it does appear that the United States, through its military aid policies, can promote and/or exacerbate Latin rivalries, arms races, and thereby the latent, although seldomly physical, conflict that is observed in the region. In contrast to the Middle Eastern case, cooperative behavior from the superpowers does not exacerbate conflict in the region, probably because the superpowers do not have many conflicting or rival clients and Latin America is not an arena for superpower confrontation. By and large, then, U.S. ability to influence the Latin environment as a whole is a result of its military aid policies, which tend to bolster the size and internal importance of defense establishments in the region.

AFRICA

Two aspects of the African environment appear particularly relevent to this forecasting effort. First, except in the voting alignment direction equation, both the United States and the Soviet Union appear relatively impotent actors as compared to the kinds of influences they seem to have in Latin America and the Middle East. They do not have the direct effects on turmoil and coup propensity found in the other regions. Moreover, the impacts of variables representing superpower policies are much less in other African equations than in other Middle Eastern and Latin American equations. In effect, there is little either superpower can do to affect the future African environment significantly. Second, many of the key relationships among variables that are associated with the instability and explosiveness of the Middle Eastern region are also exhibited in the African equations. To date, however, resource constraints appear to preclude the kind of widespread and intense arms races and conflict

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typifying the Middle East. Yet if longstanding tribal conflicts and
boundary disputes are not settled and if resource constraints are lifted,
Africa could emerge over the long term as a very unstable and volatile
region.

Defense Spending

The primary predictor of defense spending in Africa appears to be the
availability of resources. The defense expenditure equation for Africa
(Table 15) reveals a cyclic pattern in the allocation of total resources

TABLE 15

Parameters for ΔDEFX: Africa

Predictor	Estimate
$\Delta GDP/POP_t$	.00750
$DEFX_t/GDP_t$	-386.29
$MILA_t$	1.12170

between the defense effort and non-defense development efforts. High
defense spending relative to total resources in one year is followed by
a relatively small increase in the defense budget the next year as com-
peting demands for scarce resources generate more intense pressures
for allocation to non-defense sectors. With the overall availability
of resources constraining defense spending, military aid from the super-
powers tends to increase defense expenditures, but that increase is then
translated into a reallocation of some additional resources into non-
defense development efforts.

Over the short term, military aid from the superpowers has a beneficial
impact on African countries, permitting them to reallocate resources to
badly needed development efforts. In fact, this equation suggests that
precisely such a reallocation is to be expected. Over the long term,
however, the effect of military aid may not be so benign. Since neither

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the United States nor the Soviet Union appears to have much ability to moderate conflict or other destabilizing phenomena in the region, sustained high levels of military aid may effectively remove the resource constraints that have so far kept Africa from becoming an explosive region.

Military Manpower

The military manpower equation for Africa takes the same form as that for the Middle East, with military aid and past conflict levels predicting positively to changes in military manpower levels while changes in defense expenditures are negatively linked to changes in manpower levels. (See Table 16.)

TABLE 16

Parameters for ΔMILM: Africa

Predictor	Estimate
$CONF_{t-1}$	.46446
$\Delta DEFX_t$	-.00416
$MILA_t$	.00857

The negative partial relationship between spending and manpower changes suggests that many of the newer nations, with small "start-up" armies, are now undergoing force modernization. The positive partial linkage between aid and changes in manpower levels may reflect the fact that much of the aid given to African countries consists of relatively unsophisticated personnel-support weapons, such as small arms and mortars.

The very strong reinforcing relationships among defense spending changes, manpower level changes, and conflict levels in Africa are similar to those found in the Middle East. Conflict intensities have not been as high in Africa, and resource constraints have so far dampened the escalatory and explosive nature of these linkages. However, there are long-standing

ethnic and boundary disputes among the African nations and the potential
for raw materials to provide them with extensive resources in the future.
While these added resources will benefit African nations' economic devel-
opment efforts, they could also result in large and modern defense estab-
lishments much as they have in the Middle East. Combined with continuing
disputes, the existence of substantially enhanced military capabilities,
as the present Middle Eastern situation demonstrates, provides the poten-
tial for widespread and intense conflict situations.

Voting Alignment Direction

The equation for voting alignment direction (VOTθ) reflects the potency
of predictors which are, to a limited extent at least, manipulable by
the two superpowers: trade, aid, and arms sales. The equation suggests
that African nations vote in the United Nations with the superpower with
whom they trade the most, from whom they receive the most economic and
military aid, and from whom they purchase armaments. The variable repre-
senting type of government has the same partial effect in this equation
as it does in the two other regions. Countries with broad-based and
popularly supported regimes are most likely to vote with the United States
while countries with elitist regimes, either new elites or traditional
elites, tend to align politically with the Soviet Union (Table 17).

TABLE 17

Parameters for VOTθ: Africa

Predictor	Estimate
ARMθ_t	.28688
TRADθ_t	.22770
RELAID$_t$	-.00089
GOVT$_t$	.07211

The equation for voting alignment direction for Africa suggests that, in this region, the potential exists for the United States to acquire and retain allies. U.S. strategies to increase trade with African nations, such as granting of "most favored nations" trading status or other incentives, are likely to increase these nations' tendencies to align politically with the United States. Moreover, a willingness on the part of the United States to sell armaments to African nations is likely to increase their political alignment with this country as opposed to the Soviet Union. Finally, increased levels of U.S. military and economic aid to the African countries will increase their tendencies to align politically with the United States.

It was noted in the introductory discussion of the African environment that, relative to the other two regions, superpower policies are generally impotent to alter the future African environment. The equation for voting alignment direction is the major exception to this general statement. This equation is the one area where both the United States and the Soviet Union, through variables that reflect either directly or indirectly their policies vis-a-vis the African nations, can affect the future course of political behavior of those African countries. Specifically, competition for allies in this region is likely to revolve around U.S. and Soviet trade, aid, and arms sales policies.

Voting Alignment Intensity

The only direct or indirect influence the United States and the Soviet Union have over the voting alignment intensity of the African nations (Table 18) centers on the willingness of the superpowers to sell armaments to the African nations and the terms of sale the superpowers are willing to offer. The simple correlation between voting alignment intensity (VOTR) and the tendency to purchase arms from the superpowers as opposed to other suppliers (ARMR) is positive. Nations that purchase arms from either the United States or the Soviet Union also tend to have a greater voting alignment intensity. Only when previous voting alignment intensity and change in per capita income are controlled does the partial relationship become negative.

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TABLE 18

Parameters for VOTR: Africa

Predictor	Estimate
$VOTR_{t-1}$	.91264
$ARMA_t$	-.02536
$\Delta GDP/POP_t$	-.00057

Previous levels of voting alignment intensity are by far the most potent
predictor of VOTR, and this, combined with the high correlation between
$VOTR_{t-1}$ and $ARMR_t$, produces the negative partial coefficient for $ARMR_t$ in
the equation. The negative partial relationship between voting alignment
intensity and changes in per capita wealth ($\Delta GDP/POP_t$) suggests that
increases in wealth allow these countries to act more independently of the
superpowers. This inference, combined with the relatively small effect of
$ARMR_t$ in the equation and the fact that measures of total propensity to
trade with and receive aid from the superpowers, suggests that neither the
United States nor the Soviet Union can generate substantial support for
the two superpowers by manipulating the policy variables included in these
models. Those policies can, however, affec the division of support between
the two superpowers, as was noted in discussion of the voting alignment
direction equation.[3]

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[3] The equations for voting alignment direction and voting alignment inten-
sity (VOT0 and VOTR respectively) were estimated for Africa and Latin
America together. This procedure was used because the within-region vari-
ance on the two dependent variables was insufficient to make any meaningful
discriminations among the countries; that is, most countries within a given
region had about the same score on the dependent variables. Combining the
regions permitted the between-region variance to discriminate among the
countries on the dependent variables, but also make inferences about within-
region differences in the forecast scores difficult. It simply was not
possible, however, to develop these equations on the basis of the very
minimal within-region variance found in Latin America and Africa.

Turmoil

There is considerable, although not apparent, similarity between the
turmoil equations for Latin America and Africa. (See Table 19.) The

TABLE 19

Parameters for TML: Africa

Predictor	Estimate
TML_{t-1}	1.1417
$COUP_{t-1}$	-2.3969
$DEFX/GDP_t$	13.5890

impact of past turmoil and defense spending as a percentage of GDP is
quite similar, except that the effect of past turmoil is greater in Africa
while the effect of $DEFX/GDP_t$ is greater in Latin America. Military aid
does not have the negative impact on turmoil in Africa that was found in
the Latin case. However, it has been noted that American and Soviet poli-
cies tend to be less potent in Africa than in the other two regions gen-
erally. The variable STRAIN does not have any impact on TML once DEFX/GDP,
a second measure of the concept strain, was controlled. In substantive
terms, it is not surprising that the variable STRAIN is impotent as a pre-
dictor of turmoil in Africa since the imbalances in political and social
versus economic development that STRAIN measures are simply not present in
Africa (mean value of STRAIN in Latin America is .53 in 1970 while the mean
value for Africa is -.50 in 1970). Hence, the development of social and
political infrastructure does not lead economic development as it does in
Latin America. In fact, in Africa economic development leads the develop-
ment of associated social and political infrastructures.

Finally, the coefficient for the $COUP_{t-1}$ predictor is negative in Africa.
This finding suggests an interesting difference in Latin versus African coups,
at least during the 1960's. Latin American coups can be characterized as
changes of leadership personnel within the context of established social,

political, and economic structures. Hence, demands for basic reforms were unmet by those leadership changes. The relatively new nations of Africa, on the other hand, experimented with alternative political, social, and economic structures and mechanisms during the 1960's. Coups in Africa resulted in more basic kinds of reforms and alleviated more demands than did coups in Latin America. The reduction in unmet demands in Africa is reflected by the fact that turmoil is lower after coups, whereas in Latin America turmoil is enhanced by coups.

Again note the relative impotence of the United States and the Soviet Union in affecting the domestic political environments of Africa. This is very different from the situation in the other two regions. Second, the nature of the relationship between coups and turmoil may change over the long term if social, political, and economic structures become rigid and changes of leadership are not accompanied by changes in the mechanisms for decision-making. Should this become the case and should the superpowers acquire more influence in the African region, the relationships between turmoil and other variables in the model are likely to evolve slowly toward the pattern of relationships observed in Latin America.

Coup Propensity

The coup propensity equation for Africa (Table 20) is also much like that for Latin America, except that military aid does not relate significantly

TABLE 20

Parameters for COUP: Africa

Predictor	Estimate
TML_t	.13618
$COUP_{t-1, t-5}$	.75102
$\Delta GDP/POP_t$	-.00044

to coup propensity in Africa. This finding is not surprising considering the overriding influence of aid on the development of military establishments in Latin America and its lesser effect in Africa. Military establishments are, of course, the source of most coups and attempted coups. In short, military aid does not create the kind of powerful and demanding defense bureaucracies capable of and likely to engage in coups in Africa that it does in Latin America.

As a result of the exclusion of the military aid variable, past coup propensities account for a greater proportion of the variance in coup propensities in Africa than they do in Latin America. Otherwise, even the size of the coefficients in this equation are similar to those found in the Latin American equation, with high turmoil levels predicting positively to high coup propensities and increasing per capita wealth dampening coup propensities as expectations are satisfied.

Conflict

Two differences between the Latin American and African conflict equations highlight some of the most interesting and important characteristics of the African environment. First, although resource constraints restrain conflict levels in both regions, in Africa that constraint is indirectly manifest through the defense spending equation. In the Latin American conflict equation the negative coefficient for the $DEFX/GDP_t$ predictor indicated that these nations impose an upper limit on the relative costs they are willing to pay to achieve foreign policy objectives via conflict behavior. (See Table 21.) In the African conflict equation that coefficient is positive, but resources act as a constraint on incremental increases in defense spending themselves.

Second, cooperative behavior from the two superpowers (COOP) intensifies existing conflict within Africa. This indicates that Africa is ripe for intense local conflicts among clients of the two superpowers. In short, rivalries between the United States and the Soviet Union can intensify

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TABLE 21

Parameters for CONF: Africa

Predictor	Estimate
CONF_{t-1}	.43046
DEFX/GDP_t	5.71700
COOP_t	.17066

conflicts among the African nations should those countries become clients of or depend in other ways upon one of the two superpowers. The impact of this localization of the superpower rivalries, of course, is most severe if the countries involved are highly militarized, as measured by the variable DEFX/GDP_t, and have an established tendency toward conflict proneness.

Summary

The discussions of the defense spending and military manpower equations for Africa noted that this region shares many of the unstable and explosive characteristics of the Middle East. There appear to be in Africa reinforcing positive-feedback relationships among defense spending, military manpower levels, conflict proneness, and, to a limited extent, major power interest. To this point, however, the ethnic and boundary disputes among the African countries and the escalatory nature of these linkages have not overcome the very real resource constraints that characterize the region. Hence, very intense rivalries, arms races, and conflicts have not yet developed. Should economic development significantly reduce those resource constraints or the two superpowers persistently penetrate the African environment, the linkages among these important variables suggest that Africa could experience as much conflict in the future as the Middle East does today. In short, should Africa develop as the Middle East has, it could be as conflict-prone as the Middle East appears to be now.

ABERRANT FINDINGS

The previous three sections of this chapter have discussed the character-
istics of the Middle Eastern, Latin American, and African environments as
they were uncovered in the empirical verification, or estimation, phase of
the study. In those sections, the general characteristics of the three
regions, at least as they appear in the equations, are discussed. From a
substantive standpoint, these general, region-wide characterization appear
quite plausible. However, there are some countries for which specific
equations produce implausible results. In this final section of Chapter 2
the more important of these aberrant cases are identified and discussed.
It is hoped that these discussions will assist in the interpretation of the
forecast results presented in Chapter 3.

The Middle East

It has been noted throughout this report that the Middle East is the most
unstable and volatile of the three regions under examination here. It comes
as no surprise, then, that this region exhibits more aberrant results than
do the other two regions. In general, these unexpected findings can be
attributed to two broad categories of research problems encountered in the
completion of this study. First, the Middle Eastern region is, in fact,
substantively unstable and volatile, and this general tendency is magnified
in the data used for this analysis by the peculiar and disruptive events
that have marked the last several years. In particular, that instability
is reflected in the existence of sharp and discontinuous changes in the
time series economic data for some of the countries in the region. The
general effect of these discontinuities was to inflate coefficient estimates
for the economic sector of the model for selected countries. The strategy
employed to correct for this effect was identical to that used to correct
for inflated estimates derived for pools of countries. Thus, these inflated
coefficients were adjusted downward into the confidence intervals for esti-
mates for countries with similar scores on the economic variables. In fact,
a number of alternative estimates meeting those criteria were tried, with
the final selection based upon the plausibility of the forecast outcomes.

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The second catagory of problems results from the fast that a limited amount of pooling was also necessary for the Middle Eastern countries. Specifically, most or all of the economic data were missing for Algeria, Syria, Tunisia, and Yemen. While the quantity of missing data for the Middle Eastern nations was substantially less than that for the African countries, it proved most difficult to pool these nations to obtain minimum variance on the forecast and predictor variables. As a result, estimates obtained for countries included in the pools were extremely inflated, and the existence of wide disparities among the countries of the region in terms of their values on the economic variables made it quite difficult to establish empirically based guidelines for adjusting those estimates. Again, a number of alternative adjustments were tried and the selection of estimates for inclusion in the final model was based to a large extent upon the plausibility of the resulting forecasts.

Given these types of research problems, the fact that there are very few Middle Eastern countries for whom the model produces unstable results is itself surprising. Two types of instabilities are evident in the model results. The first type is found in Kuwait, Syria, and Yemen. Syria shows an unrealistically high rate of growth in GDP and its components -- defense spending, consumption, investment, exports, and imports. Yemen, on the other hand, evidences a sharp decline in GDP and many of its compo-nents -- notably investment, defense spending, domestic government spending, and exports -- over the entire forecasting period (1976-1995). Note that these are two of the countries for which very little data were available. In fact, almost no data at all were available for Yemen. Clearly, the criteria employed for pooling and adjusting the resulting coefficients were not appropriate for these cases.

Kuwait also evidences a sharp decline in GDP, defense spending, imports, and exports throughout the forecasting period. In this case, however, the decline can be attributed to a substantive finding. Kuwait appears to have a very low propensity to invest. Thus, this nation, which pro-duces a single commodity -- petroleum -- is not using the proceeds from sales of that commodity for economic development to the extent that other

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oil-producing countries are. Should the low propensity to invest observed during the 1960-1970 period continue, it would not be at all surprising that Kuwait's GDP declines as its oil reserves decline. To presume that the decline evident in the forecasts is unrealistic, one would also have to assume that the propensity to invest assets from petroleum sales will increase.

The second type of instability in the Middle Eastern model is found in the Israeli economic sector. Essentially, Israel evidences a large, 10-year cycle in GDP, defense spending, consumption, domestic government spending, exports, and imports, and almost no secular growth on these variables. The initial estimates for Israel produce continuous exponential growth in the economic sector, and continuous adjustments of the coefficients downward decreased that growth until eventually exponential decline was observed. The coefficients used in the final model, even with their somewhat unrealistic results, appear to be the best of the wide range of alternatives tried. One should remember that the Israeli economy is, in fact, quite fragile. The nation has almost no natural resources, must retain a large portion of its labor force in military reserve, must "overspend" on defense and still rely upon outside assistance for maintaining its military capability at required levels, and must absorb a substantial number of immigrants on a continual basis. Thus, it is probably the case that the instability evidenced in the economic sector of the Israeli forecasting model reflects accurately conditions that country actually faces.

Finally, one should remember that the economic sector of the Middle Eastern model feeds into many of the military and political variables in the model. Thus, the kinds of instabilities observed above should be reflected to some extent in other, non-economic variables. However, the effects of these disturbances on other sectors of the model are quite minimal given their absolute size. This finding suggests that the set of equations for the Middle East, taken as a whole, is quite robust. These selected aberrations, in short, produce rather limited disturbances in the remainder of the model and thus do not necessarily detract from the value of most of the forecast results.

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Latin America

By implication, this report has suggested that Latin America is the
most stable of the three regions under study here. This observation is
reflected in an examination of the Latin American forecast results, which
show Panama as the only significant aberrant case. All components of
Panamanian GDP -- consumption, investment, domestic government spending,
exports, imports, and defense spending -- decline steadily during the
forecast period. Investment, domestic government spending, and exports,
in fact, actually reach a zero level during the forecast period. The
overall intensity of Panamanian alignment with the superpowers increases
drastically, a result of the linkage between economic growth and decreas-
ing reliance upon the United States and/or the Soviet Union observed in
Latin America. Turmoil does not increase steadily or substantially for
Panama, partly because military manpower levels increase steadily through-
out the forecast period. This last result demonstrates some of the
dynamic aspects of these models. A country is undergoing economic decline.
Therefore, mass and elite regime instability is expected. Military man-
power, which reflects the regime's coercive capabilities, grows to restrain
the expected increases in regime instability.

A careful examination of the data from which estimates for the Panamanian
economic sector were generated reveals no apparent cause for the unstable
set of resulting coefficients. In fact, a rather complete set of data was
available for Panama and the resulting estimates did not diverge greatly
from those obtained for other small Central American countries. Hence,
the study team was reluctant to adjust the coefficients arbitrarily in the
Panamanian economic sector simply because of resulting instability in the
forecasts.

There are some scenarios which lend credibility to these results. Panama
is presently trying to obtain greater control over the operation of the
Panama Canal and the revenues obtained from Canal operation. Many experts
have suggested that, contrary to Panamanian expectations, control over the

Canal may result in an economic drain on that country. Should this be
the case, and subsidies are not forthcoming from the United States or
other major powers, the Panamanian economy may deteriorate, although the
rate of decline evident in the model appears extreme. In any event, it
is difficult to imagine that the results for Panama generated by the Latin
American model are realistic, even if some slowdown or deterioration of
the Panamanian economy is plausible.

Africa

It has been noted repeatedly that the African region had substantially
more missing data than either Latin America or the Middle East, particu-
larly on the economic variables. Thus, the need to pool countries to
estimate coefficients and corresponding requirements to adjust the result-
ing estimates was most widespread in Africa. Considering these constraints,
the resulting coefficients produce surprisingly little instability in the
economic sector of the African model.

Two countries do exhibit more economic instability in the forecast results.
Nigeria, one of the largest and wealthiest of the African countries, shows
a forecast of zero investment for the later years of the forecasting period.
Although the Nigerian propensity to invest petroleum earnings is, like the
case of Kuwait, rather low, it seems unreasonable to presume that Nigerian
investment will actually decline to zero, particularly since domestic govern-
ment spending for that country does not grow substantially more than does
gross domestic product. It was noted earlier that some substitutability
exists between investment and domestic government spending; countries in
which the government exerts considerable control over the economy tend to
experience extensive governmental, as opposed to private, investment. This
phenomenon does not, however, appear to account for the Nigerian results.

The Ivory Coast shows considerably more economic instability than does
Nigeria. This country exhibits a rather steady secular decline in GDP
and all components of GDP and a rather extreme cyclical pattern in these

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economic variables. The Ivory Coast was estimated from a pool of countries, and numerous efforts were made to adjust the coefficients to obtain stable results. No stable coefficients could be found, however, employing the guidelines used for adjusting coefficients in the economic sector.

One other aspect of the African forecasts is noteworthy. Both of the variables used to represent internal instability -- turmoil (TML) and coup propensity (COUP) -- provide an extreme discrimination between nations expected to experience internal instability and those projected to be relatively free of instability. That is, nations expected to have high instability have very high turmoil scores and coup propensities of 1.0 while countries not forecast to experience instability have scores of zero on these variables. While the actual scores may appear unrealistic if used in a comparative framework to discriminate nations likely to have instability, the forecasts appear to be most useful.

SUMMARY

This chapter presented two types of information likely to be useful in interpreting the results of the forecasting models developed for the Middle East, Latin America, and Africa. The first type concerns the manner in which the substantive theory from which these models were developed was evidenced in each of the three regions. In that context, an effort was made to describe the key linkages found in each of the regions and to translate those linkages into a characterization of the dynamics of the forecast results. The second type of information concerns the aberrant cases or findings uncovered in the empirical verification phase of this research. In this second context, an effort was made to describe and explain aberrant findings and to suggest how forecasts for these selected nations might be interpreted.

CHAPTER 3. FORECAST SUMMARY FOR THE MIDDLE EAST, LATIN AMERICA, AND AFRICA

This chapter describes the projected Middle Eastern, Latin American, and African environments. The discussions deal with each region separately and are divided into six sections: background, economic factors, military factors, international alignment, conflict, and summary.

THE MIDDLE EAST

Background

The first region discussed is the Middle East (see Annex I for a list of countries) where some of the world's richest and poorest countries exist side by side. The Middle East is also the most capable of erupting into overt violence. Thus, any foreknowledge of trends and developments that can signal a worsening of relations or actual conflict is most useful.

Population.[1] The population projections for each less developed region are determined by applying a constant rate of change to current levels of population for each subsequent year. This approach is a standard forecasting technique for estimating the size of a nation's population over time. Because no less developed country has shown a population decline, it is assumed that a similar pattern will prevail in the future. Also, because the average rates of change for each region are slightly in excess of 3 percent, we can expect their total populations to approximately double in the 20-year period of the model.

In the Middle East, the average rate of population growth is 3 ˉ percent. This figure is distorted by Kuwait's rate of population growth which is

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[1] The forecasts deal with total population. This ignores both the existence of age and ethnic groups that can contribute to the military power base or can undermine national cohesion.

9.8 percent. When Kuwait is eliminated from the calculation of this average, the population growth rate reduces to 3.05 percent. Six nations in the region--Algeria, Egypt, Iran, Iraq, Morocco, and Sudan--begin with populations larger than 10 million in 1976. (See Annex VI.) Of this group, Algeria, Iran, and Iraq have population growth rates of 3 percent or more. By the end of the forecasting period (1995), only 5 of the 15 Middle Eastern countries remain below 10 million in total population, but no nation exceeds 62 million people, the projected population for Egypt.

It is important to contrast the population growth in the Arab nations with the population growth in Israel. If population can be interpreted as a resource that can contribute to military capability in less developed nations, then clearly the imbalance of power maintains itself in favor of the Arab nations. However, because it is the smaller nations that are contiguous to Israel--Egypt, of course, being the only exception--population becomes less important in the balance of power equation.[2] Nevertheless, throughout the forecasting period, the ratio of Egypt's population to Israel's remains consistently over 10 to 1.

Economic Factors

Domestic Economics. In interpreting forecasts for the economic sector of the Middle Eastern nations, it is more revealing to compare predictions for several nations than to simply look at each nation's individual values. It is also important to understand the interrelationships among the variables that forecast each national attribute. The manner used to estimate the parameters for the economic sectors for each region ensures that they are the most accurate of all the parameters in each

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[2] When resource power (population) and military power are investigated empirically the limited impact of population on military capability in the Middle East becomes apparent. This is because the Middle Eastern nations rely less on quantity (in terms of personnel) and more on quality (in terms of military hardware).

model.[3] But, in a region as diverse as the Middle East, a forecast based on excessive current growth will have a tendency to overestimate certain values. Thus, all results must be interpreted in comparative terms (see Chapter 1).

In judging the forecasts for the Middle East, one must always consider the impact of oil on the economies of the region.[4] Currently, virtually all of the wealth in the region is related to oil. Thus, total gross domestic product (GDP) is forecast to grow considerably for the oil producers. However, when one looks at GDP per capita, the picture changes considerably. At the beginning of the forecasting, Kuwait, Israel, and Libya lead the Middle Eastern nations in per capita GDP (see Figure 1). However, on the basis of the projected growth resulting from the influx of petro dollars, Iran and Saudi Arabia experience the greatest material per capita growth. This growth, however, has to be viewed in light of continued inflation and the possibility of reduced revenues as Western demands for petroleum products decline or oil production is cut.

Those countries with few resources that currently depend on the major oil exporters for financial support fail to show much progress. Their performance is in part a function of the effects of inflation, worsening balances of trade, and the failure to invest capital for growth. The nations that appear to suffer the most during the forecasting period, in that they fail to demonstrate any real potential for growth, are Algeria, Israel,[5] Jordan, Kuwait, Morocco, and Yemen. The failure to experience material growth can

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[3] The economic parameters are estimated on a country-by-country basis. Hence, they are country-specific rather than region-specific.

[4] For example, even the non-oil producing Middle Eastern countries (except Israel) benefit from oil export revenue. Saudi Arabian financial support for Syria, Lebanon, Egypt, and Jordan is an excellent case in point.

[5] Again, the diversion of domestic spending into defense must be cited as the cause of Israel's projected stagnation. The chances that Israel will permit such a long-term decline in its economic power are no doubt remote. The model suggests that tremendous levels of economic or military aid will be necessary to sustain the viability of the Israeli economy against the projected huge defense costs of the next two decades.
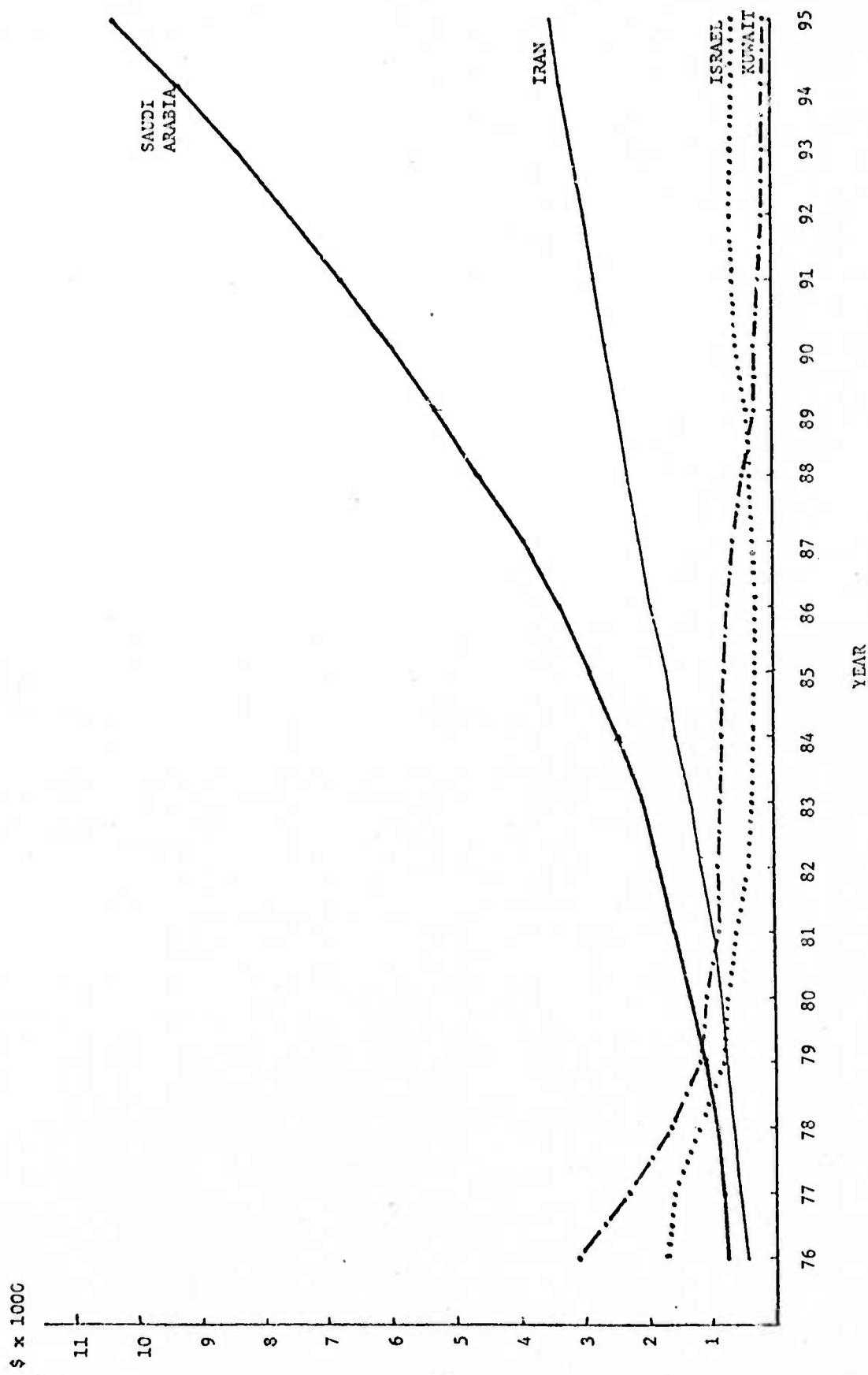
Figure 1. GDP/POP for The Middle East

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be a source of domestic unrest and political upheaval. The findings and forecasts on the domestic economic sector reveal that the conditions within the countries mentioned above may reach proportions that result in domestic violence.

International Economics. Only a few of the nations in the Middle East—Iran, Iraq, Kuwait, Libya, Saudi Arabia, and Syria—begin the forecasting period (1976) with a positive balance of trade. The only country failing to show a positive balance of trade by the end of the forecasting period is Israel, whose exports and imports eventually balance.[6] We alluded earlier to the potential for stagnation in the Israeli economy. It appears that partial explanation for this development is Israel's negative balance of trade. For the most part, the two major oil exporters in the region, Iran and Saudi Arabia, reveal accelerating export revenues. One other country that appears to demonstrate considerable growth potential is Syria. However, Syria's past conflicts result in large positive changes in military manpower and defense spending that no doubt would overly stress Syria's economy (see Figure 2). Thus, the economic projections for Syria must be viewed as reflecting the interaction of these pressures.

Military Factors

The past history of conflict in the Middle East has produced conditions that have resulted in per capita defense spending and military manpower levels that are the highest in the less developed regions. Ultimately in 1995, the final year of forecasting, only two nations (Iran and Kuwait) are spending less than 10 percent of their total GDP on defense. However, at the same time, the percentage of population in the military remains within acceptable levels that average around 5 percent. This suggests that the Middle Eastern nations will continue to emphasize the quality of their military establishments rather than the quantity of their manpower.

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[6] Israel's initial negative balance of trade steadily improves during the entire forecasting period from $662 to 0.
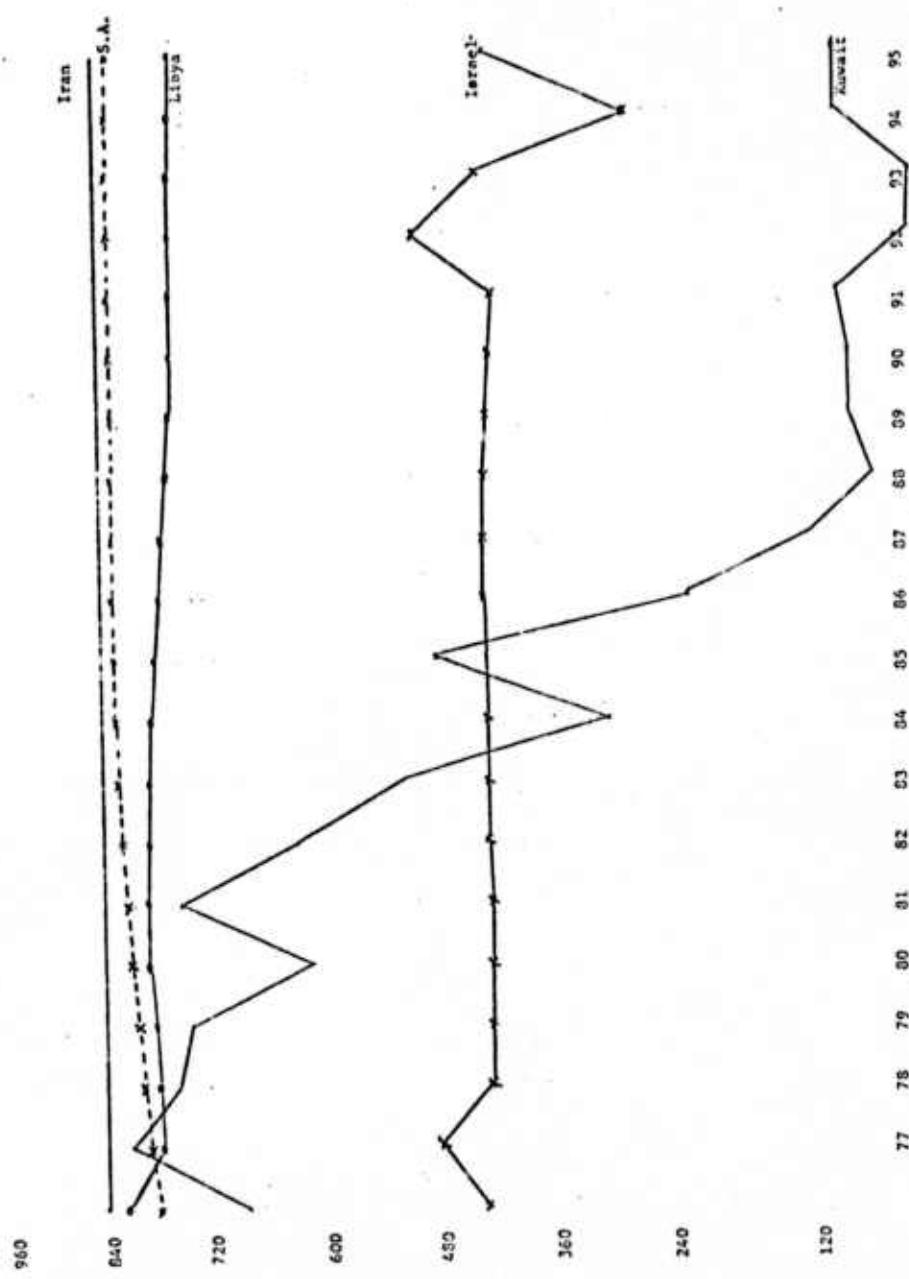
Figure 2. Forecasts of Alignment Instability

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The diversions of oil revenues into the military establishment of the
Arab nations is an ongoing process. Contemporary Iran, in particular,
is a case in point. Nations in the region will try to advance their mili-
taries to more sophisticated levels. Of course, should hostilities con-
tinue to plague the region, the level of sophistication of the militaries
in the Middle East becomes a serious issue. In the event of another war,
increased destruction and the involvement of nations outside the region
become increasingly probable.

Conflict in the Middle East is a function of the interaction among forces
such as high percentages of defense spending relative to GDP and the
intense interest of the United States and Soviet Union in the international
politics in the region.   The escalatory nature of arms races in the
Middle East results from past conflict, the notion that deterrence can
temporarily prevent conflict, and military assistance from the superpowers
to maintain current strength. These three components reinforce one another
to fuel conflict in the area. The nature of this interrelationship is dis-
cussed in Chapter 4, where a simulated arms reduction in the Middle East
is described. In short, the capabilities of the Middle Eastern nations
to engage in military conflict are projected to grow throughout the
next 20 years as a result of the expected potential for violence in the
region.

International Alignment

The Middle Eastern region presents an interesting contrast to Africa and
Latin America with regard to international alignment. Because they are
financially richer and are currently more politically involved in inter-
national relations, the nations in the Middle Eastern region tend to
function rather independently. They are aligned simultaneously with more
than one major nation or group of nations and seem to be increasing their
economic orientations toward the Soviet Union and away from the United
States. They are also increasingly involved in international economics

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as evidenced by their increasing propensity to trade. Of course, this development is explained by the growth in their economies (that makes them more attractive partners), a development that can be attributed to the importance of oil to the Middle East's overall growth.

With regard to political alignment, the Middle Eastern countries tend to vote with the Soviet Union in the United Nations. However, from the standpoint of the less developed nations, voting with the Soviet Union may be more coincidence than actual identification with the principles of the Soviet Union. The Soviet Union, often for purely political reasons, expresses its concern for issues that are salient to the Third World nations and votes accordingly.

The direction and intensity of alignment are important for the changes that take place over the forecasting period. First, countries in the Middle East continue to shift their political orientations toward the Soviet Union and away from the United States. However, the directional shifts that are evidenced in the forecast are not substantial. The propensity to align does shift some and the nations, in general, tend to become less involved in international political affairs.[7] Despite this development, the Middle Eastern countries tend to be more involved politically and economically and therefore their total alignment propensity is higher than that for either Latin America or Africa.

Only a few nations in the Middle East reveal consistently high alignment instability--Iran, Libya, Saudi Arabia, Iraq, and Syria.[8] Of this group, the first four countries are particularly significant because they are sources of oil consumed by the Western nations. Kuwait, initially incon- sistent in its alignment orientations, eventually resolves the imbalance

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[7] We interpret this development in the following way: As the richer nations in the region grow, they become less supportive of Third World issues. Hence, a tendency to become less involved with North-South issues is the result.

[8] Recently, reports of large oil reserves have added Iraq to the list of Arab countries with vast oil-exporting capabilities.

in Russia's favor. Instability occurs because the oil producers are economically oriented toward the Western industrialized nations but politically oriented toward the Soviet Union. The remaining nations in the region reveal stable alignment patterns and tend to be aligned with the Soviet Union. In most cases these are the poorer and less strategically significant nations of the region.

Conflict

International Conflict. The overall conflict levels forecast for the Middle East are the highest for the three regions. The conflict scores are a weighted average of three types of hostile behavior (pressure, coercion, and physical violence). Those nations with histories of overt violence, such as Israel and Egypt, should be viewed as having the greatest potential for such conflict. Egypt's conflict score remains the highest of all other nations in the region throughout the forecasting period, showing a minimal decline over time.

In general, the average level of conflict for all nations increases throughout the projected range. By 1995, the conflict levels of only four nations--Egypt, Iran, Saudi Arabia, and Syria--decline; but the reductions are minimal. Two nations, Kuwait and Tunisia, do not change at all. The five nations whose conflict levels increase the most from 1976 to 1995 are Israel, Jordan, Lebanon, Libya and Yemen.

Based on these projections, traditional rivalries should be expected to flare up periodically but point predictions of such incidences are, of course, not the goal of forecasting techniques. Thus, the high level of conflict forecast makes it imperative that the region be constantly monitored for international crises. (See Figure 3).

Domestic Conflict. The authoritarian nature of many of the regimes in the Middle East, the general tendency toward the involvement of the military in government, and the elitist nature of many of the societies and other cultural factors, contribute to moderate to low levels of popular political

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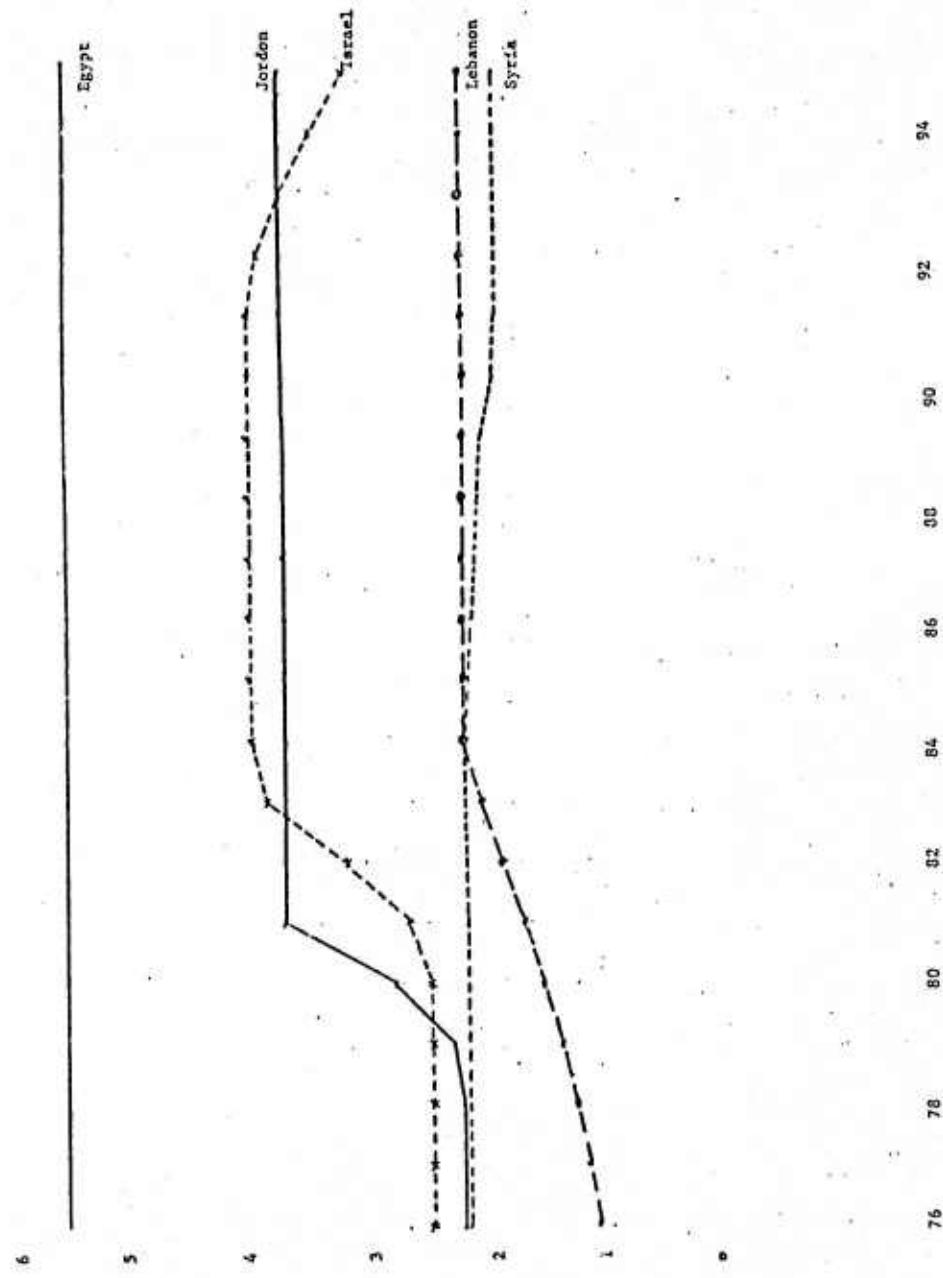
Figure 3. Forecasts of Conflict

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unrest in the region.[9] There is, however, a history of coups that has
resulted in the establishment of military regimes in the past. As in the
other regions, domestic politics and economics are positively linked such
that economic progress seems to lessen the tendency for domestic violence
that results in political upheaval, and vice versa. Because this region
has greater potential for material growth than the others, turmoil declines
throughout the forecasting period.

The increase in economic strains suggests that four countries--Israel,[10]
Jordan, Kuwait, and Yemen--will continually be candidates for government
change through coups d'etat. Jordan remains a candidate for a coup through
the late 1970's, but experiences a decline in coup probability in the
early 1990's and falls below the coup threshold throughout the remainder
of the forecast period. Yemen remains a candidate for government change
through 1985, but eventually ceases to have a high coup potential as a
result of some economic growth. Kuwait, on the other hand, remains a
candidate for domestic violence with turmoil and a high coup probability
throughout the entire forecasting period. Only one other country, Tunisia,
surpasses the coup probability threshold. However, Tunisia is a candidate
for only two years in the mid-1980's.

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[9] The current civil strike in Lebanon, because it represents conflict
between major political factors and borders on civil war, is not captured
by the forecasting model for the Middle East. The emphasis is placed on
mass instability (the "masses" in Lebanon have been little involved in the
current fighting) and on the probability of coups (elitist in-fighting).
Political civil war not involving riots and other mass violence is rare
in the Middle East, so the model was built to focus on other things.

[10] The appearance of Israel as a candidate for government change derives
from the imbalances between non-defense and defense spending that are
caused by the need for Israel to keep pace with its rivals. However,
Israel's strong democratic traditions and national cohesion suggest that,
despite conditions ideal for a coup, government change in the country will
continue to be orderly. That is, the conditions for a coup will be pre-
sent but the likelihood of one is considered low.

Summary

This section concludes with a summary table (Table 1) that recapitulates the forecasts generated by the Middle Eastern model. The table presents an overview of the more important results for selected nations and sums up the degree and direction of change forecast by the regional model to facilitate an evaluation of the overall country profiles. It also permits a comparison of the countries on particularly important economic, military, or political attributes. Finally, it allows the JCS/J-5 analyst to assess the overall significance, change, and expectations of each regional forecast.

In inspecting the table, the first step should be to analyze each country and to understand its general profile as forecast over time. Accordingly, each row of the table should be inspected individually. Next, each country should be compared with the other countries on the specific environmental descriptors by inspecting the columns of each table. Once these two steps have been completed, the overall interrelationships among the rows and columns can be better evaluated.

In the table, the country name and its rival are presented. Then, reading from left to right, changes in economic factors, military factors, information on international alignment, conflict probabilities, and a general assessment of the strategic importance of each country to the United States are presented. Each of these major categories is broken down into the key attributes of the nations that were discussed in the preceding section of the forecasts. Thus, economic factors refers to both the domestic economic characteristics and the international trading patterns of the individual nations. Military factors describes change in defense expenditures and military manpower. International alignment presents four specific types of orientation: alignment with the United States (US), alignment with the Soviet Union (USSR), non-alignment (NA), and multi-alignment (MA). This latter category refers to an orientation which suggests that a nation interacts to a rather high degree with several nations. The next category refers to the intensity of alignment or the extent to which a nation becomes involved in the international

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TABLE 1

STRATEGICALLY SIGNIFICANT MIDDLE EASTERN NATIONS

Country	Rival	Change in Economic Factors		Change in Military Factors		International Alignment			Conflict Probability			Strategic Importance (High = H, Medium = M, Low = L)
		Domestic	Internat'l	DEFX	MILM	Direction	Intensity	Instability	Internat'l	Domestic	Gov't Change	
Egypt	Israel	++	-	+	+	USSR	+	o	o	o	o	H
Iran	Iraq	++	++	o	o	MA	+	o	-	o	o	H
Iraq	Iran	+	+	+	o	USSR	+	-	+	o	o	M
Israel	Egypt	-	++	-	o	US	o	-	+	o	o	H
Lebanon	Israel	+	-	++	o	NA	o	-	+	o	+	M
Kuwait	Iraq	-	-	-	-	MA	+	-	o	+	o	M
Libya	Egypt	+	++	++	-	MA	+	o	+	-	+	M
Morocco	Algeria	o	-	++	-	MA	+	-	+	o	o	L
Saudi Arabia	Iraq	++	++	+	-	MA	+	o	o	o	o	H

KEY:
++ = High positive change
+ = Moderate positive change
o = No change
- = Moderate negative change
-- = Severe negative change
US = Aligned with U.S.
USSR = Aligned with USSR
MA = Multi-aligned
NA = Non-aligned

system. The third facet of alignment is the change in the instability of a nation's alignments. All Third World nations under study experience alignment instability at one time or another. The alignment instability column identifies the extent to which instability increases (+), remains the same (0), or decreases (-) during the forecast period.

The next category, conflict probability reveals the propensity for each nation identified either to engage in international conflict, or to experience domestic unrest and become a candidate for government change during the 20-year forecasting period. The final category, strategic importance, assesses the overall strategic significance of each of the nations included in the table. This assessment is a generalized evaluation based on the information presented, on the known importance of the nation to the United States or to the Soviet Union, and on a comparison of that nation's forecast future with current conditions.

The symbols employed in these tables identify the extent and direction of change over the full 20-year forecasting period. Thus, when rapid economic growth is forecast for a particular country, that nation will receive "double plus" evaluation (++). Nations experiencing severe declines in their domestic economies during the forecasting period would receive a "double minus" (--). These two categories represent the extremes of our coding scheme. All other evaluations fall between the double plus (++) and the double minus (--) range. It should be emphasized again that these symbols are used to indicate change and that the starting values for each country are not indicated.

The summary table for the Middle East gives a generalized impression of the forecast for each nation for all categories. Two countries in particular, Iran and Saudi Arabia, emerge as potential economic powers in the region. At the same time, Israel and Kuwait are forecast to suffer considerable economic declines over the 20-year forecasting period. The remaining countries fall somewhere in between these extremes. Since Iran retains rather stable military capabilities, it represents the most

economically potent and politically stable nation in the region. Other nations with potential for some military expansion are Libya, Egypt, Saudi Arabia, and Iraq.

However, any expansion will no doubt absorb much-needed development capital, producing tension between the economic and politico-military sectors. Nations with increasingly viable economies (for example, Iran and Saudi Arabia, two of the world's largest oil producers) will continue to become intensely aligned in the international system but will remain unstable in their alignment orientations. They will tend to orient their economic interests toward a number of countries (multi-alignment) and continue this pattern. Their political orientations, however, will remain toward Third World issues in the United Nations and will appear politically aligned with the Soviet Union.

Four nations in the region (Iraq, Israel, Libya, and Morocco) tend to be increasingly conflict-prone over the 20-year forecasting period. Based on Israel's economic forecast, propensity to conflict, and orientation to the United States, the future of its military appears less than secure. As projected, Israel will become less able to support a large military establishment and remains a candidate for military assistance from the United States. Unless such assistance is provided, the future economic and military viability of Israel is seriously threatened. In addition, although Kuwait reveals less of a propensity to conflict than Israel, its rival, Iraq, reveals an increasing probability. Iraq's economic and military future appears very shaky. The United States has already provided limited military assistance to Kuwait. Such assistance must continue if Kuwait's future defense against Iraq is to be bolstered. Again, as forecast, there seems to be little change projected in domestic violence and government change for the Middle East. Only Israel and Kuwait surpass the coup threshold. This development is explained purely by economic conditions and the propensity for irregular government change in the Middle East.

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LATIN AMERICA

Background

Population. Population growth in the Latin American region averages 3.08 percent with only two of the 21 countries below 2 percent (Argentina and Uruguay).[11] As a result of this high average population growth rate, the populations of the Latin American countries are projected to increase substantially over the 20-year forecasting period. In many cases, the populations of the larger countries are shown to double. Brazil and Mexico remain the two nations in the region with the largest populations throughout the forecasting period. In 1995 the population of Brazil approaches 200 million[12] while Mexico reaches 115 million.

Not one of the remaining nations in Central or South America is projected to exceed 50 million in 1995. Population has remained a problem in Latin America for many years and the high growth rate in the region shows few signs of declining. Rapid population growth has been cited as a source of poverty, justification for foreign conflict, political radicalism, and domestic unrest. Hence, unless substantial economic growth occurs, population growth will overshadow any material progress and the Latin American countries will, like Africa, experience economic stagnation.

Economic Factors

Domestic Economics. In the past, Latin American countries have experienced a wide range of economic progress from stagnation to accelerated development. Few of the Central American countries appear to be capable of significant economic progress either on past record or in the forecasts. The potential for continued development in South America appears

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[11] See Annex VI for the rates of change for individual nations.

[12] Brazil's population growth is in part intentional and based on the belief that population means power. This is not the case in Mexico, however.

to be rather well established. Growth is best evidenced by the degree
of change in gross domestic product per capita. Although Argentina begins
in 1976 with a per capita income of slightly over $1,000 and grows over
the 20-year period to more than $2,000 per capita (see Figure 4), Brazil
experiences an approximate growth rate of 300 percent (from about $500
per capita to about $1,500 per capita).

Of the three regions, Latin America appears to be the most capable of
continuing development. However, several South and Central American
nations—including Bolivia, Ecuador,[13] Paraguay, Peru, Uruguay, Cuba,
Guatemala, Honduras, Jamaica, Nicaragua, Panama—fail to show progress.
Although they are relatively small and apparently strategically insig-
nificant, their proximity to the United States, U.S. economic interests
in them, and their international political orientations make them impor-
tant. The absence of economic growth, due primarily to the continuing
high growth in population combined with the history of political unrest,
suggests a high level of domestic strife that is not conducive to the
maintenance of U.S. interests, be they involved with investment, foreign
aid, military aid, or international trade. Also, the projected Latin
American environment shows a potential for continued resentment of U.S.
presence that could become violent as in the past.

International Economics. Three important factors in international eco-
nomics are assessed in the forecasts: the direction of trade, the total
volume of trade, and the balance of trade between exports and imports.
In Latin America, the five largest traders are Argentina, Brazil, Mexico,
Venezuela, and the Dominican Republic (an island nation). Three other
countries that increase their trade significantly over the 20-year fore-
casting period are Chile, Colombia, and Peru. The majority of these

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[13] These results derive from the fact that the data used for generating
parameters for forecasting described Ecuador's economy prior to the expan-
sion of its oil industry. Conceivably, Ecuador could show some growth
over the 20-year period if oil revenues are wisely invested.
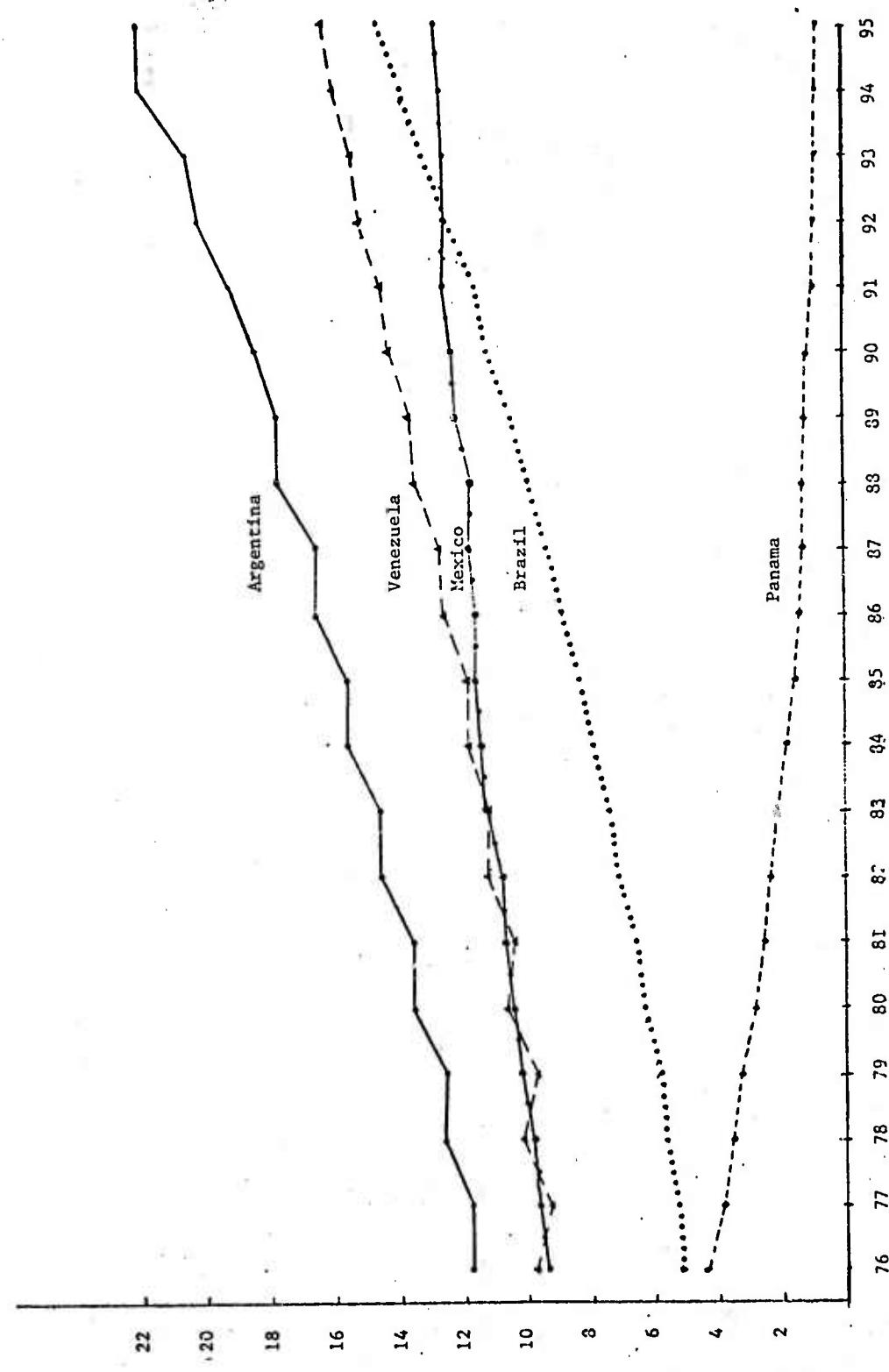
countries are almost entirely aligned in trade with the United States
and remain so during the 20-year forecasting period. Countries will
larger and more viable economies demonstrate moderate tendencies toward
maintaining greater autonomy from the United States. However, this pro-
pensity toward independence can be explained by their more established
economies that enable them to behave independently in international eco-
nomics.

Despite the large volume of total trade (imports plus exports) of some of
the Latin American countries, their international economic sectors are
less sound.[14] One way to evaluate the strength of a nation's interna-
tional sector is to look at the balance between exports and imports. Only
three countries in the region--Brazil, Mexico, and Venezuela--maintain
consistent and significant positive balances of trade. For the most part,
the remaining Latin American countries reveal slowly declining balances
of trade. The unfavorable domestic economic situations forecast for many
of the countries in the region, together with these unfavorable trade
balances, suggest that the United States will continue to be cited as
the cause of economic adversity in the region.

Military Factors

The size of the military establishments in the Latin American countries
and the amount of money spent to support them is small compared to many
worldwide averages. More revealing are the ratio of defense to domestic
spending, the change in military manpower from year to year, military
manpower to total population, and the percentage of the total gross
domestic product spent on defense. Much of the growth in the size of
the Latin American defense establishments can be attributed to the aid

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[14] Several reasons for this are often cited. First, at the present time,
the domestic economic situations in many countries make them less than
attractive trading partners. Second, tariffs are often imposed to pro-
tect infant industries. Third, many nations depend on primary products
and trade solely in those areas were they feel they have some comparative
advantage.

that they receive from the United States (see Chapter 2). Only Cuba presently receives aid from the Soviet Union. Of course, the largest Latin American countries maintain the largest armies in absolute terms. This means that Argentina, Brazil, and Mexico devote larger capital outlays to maintain their military establishments. However, because of their large populations, the percentage of the total population in the military is rather small. In addition, the growth potential modernizing capabilities of these countries in part explain their ability to develop indigenous arms industries that will result in less dependence on the United States for ordnance, arms, aircraft, and other sophisticated weaponry.

Many small Central and South American countries devote larger amounts of money to their own national security. In part, this projection is a function of the limited growth of their economies over the 20-year range-- as GDP growth slows, defense expenditure grows as a proportion of domestic spending (see Chapter 2). However, a trade-off between defense and non-defense spending necessarily exists. The smaller economies cannot divert monies from development to the acquisition of sophisticated hardware. Therefore, in order to defend themselves they spend less and compensate with military manpower. Thus, manpower growth can be forecast despite declining defense spending. And because the smaller economies cannot supply indigenous arms, they must rely on military assistance whereas Brazil and Mexico can maintain forces largely from their own resources.

International Alignment

As already mentioned, the Latin American countries trade extensively with the United States. However, this is only one dimension of international alignment under study. We are also concerned with the direction and intensity of political alignment in the regions, the extent each type is stabilized, and the total propensity of the less developed nations in each region to align with one superpower or the other. On political alignment, the distribution of votes in the United Nations for many less

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developed countries tends to follow a North-South orientation as opposed to East-West orientations.[15] Thus, alignment with the Soviet Union does not necessarily suggest that a less developed nation supports Soviet policies but that the Soviet Union tends to vote with the Third World nations on issues important to the less developed countries, anti-Western, and/or anti-United States. Thus, when a nation appears aligned with the Soviet Union in terms of its U.N. votes, it is revealing its North-South orientation. When the magnitude of its political alignment is high, it is revealing the degree to which it supports Third World issues.

Contrary to most less developed countries, most Latin American countries remain politically unaligned despite the tendency of most of the countries to be aligned economically with the United States. Several countries—Argentina, Mexico, Panama, Paraguay, Peru, and Uruguay—indicate a greater tendency to vote against the developed countries. Cuba, of course, reveals its support of the Soviet Union. Peru, a recent recipient of Soviet military hardware, reveals a tendency to become increasingly aligned in trade and aid with the Soviet Union. Uruguay, on the other hand, demonstrates an initial tendency to become increasingly aligned with the Soviet Union but begins to move back toward the United States in the later 1970's. Both Peru and Uruguay trade more with the Soviet Union. As a result, their projected economic alignment continues this tendency in the future. As constructed, the Latin American model permits this tendency to influence political orientations. Continued economic inroads into each of these nations by the Soviet Union could threaten U.S. interests in the region.

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[15] In general, East-West issues in the United Nations involve those international political questions on which the United States and the Soviet Union take opposite sides. North-South issues tend to be more economically relevant. Thus, North-South issues usually find the developed nations and the underdeveloped nations taking opposite sides, with the Soviet Union opting in favor of the less developed regions for purely ideological or political reasons. See Alker and Russett (1965: 229-233) for a discussion of the "coincidental" political orientations of the Soviet Union and many less developed nations.

The propensity to align in Latin America is rather high. However, there is a marked tendency toward alignment instability as well. Cuba appears to have increasingly unresolved incongruities in its alignment components (trade, aid, voting) which it will probably attempt to resolve. But increasing its trade with the Soviet Union will be extremely difficult. Perhaps the only way to eliminate this inconsistency is through rapprochement with the United States that will ultimately result in the support of U.S. positions in the United Nations.[16] Peru, on the other hand, maintains a balance between the two alignment instability components suggesting that it suffers little from unresolved alignment orientations. As forecast, Peru will remain oriented toward the Soviet Union and a potential antagonist to the United States.

Alignment instability in several other countries should be mentioned. Panama, often a candidate for government change, reveals the tendency to become increasingly unstable as the government becomes more broad-based. The fluctuations in its alignment correspond with government change because government type is a predictor of alignment in Latin America. Therefore, whenever a change occurs, the type of government is substituted into the equation. When voting alignment is predicted, the value reflects the change and it is captured by alignment instability. Brazil, Colombia, and Chile are consistently aligned with the United States both economically and politically. Because of their more developed economic and political systems, Latin American nations are more capable international actors who can assert their independence more as time passes. As their economics progress and their political institutions become more experienced, the relative freedom with which they can behave in the international arena will increase.

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[16] Cuba is consistently a candidate for government change on the basis of its high coup propensity. Both alignment instability and domestic turmoil could ultimately combine to resolve both inconsistency and popular unrest.

Conflict

International Conflict. As mentioned earlier, the projections of inter-
national conflict in the three less developed regions are based on each
nation's involvement in past conflict and a tension ratio that describes
the expected resources that a nation devotes to defense capability com-
pared to its total resource base. In Latin America, three countries--
Brazil, Mexico, and El Salvador--reveal moderate international conflict
scores.[17] Since the conflict data are monadic (that is, the values for
each country represent the total conflict of each nation), the conflict
projections reveal the more conflictual nations in each region. On the
basis of identification of key rivals, we suggest that the history of these
rivalries will prevail and that traditional "enemies" will be involved
in future conflicts (see Table 2, p. 106). Thus, conflicts between Brazil-
Argentina, El Salvador-Honduras, and Mexico-Guatemala may appear periodi-
cally through the 20-year projection period. Because they involve nations
in the Western Hemisphere, these conflicts are of concern to the United
States despite their relatively low intensities.

In Latin America, the tension ratio between resources expended on defense
and expected amounts (given the size of the nation's resource base) exceeds
the critical value in very few significant cases. The tension ratio for
Cuba and Panama reflects a tendency to conflict in the late 1970's but
declines in the later part of this forecast. Panama's conflict most
likely will involve the U.S. interest in the Canal. In the early 1980's
the tension ratio for Paraguay exhibits a high propensity to conflict.
This propensity fluctuates at high levels throughout the 1980's but
declines after 1990. If traditional rivalries are assumed most likely
to reignite, the 1980's should be a period of potential conflict between

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[17] The appearance of El Salvador can be attributed to its past conflict
with Honduras driving the famous "football" war. This isolated incident
should not be construed as indicative of bellicosity on El Salvador's
part. The conflict score is clearly a function of the reporting of infor-
mation and the aggregation of three types of conflict (physical violence,
coercion, and pressure). Thus, even a high score can consist of words,
diplomacy, protestations, and admonitions.

Paraguay and Argentina.[18] In the mid the late 1980's Costa Rica and
Colombia have temporary flare-ups in their tension ratios suggesting that
their traditional rivals--Panama and Venezuela, respectively--may become
involved.

On the whole, there is a limited tendency for international conflict
among members of the Latin American region. This is in part a function
of the absence of a history of violent conflict in that region resulting
from the very limited use of war to settle political differences.

Domestic Conflict. A variety of government types, remaining from very
traditionalist, elitist forms, such as in Haiti, to the more populist
and broad-based types found in Venezuela, Mexico, and Colombia exist
today in Latin America. However, the majority of governments are of the
elitist-mixed (part civilian, part military) variety.

In the past, Latin America has not been without domestic strife. Many
countries have experienced military coups as well as domestic unrest and
turmoil. For example, Argentina has experienced a high level of domestic
unrest for some time that erupts into nationwide strikes, urban guerrilla
activity, and popular demonstrations. There is little evidence in the
forecasts to suggest that the Latin American region will experience less
turmoil or elite instability than it has in the past. (See Figure 5.)

Because of the cross-sectional nature of the forecasting models, it is
unwise to treat the levels of turmoil or the probabilities of coups
d'etat as absolute values. However, it is possible to identify those
nations in the region that appear prone to domestic unrest. In Latin
America, turmoil is a function of past popular unrest and, to a large
extent, the proportion of total economic resources expended on defense.

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[18] Note that the sensitivity of the conflict between nations is not fore-
cast by the current models. The conflict projections are based on past
conflict plus domestic conditions that have been pressured for interna-
tional conflict in the past. Thus, the conflict between Argentina and
Paraguay may remain at the diplomatic level and never become violent.
Brazil would have a tendency to support Paraguay in such conflict.
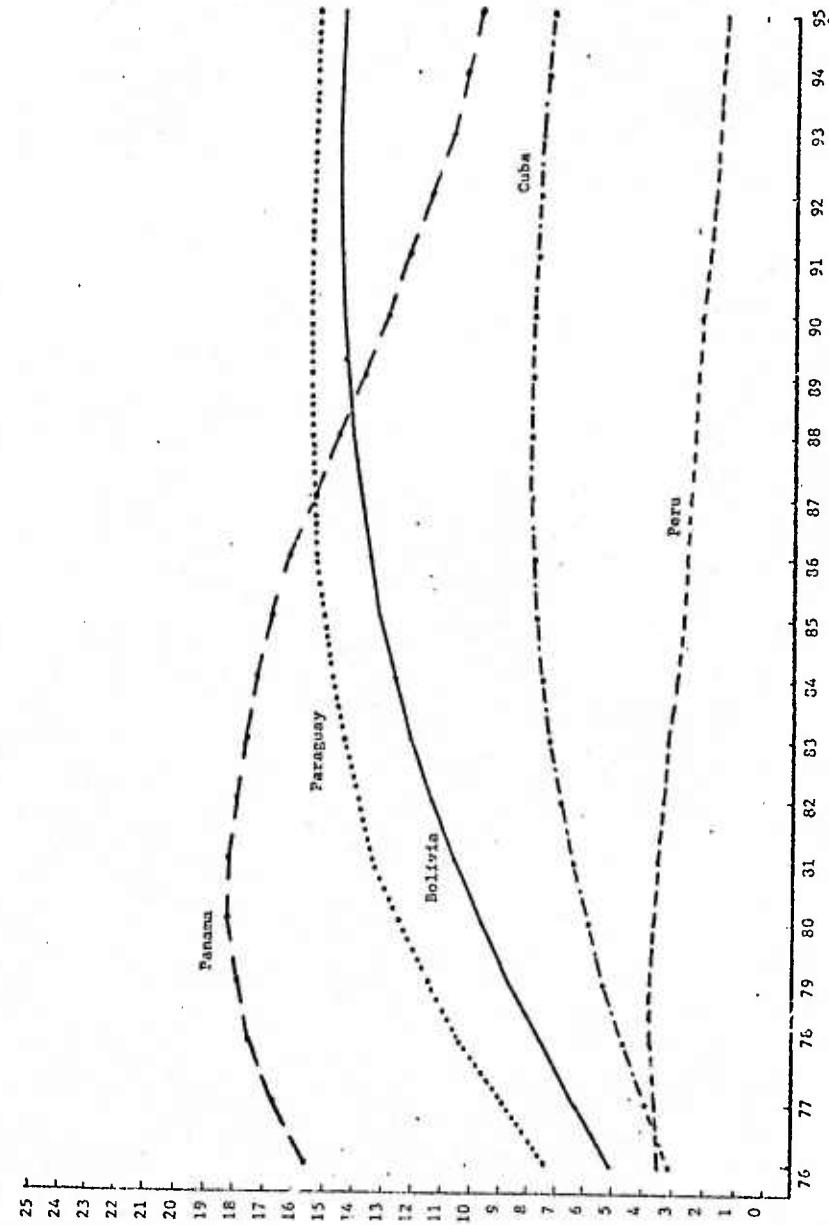
Figure 5. Forecasts of Turmoil

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(See Chapter 2.) Thus, when the Latin American nations reveal high defense spending, they also manifest high levels of turmoil. The causal linkage intrinsic to this relationship suggests that the failure to devote expenditures to development results in popular unrest and turmoil that, in turn, require extensive military establishments with suppressive capabilities. The nations in Latin America where this appears to be most prevalent are Bolivia, Cuba, Ecuador, Haiti, Jamaica, Paraguay, Uruguay, Panama, and Nicaragua.

The projections suggest that some of the larger, more important countries in the region will experience less domestic unrest than they reveal today. Two cases in point are Argentina and Brazil. Mexico, as one of the larger Latin American nations, also appears to reveal little turmoil. Panama, one of the smaller and more strategically important of the Latin American nations, because of the Panama Canal, exhibits the greatest potential for domestic turmoil throughout most of the forecasting period. Clearly, Panama has the greatest potential of all Latin American nations for disrupting the mobility of U.S. sea power and directly involving the United States. Of course, Panama's crucial role as a sea link makes imperative military and diplomatic efforts to resolve the Canal issue equitably.

Summary

This section concludes with a discussion of the strategically significant nations in Latin America. The country profiles for each nation included in Table 2 will be reviewed as forecast. Then, the developments forecast for the various nations will be compared.

The first development of interest for the Latin American nations is the apparent trade-off between economic development and military expansion. Two nations with a history of domestic unrest (Argentina, Chile) and Paraguay reveal that, as domestic economic progress is made, some of that development will be diverted to defense. In each instance, however, the bulk of this defense spending is likely to be for internal security.

Three nations--Brazil, Mexico, and Paraguay--experience both domestic and international economic improvements over time. However, only Brazil and Mexico reveal the kinds of economic stability (that is, balance between economic and military factors) that mark real economic development.

With regard to international alignment, most Latin American countries will remain economically aligned with the United States but will continue to support North-South issues in the United Nations. The single country with the capability to act as a multialigned nation is Brazil. However, as forecast, Brazil will attempt to bring its economic and political alignments into a better balance. Two nations in the region, Cuba and Peru, remain oriented toward the Soviet Union. At the same time, the two countries show a decreasing tendency to be involved in international relations, suggesting that they will become increasingly isolated in the region but more oriented toward the Soviet Union.

Table 2 indicates little possibility that overt conflict will occur between the Latin American nations. However, one particular triad (the traditional rivalry between Brazil, Argentina, and Paraguay) reveals a high probability toward international conflict, and the position of Paraguay between Brazil and its primary rival, Argentina, suggests that Paraguay may be eventually involved in any violence that might occur. Should this occur, Paraguay will be unable to resist any attempt by either nation to penetrate it. Both Brazil and Argentina are capable of support-in such efforts with indigenous arms industries.

The projections show four nations with increasing domestic conflict levels--Bolivia, Chile, Cuba, and Panama. The first three nations are clearly important to the United States. Should domestic instability in Cuba result in the overthrow of the Castro regime, more stabilized conditions in the Caribbean and in Central and South America could result. Second, the continuing turmoil in Panama is a constant threat to U.S. nations there and could disrupt negotiations on the future of the Canal.

TABLE 2

STRATEGICALLY SIGNIFICANT LATIN AMERICAN NATIONS

Country	Rival	Change in Economic Factors		Change in Military Factors		International Alignment		Instability	Conflict Probability		Gov't Change	Strategic Importance
		Domestic	Internat'l	DEFX	MILM	Direction	Intensity		Internat'l	Domestic		High = H Medium = M Low = L
Argentina	Brazil	+	-	+	+	US	+	0	0	0	0	M
Bolivia	Peru	0	++	++	+	US	-	0	0	+	+	M
Brazil	Argentina	++	++	-	-	MA	-	-	++	++	0	H
Chile	Peru	+	-	+	-	US	+	0	0	++	0	M
Cuba	Dom. Rep.	-	++	0	0	USSR	-	-	0	+	+	H
Mexico	Guatemala	+	++	0	0	US	0	0	+	0	0	M
Panama	Costa Rica	-	++	++	-	US	+	-	0	0	+	H
Paraguay	Argentina	+	-	0	0	USSR	-	0	0	-	0	M
Peru	Chile	0	-	0	0	US	-	-	0	-	0	M
Venezuela	Colombia	+	+	0	+	US	+	0	0	0	0	M

KEY:
++ = High positive change
+ = Moderate positive change
0 = No change
- = Moderate negative change
— = Severe negative change
US = Aligned with U.S.
USSR = Aligned with USSR
MA = Multi-aligned
NA = Non-aligned

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AFRICA

Background

Population. The African region presents an interesting contrast to the
Middle East and Latin America in that, in general, population growth rates
are not unusually high (that is, over 3 percent). In 1976, the first
year forecast, there are eight countries only with a population greater
than 10 million. Each of these has a population growth rate below 3
percent. Nigeria, the African nation with the largest population
(64 million in 1976), has grown to 102 million by 1995. The populations
of the remaining seven countries increase approximately one-third. One
of these, Zaire, with a population growth rate of 3.9 percent, increases
its population 100 percent in the 20-year period. The remainder of the
African countries manifest rather steady growth patterns.

Economic Factors

Domestic Economics. Economic stagnation has characterized Africa in gen-
eral for the past 15 years. Only a few countries, such as the Republic
of South Africa, Nigeria, Malagasy, and Zaire, reflect any significant
growth in GDP. However, when normed by population, GDP begins to reflect
considerable distributional inequality. For example, although Nigeria's
total GDP more than doubles between 1976 and 1995, its population also
increases approximately 67 percent. This means that the per capita income
in Nigeria fails to increase in any measurable amount beyond what would
be absorbed by inflation. Nigeria, which should be expected to grow
economically based on oil export potential, stagnates during the forecast
period. South Africa's GDP reflects about a 60 percent increase with
about a 60 percent increase in its population. Should inflation continue,
it appears that, despite these growth figures, the South African economy
will begin to stagnate. Smaller nations with some growth potential and
below average population growth rates do reveal economic progress. Never-
theless, most African nations remain the most economically underdeveloped.
(See Figure 6.)
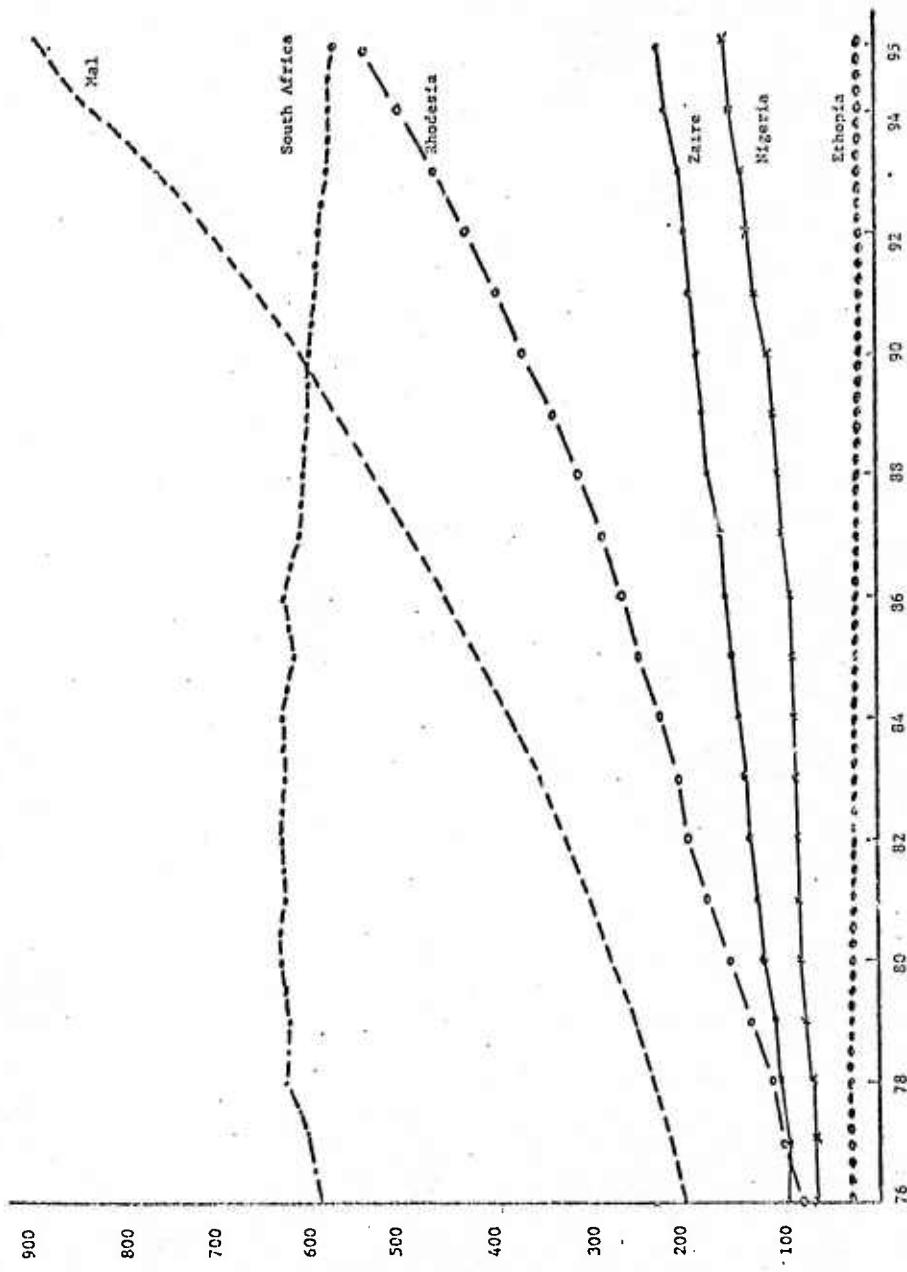
Figure 6. Forecasts of GDP per Capita

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Other countries, particularly those that receive either U.S. or Soviet aid, are worth examining. For example, Ethiopia clearly stagnates over the entire forecast period. Zaire does experience some growth in GDP, but most of that growth is absorbed by an almost 100 percent population increase. In fact, Zaire's progress, compared to most of the other African nations, is less than satisfactory.

Economic growth in Africa can be stimulated by economic or military aid received from either the United States or the Soviet Union. Military aid normally plays a positive role in development because of the economic infrastructural requirements that are made necessary by expandi g military establishments. This is also the case in Africa, but the amounts of aid must be substantial as Ethiopia's failure to grow suggests.

International Economics. Most of the African nations will continue to experience balance of payments problems. Coupled with stagnating domestic economies, internal domestic instability, food and population problems, inflation, and high levels of political instability, these problems suggest that the African nations will continue to be unattractive investment risks to the developed countries despite their valuable resources. The total amount that the African nations will trade in the future is projected to increase. However, because of inflation, balance of payments problems, and unstable domestic conditions, no African nation appears to have momentum to move from a transitional to a semi-industrialized status. These results suggest that the ability of the African nations to absorb U.S. consumer and capital goods will be limited. From a military perspective, the results suggest that these combined pressures will eventually manifest themselves in intermittent domestic and international violence as the nations compete to secure economic benefits.

Military Factors

Reinforcing relationships exist among defense spending, military manpower, and conflict in Africa. Defense spending is constrained by the availability of total financial resources. Thus, demands for non-defense

development spending compete with military and security interests. As forecast, the defense spending of most of the African nations declines significantly during the 1976-1995 period. At the same time, past conflicts influence growth in the size of the African militaries. Finally, a limited contribution to the overall defense capabilities of the African nations is made by military aid from the superpowers. This further indicates the impact of non-indigenous forces operating on military power bases of the African nations. Thus, some positive role is played by foreign military assistance, and military aid may be instrumental in upgrading and modernizing contemporary African militaries.

In Africa, the projected conflict during the forecast period incites military manpower growth in most of the Black African nations and Rhodesia. Thus, as conflicts are resolved, growth in manpower should also decline. For many countries the bulk of the growth in the size of the African militaries occurs during the earlier forecasting period when conflict is high (1975 to 1983). After this period, conflict returns to its original range and military manpower responds accordingly.

Three nations--Ethiopia, Nigeria, and Zaire--begin the forecasting period with military manpower levels above 1 million. However, Guinea, Somalia, and Zaire reveal the highest per capita manpower ratios (8, 8, and 6 percent, respectively). By the end of the forecasting period, the percentage of each country's population in the military attains a maximum of 10 percent except Zaire. Finally, although Tanzania's manpower-to-population ratio stays around 2 percent, its military population doubles by 1995 to over 1 million. (See Figures 7 and 8.)

Defense spending reacts to the projected economic stagnation in the region. Defense spending-to-GDP ratios consistently decline so that, by 1995, all nations' ratios are below 7 percent. Clearly, this pattern suggests that, although all of the conditions stimulating manpower growth exist (that is, conflict, continuing moderate aid), economic constraints will force manpower levels to be adjusted downward.

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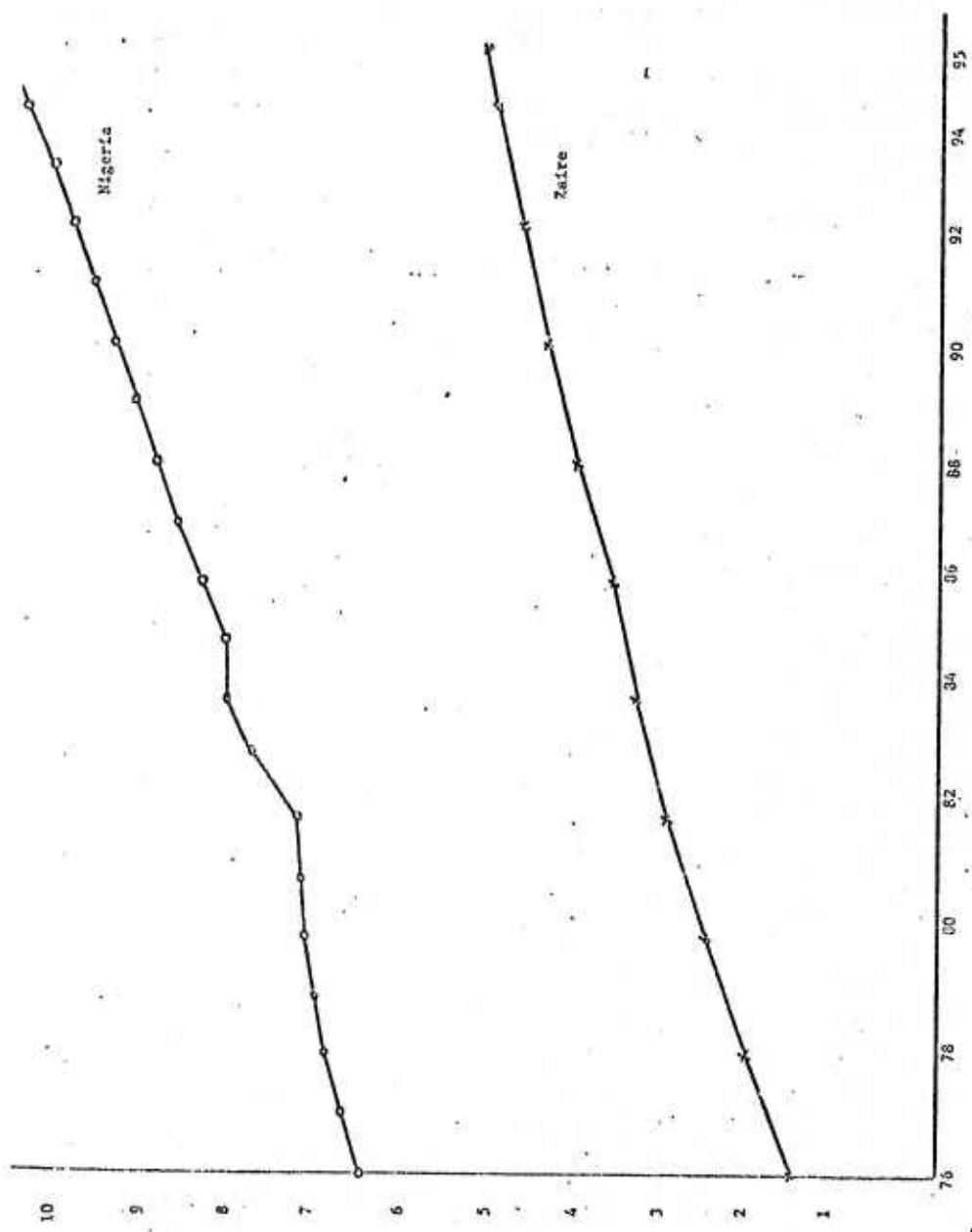
Figure 7. Forecasts of Military Manpower for Nigeria and Zaire

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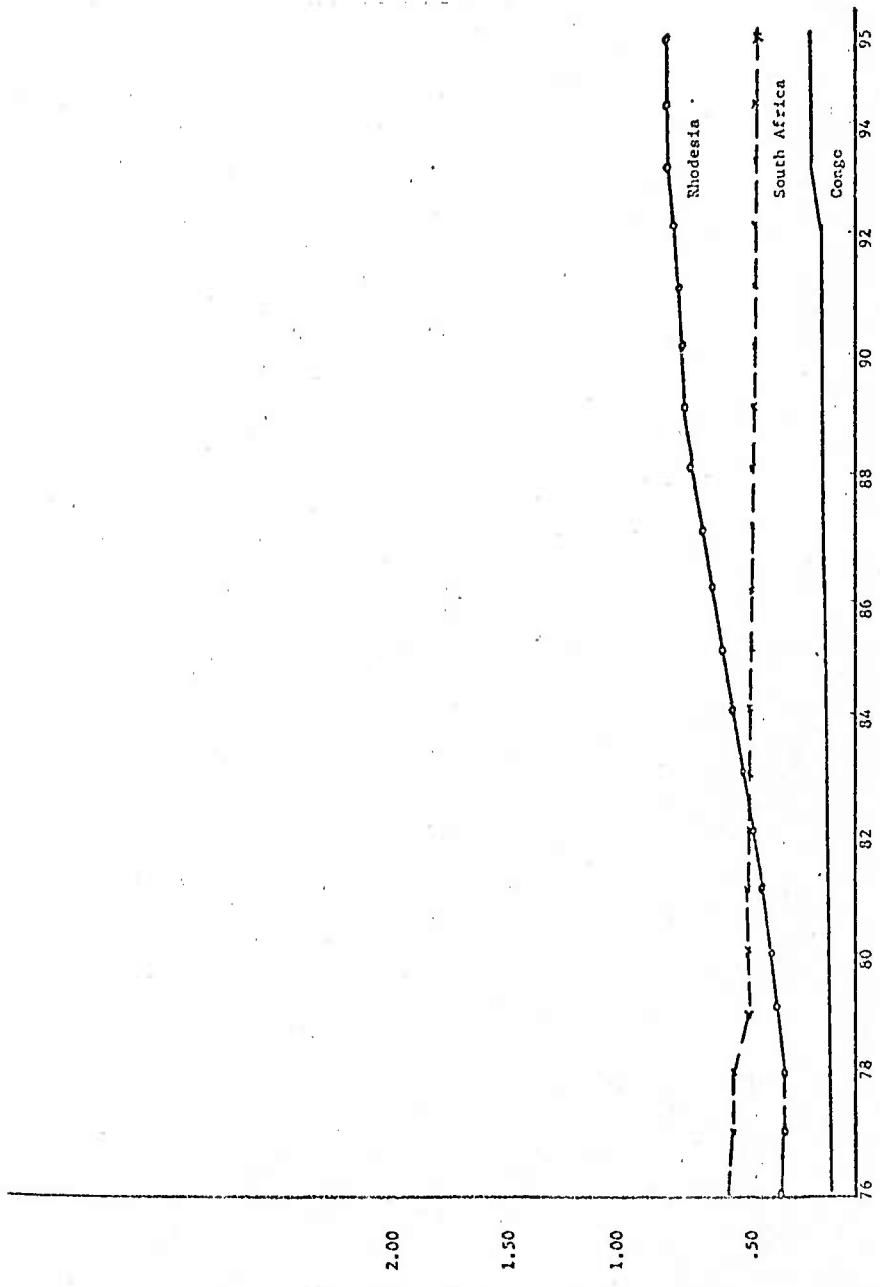
Figure 8. Forecasts of Military Manpower for Rhodesia, South Africa, and the Congo

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The declining capability of the African nations to support their military establishments financially suggests that requests for military assistance will continue. Given existing legislative constraints on U.S. military aid to Africa, and pending legislation on limitations on arms sales, the developing situation in Africa should become increasingly attractive for more Soviet and Chinese penetration into this region through military assistance.

International Alignment

The majority of the African nations exhibit a tendency toward non-alignment. Since our measures of international alignment attempt to capture the tendency to align with either the United States or Soviet Union, this conclusion suggests that the African nations choose to avoid Cold War issues. Additionally, the economic and international political behavior of the African nations tends to be unbalanced. Thus, countries are rarely strictly aligned in both trade and U.N. voting. Alignment in the United Nations with the Soviet Union by the African countries is assumed to be, in part, a function of Russian support for Third World causes--a form of behavior with purely political overtones.

Very few African nations tend to become involved in international relations. Based on the economic situation in many of these countries, their governments are likely to be preoccupied with domestic concerns. At the same time, it should be reiterated that the forecasting model, and the alignment indicators in particular, capture directly only alignment with the United States and the Soviet Union. African colonial histories have locked the region into trading patterns that are difficult to escape. Most African nations continue to trade with their former metropolitan (primarily European) countries.[19] Thus, it is in the U.S.

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[19] For additional empirical support for this finding see Deutsch and Eckstein (1961), Deutsch, Bliss, and Eckstein (1962) and McIlroy (1974: Chapter 3).

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interest to be aware of those nations that demonstrate considerable align-
ment instability and a propensity to become involved in international
relations. This is because anti-European activity that may indirectly
involve or implicate the United States is highly possible in the more
volatile nations.

The People's Republic of the Congo, Guinea, Mali, Nigeria, Ghana, Somalia,
and Uganda all have unstable alignment patterns. Of this group, three
nations are of particular interest. Guinea is important because its
alignment orientation remains unstable throughout the entire forecasting
period, despite the presence of Soviet technical assistance to that
country (Brown, 1975: 158). Nigeria also remains unstable throughout
the forecasting period. Of course, because of its natural resources,
particularly oil, Nigeria's alignment instability is important. Finally,
Somalia, whose acceptance of Soviet aid is already well documented, also
reveals considerable alignment instability during the forecasting period.
Those nations that are of particular interest to the United States
because they are recipients of military aid--Ethiopia, Liberia, and
Zaire--demonstrate rather stable alignment orientations.

Conflict

Internatjonal Conflict. Through the forecasting period, four African
nations (Ethiopia, Gambia, Guinea, Ivory Coast) demonstrate high levels
of international conflict. No other country exhibits a tendency for as
much conflict during the 20-year period as any of these four countries.
Of this group, Guinea and the Ivory Coast are historical rivals. Thus,
one should expect continued tension between them. Ethiopia and Somalia
have histories of conflict as do Nigeria and Ghana.

In Africa, as opposed to Latin America or the Middle East, conflict is
forecast regardless of the size of the tension ratio. Thus, the tension
ratio is a poor predictor of conflict in Africa. This result may occur
because most international conflict in Africa results from ethnic or

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tribal conflict as opposed to international political confrontations that would require mobilizing the public. Thus, when such conflicts arise the diversion of domestic resources to defense is less than would occur in Latin America or the Middle East.

Domestic Conflict. Although certain countries are of little economic or military value, they may be of considerable importance as political friends or enemies. Many of these countries, however, are of little strategic value to the United States or the Soviet Union per se. But, as regimes change so do political and ideological alignments of nations.

As discussed earlier, political domestic instability is measured by a coup propensity index and a measure of turmoil. Both of these variables are monitored as the forecasting progresses from one year to the next. When a country exceeds the coup threshold, it becomes a candidate for government change. Of the total number of countries that appear to experience government change during the 20-year forecasting period, the African nations are the largest group represented (20 out of 33). Of this group, all are recipients of some U.S. economic aid (in the base year, 1970) except for the People's Republic of the Congo, Rhodesia, and Zambia. Three (Ethiopia, Liberia, and Zaire) receive U.S. military assistance.

There is little evidence that the level of political unrest will decrease in these countries. Of those with particular strategic importance (either as sources of strategic materials or for geographic reasons), Rhodesia, Somalia, Zaire, and Nigeria appear to be particularly coup-prone. Because of the U.S. interests (economic, military, and political) in all the African countries, political instability poses particular problems for the maintenance of those interests and the protection of American lives in these turbulent areas.

Summary

Table 3 presents the forecast results for 12 strategically signifi-
cant African nations. The results of the economic forecasts suggest that
little progress will be realized in the African region over the next
20 years. In fact, most countries are expected to stagnate or degen-
erate economically. The absence of economic resources clearly impacts
on the military sectors such that defense spending increases in only
Ethiopia and Somalia. Thus, augmenting existing armies with mili-
tary manpower seems to be the only way the nations can maintain their
defense capabilities. It appears that nations in Africa cannot support a
growing military establishment without some form of military assistance.

That assistance ceilings have been imposed on aid to the African nations
means that any increase in military assistance to Africa will most likely
go to those nations already supported (Liberia, Ethiopia, and Zaire) by
the United States. Any additional influx of aid will necessarily come
from Europe, the Soviet Union, or the People's Republic of China. Both
China and the Soviet Union have demonstrated an interest in the region
and future penetration by these two superpowers is likely in Africa.
One additional condition that suggests the viability of this conclusion
is that most African nations continue to be non-aligned throughout the
forecast. Only three nations, Guinea, Ivory Coast, and the Republic
of South Africa (hardly a typical Sub-Saharan nation), exhibit increased
involvement in international relations beyond their current levels. All
of the other African nations included in the chart tend to become increas-
ingly isolated from international politics and economics.

Three international conflict dyads (People's Republic of the Congo-Zaire,
Ethiopia-Somalia, Guinea-Ivory Coast) are particularly interesting. There
are several international and domestic conditions that impinge on each
dyad throughout the forecasting period. First, at least one member of
each dyad experiences domestic and economic progress during the forecasting
range. For example, although defense expenditures for both Ethiopia and
Somalia increase, only Somalia will be able to afford such expenditures.

TABLE 3

STRATEGICALLY SIGNIFICANT AFRICAN NATIONS

Country	Rival	Change in Economic Factors		Change in Military Factors			International Alignment		Conflict Probability		Gov't Change	Strategic Importance (High = H, Medium = M, Low = L)
		Domestic	Internat'l	DEFX	MILM	Direction	Intensity	Instability	Internat'l	Domestic		
People's Rep. of Congo	Zaire	0	0	–	++	NA	–	+	+	++	+	H
Ethiopia	Somalia	–	–	+	++	NA	–	+	0	++	+	H
Ghana	Nigeria	0	–	0	0	NA	–	+	0	0	0	L
Guinea	Ivory Coast	+	0	0	+	NA	+	–	0	0	+	H
Ivory Coast	Guinea	0	–	0	++	NA	++	–	+	0	+	H
Kenya	Somalia	0	–	0	0	NA	–	–	0	+	+	H
Liberia	NONE	0	0	0	++	NA	–	+	0	++	+	L
Nigeria	Ghana	0	–	–	+	NA	–	0	–	–	+	M
Rhodesia	Tanzania	–	–	0	+	NA	+	+	+	0	+	H
Somalia	Ethiopia	++	0	+	0	US	0	+	+	+	+	M
Rep. of South Africa	Tanzania	0	–	0	0	NA	0	0	0	0	0	H
Zaire		+	++	–	++	NA	–	0	–	++	+	H

KEY:
++ = High positive change
+ = Moderate positive change
0 = No change
– = Moderate negative change
— = Severe negative change
US = Aligned with U.S.
USSR = Aligned with USSR
MA = Multi-aligned
NA = Non-aligned

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Second, military manpower increases for at least one member of each dyad during the forecasting period. Third, at least one member of each dyad reveals an increased propensity to conflict with its former rival. Fourth, every country experiences increasing levels of domestic conflict and all, at one time or another, become candidates for government change. Finally, either the United States or the Soviet Union is influential in one or the other member of each dyad. The Soviet Union has an ideological foothold in the People's Republic of the Congo while the United States provided foreign aid to Zaire. The United States supports Ethiopia in a similar fashion and at the same time supports the communication facility at Asmara in Ethiopia. The Soviet Union's ongoing support to Somalia's military infrastructure has been well documented. In the third dyad, the Soviet Union has been providing similar support in Guinea and has basing rights. Thus, because of the interests of the superpowers and the domestic and international conditions that are projected for the six countries, all contribute to the potential for superpower involvement in African crises.

SUMMARY

This chapter has reviewed the standard forecasts for the three less developed regions, the Middle East, Latin America, and Africa. Each regional subsection was divided into six parts: background, economic factors, military factors, international alignment, conflict, and summary. Each section discussed the long-range forecast for each region for future domestic political and economic situations. International relations of the key countries in each region, such as international trade, international alignment, and international conflict, were also discussed. These discussions of the future environments of each region suggest the following points.

- The Middle East will remain the most volatile area of the three studied. Accelerated economic growth will be experienced by some of the larger nations but many of the smaller nations will remain stagnant and underdeveloped. Economically, the oil-exporting nations have the greatest potential for rapid economic growth if deliberate policies

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to reduce Western oil dependency do not disrupt progress.
Regarding conflict, the area will continue to experience
hostilities among all actors in the region in the future.
Traditional Arab rivalries invariably will reignite as
well as the conflicts between Israel and its neighbors.
The nations in the region demonstrate, and will continue
to demonstrate, a propensity to align themselves with
either superpower. Those that are unstable in their align-
ment are invariably the actors whose economic sectors
attract them to the Western world for imports and exports.
However, their political orientations remain with the
Third World, specifically with regard to North-South issues
that involve the international division of labor and the
plight of the less developed nations.

o The long-range forecast for Latin America reveals con-
   siderable potential for all and accelerated economic growth
   in only the larger nations such as Argentina, Brazil,
   and Mexico. The tendency for continued alignment with
   the United States remains high with only a few nations
   behaving as independent actors. Some of the smaller
   nations such as Cuba, Panama, and Bolivia will experi-
   ence continuing high levels of domestic instability.
   Little international conflict is forecast except for
   those nations (Brazil, Mexico) that have experienced
   hostilities in the past.

o The forecast for Africa reveals that the region will
   remain economically stagnant. Domestic politics will
   remain turbulent and many of the nations in the region
   will remain candidates for government change. Interna-
   tional conflict levels will remain moderate. And many
   of the nations, including those in which the United
   States has vested strategic interest, will remain
   unaligned with either superpower.

CHAPTER 4.   SIMULATED U.S. AND SOVIET POLICY IMPACTS

As noted repeatedly in this report, there are two basic uses for these
forecasting models of the Middle East, Latin America, and Africa.   The
first use is to identify areas where threats to U.S. national interests
are likely to emerge during the mid- to long-range future and to specify
the nature and extent of those threats.   The second use is to assess
whether and/or how major actors can influence those threats or alter
their impact on U.S. interests.   The previous chapter of this Technical
Appendix described expectations about the Middle Eastern, Latin Ameri-
can, and African environments generated from these models.   That section
identified significant, aberrant, and threatening aspects of these envi-
ronments from the standpoint of U.S. national interests which can be
inferred from the results of a "standard forecast."   In this context, a
standard forecast assumes that the aspects of U.S. and Soviet policy
explicitly included in the models as exogenous predictors -- namely, eco-
nomic and military aid, arms sales, cooperative diplomatic behavior, and
Soviet policy on whether or not to trade with a nation -- remain unchanged
over the forecast period.   From a programming standpoint, these variables
are treated as constants for all iterations of the model.

The models also include a capability to alter the values of these policy
variables for the nations included in the study for any set of years dur-
ing the forecast period.   Thus, once threatening aspects of the environ-
ments are identified, the effects of alternative U.S. and Soviet policies
on those threats and also for side impacts can be assessed.   This capa-
bility permits JCS/J-5 and other user analysts to determine if and how
the United States can take actions, either now or at any point during
the forecast period, to eliminate threatening aspects of the environ-
ments of these regions or reduce the impact of those threats on U.S.
national interests.   This section of the report describes, by example,
how that capability can be used on an operational basis.   First, the

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substantive basis of the policy alternatives investigated in this example simulation are described and the means for transforming these substantive policy alternatives into operational effects within the model are identified. Then, the resulting forecasts are compared with the standard forecast, described in Chapter 3 of this volume, to infer the effects of the particular policy alternatives investigated here.

OPERATIONAL IMPLEMENTATION OF THE SIMULATIONS

The simulation capability in the Latin American, Middle Eastern, and African models is regulated by the value of the variable KODE, read into the program at the initiation of a run according to format 810 (see Annex III). If the value of KODE is set to 0, actual 1970 values for the variables representing U.S. and Soviet policies, read in according to format 816, will be used for each iteration of the model. The number of model iterations is controlled by the value of the variable NYEAR, also read in format 810. To bypass the simulation capability, then, the user simply sets the value of KODE to 0.

The first step in employing this simulation capability is to set the value of the variable KODE to anything but 0, remembering that KODE is formatted as an integer variable. Thus, if KODE were 1 or 2 or 10 or -3, the simulation capability would be activated. Then, the user must place (NYEAR - 1) decks containing the values of the policy variables for the second through the NYEARth iteration of the model at the end of the combined program and data deck. The user can change the values of any of the variables included in this deck for any countries for any years he desires, so long as the format (format 816) is followed. With these two steps, the user has activated the simulation capability and the program will take over and update the policy variable values for each model iteration. Table 1 shows the changes to the computer program required to activate the simulation capability.

TABLE 24

Steps to Activate Simulation

1. Set KODE (column 6, first data card) to some integer value other than zero.

2. Check value of NYEAR (columns 3-4, first data card)

3. Place (NYEAR - 1) copies of deck containing U.S. and Soviet policy variables (see Annex V) after final parameter card. Change any of these policy variables desired for any years desired. The first of those decks is for the year 1972. Follow format 816 in inserting new values for these variables.

ALTERNATIVE POLICIES INVESTIGATED

This section describes substantively the specific policy alternatives investigated in each region in this example simulation. The fact that particular alternatives are used for this example is not meant to imply that they are viewed as likely to occur. Rather, we have selected policy alternatives based upon a number of criteria: that they are plausible, that they focus on countries and/or variables of particular interest to JCS/J-5, and that they illustrate some of the more interesting and policy-relevant linkages among variables included within the model.

The Middle East

The policy shifts simulated in the Middle East start from two basic assumptions. First, in light of the progress currently being made on the removal of the Israeli presence from the Sinai, we assume that tension between Egypt and Israel will be reduced. Second, reduced tension between the United States and the Soviet Union and progress on strategic arms limitations are also assumed to continue. These two conditions set the stage for a U.S.-Soviet agreement to cut military aid and arms sales to conflictors within the region: Egypt, Israel, Syria, Jordan, Libya, Lebanon, and Iraq. These seven countries were selected because they have a past history of high conflict levels, are recipients of

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rather substantial amounts of military aid from the United States and/
or the Soviet Union, and are purchasers of arms from one or both of the
superpowers.

Specifically, levels of military aid and arms sales from the United
States and the Soviet Union to these seven countries were reduced by 50
percent in 1976 (reduced by 50 percent from their 1970 base year levels).
Then, in 1977, the amount of aid and arms sales to these nations was
reduced another 50 percent (to 25 percent of the 1970 base year levels).
Subsequent to this change, aid levels and arms sales levels were left at
25 percent of the base year amounts for the remainder of the forecast
period.

Most of our expectations about the effect of manipulation of the mili-
tary aid and arms sales variables materialize. However, there are some
interesting and unexpected findings. First, the impact of reduced mili-
tary assistance is felt most in the economies of those nations presently
receiving large amounts of military aid from either superpower. The fore-
casts for those nations that receive small amounts of aid remain virtually
unchanged. Thus, nations that depend on large amounts of aid to support
their defense establishments suffer the most economically when aid is
terminated.

In addition to affecting levels of GDP and defense spending, military
aid and arms sales reductions constrain economic growth rates. Reducing
aid and sales not only limits growth but also limits potential economic
stagnation. Defense spending is affected in much the same way. When
the economic sector suffers as a result of reduced military assistance,
the international trading sector is also affected. The size of a nation's
economy drives the international economic sector so that a decline or
limitation on the domestic economy will make a nation a less attractive
trading partner. The interactive relationships between trade and the
domestic economy can cause reinforcing negative declines in each sector.

When economic conditions deteriorate, nations become candidates for higher turmoil. Moreover, when aid is reduced the level of turmoil in the region directly increases. An addition to the candidates for government change is Jordan, whose turmoil level is substantially increased as aid is reduced. No doubt these increased levels of turmoil result from the less than favorable economic conditions and reduced regime coercive capabilities result from the withdrawal of military aid.

Military manpower also responds to reductions in military aid and arms sales. The pattern that emerges for this variable is more complex. Those nations that presently receive large amounts of aid do not show correspondingly large reductions in manpower levels. In fact, they reflect little change at all. Aid and arms purchases are characteristic of nations whose militaries are sophisticated enough that such support can upgrade the military establishment. Nations that presently receive small amounts of aid experience reductions in their military manpower. The weaker and poorer nations depend on military manpower to project force and use aid to finance their personnel levels. As a result, they are more prone to show manpower reductions when aid is cut.

Levels of conflict were also expected to decline as aid and arms purchases were reduced. Indeed, the level of conflict does respond to the policy manipulations. The decline in superpower support for the military sector causes a corresponding decline in the level of conflict. In every case where aid is measurably reduced (for example, Egypt and Israel) conflict is reduced. However, the extent of the conflict reduction is quite small. The degree of change in the level of conflict is clearly a function of the size of the aid and arms sales reduction. But the amount of reduction examined in this simulation was not enough to produce a sizable reduction in the level of conflict. Other simulations that reduce these variables to lower levels can be examined to determine if and when conflict levels are maximally affected. However, this particular simulation failed to identify the most effective level from the standpoint of producing peaceful conditions in the Middle East.

One additional aspect of the forecasting model should be mentioned here.
Conflict is a function of past conflicts as well as defense spending and
arms races. Thus, unless the reduction of military aid and arms purchases
is drastic, past conflict propensities will produce high conflict fore-
casts. A real reduction in tension, and not just a reduction in armaments,
is necessary to lower Middle Eastern conflict significantly.

Despite the failure of this particular simulation to produce marked
decreases in conflict, it is encouraging to note that the decrease in mili-
tary aid and arms sales did cause negative shifts in the level of conflict.
This discovery suggests the need for cautious formulation of policies
regarding military aid and arms sales. It is clear from the regional fore-
casts that the projected decline in the Israeli economy demands that the
United States provide some form of military assistance if Israel is to
maintain military strength. However, aid and arms do expand the military
establishments of the Middle Eastern nations and result in increased con-
flict. When support is withdrawn, conflict does decrease to a limited
extent. Thus, limiting arms transfers and military aid to the Middle East
can reduce conflict in the region, but careful policy choices must be made
to insure that in the process of limiting aid the Israeli economy is not
destabilized.

Latin America

Military assistance, a variable which is a widespread and potent predictor
in this region, is the focus of the Latin American simulation. Specific-
ally, a scenario in which the Soviet Union attempts to penetrate the region
politically by providing substantial amounts of military aid to four coun-
tries was simulated. These four countries have been selected based on
their past political instability and their tendency to act independently
from the United States. Of course, Cuba will remain a major recipient of
Soviet aid in the simulation. In addition, Peru, Panama, and Bolivia have
been included as recipients of significant Soviet military aid inasmuch
as they are three Latin American countries with tendencies toward alignment

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instability and domestic unrest. Peru, for example, has in the past
actually purchased arms from the Soviet Union. Panama was chosen because
of the current Panama Canal treaty negotiations with the United States.
Bolivia was chosen because it is forecast to be politically unstable.

The specific simulation strategy involves increasing Soviet military aid
to these three countries during the period 1978 to 1983. The amount of
Soviet military aid given to these three countries during that period
equalled, on a per capita basis, the amount given to Cuba during the base
year of the forecast, 1970. After 1983, Soviet military aid to these
three countries was dropped to zero but assistance to Cuba continued at
the 1970 level.

In many respects the simulation for Latin America performed as expected
and in addition pointed out some subtleties in the relations and attri-
butes of the nations selected. For example, the influx of Soviet aid
to the three countries was expected to accelerate their economic growth.
This occurs in Panama, but not in Bolivia and Peru. As is shown in
the standard forecast for Latin America (see Chapter 3), Panama is pro-
jected to experience a rather precipitous economic decline during the
forecasting period. The influx of Soviet aid prevents this decline from
becoming as drastic as in the standard forecast. Thus, receipt of Soviet
military assistance has a positive effect on Panama's economy. Both
Bolivia and Peru, on the other hand, experience substantial economic
growth in the standard forecast. In the simulation, there is some eco-
nomic growth in Bolivia and Peru, but it is less than that projected in
the standard forecast. Because these two countries experience less growth
when they receive military aid from t. Soviet Union, they also spend less
on defense. Panama, however, has more marginal resources as a result of
the slower economic decline in the simulation, and therefore spends more
on its defense establishment. Panama, a small and relatively poor coun-
try, is clearly responding to a stimulus that is produced by Soviet aid.
However, the amount of aid is not large enough to prevent stagnation com-
pletely in the Panamanian economy. The other two countries fail to respond

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to the influx of Soviet aid because the amounts of aid selected to reflect Soviet penetration are essentially insignificant relative to the sizes of their total economies.

From an international viewpoint, two nations stimulated by Soviet aid respond by increasing their political alignment toward the Soviet Union. Only Peru, currently acting in a manner indicative of its Soviet orientation, fails to show any major alignment shift. It should be recalled that the standard forecast reveals considerable Peruvian alignment toward the Soviet Union. The two countries that have no history of economic or political alignment with the Soviet Union -- Bolivia and Panama -- reveal increased alignment instabilities as a result of the Soviet penetration effort. With regard to total alignment, the economic sector influences the extent to which the nations will be involved in international political and economic activity. Thus, the limited growth for Peru and Bolivia and the constrained decline for Panama make all three countries relatively unattractive as international trading partners.

One expectation that failed to materialize as a result of the increased amounts of Soviet aid was evidence of an incipient arms race between rivals in the Latin American region. This is a result of the failure of the small amounts of Soviet aid to inspire any accelerated economic growth, a portion of which tends to be diverted into defense spending. The amount of Soviet aid, hence, was simply too small to produce rival defense spending. This Latin American simulation can be tried with substantially larger amounts of Soviet aid and investigated for its impact on rival defense spending.

Other questions which may be addressed include: at what level does the Panamanian economy begin to reverse its economic decline? How much aid is required to accelerate growth in Bolivia and Peru? What percentage of increase in Soviet aid would be required to match the effect of present U.S. aid on the nations in Latin America?

It is clear from this Latin American simulation that the impact of aid
is felt more readily by the smaller nations in the region. Thus, mili-
tary aid can accelerate the growth of the smaller and weaker Latin Ameri-
can economies. However, it appears that unless large amounts of aid are
distributed, the impact on the transitional economies is less favorable.
By far the most important finding of this simulation is the impact of
Soviet aid on the alignment orientations of the countries selected. Even
small amounts of military assistance that come from the Soviet Union have
some impact on the alignment of the nations. It appears that Soviet pene-
tration through military aid can affect alignment in Latin America. Al-
though we have only identified a single form that Soviet penetration
attempts might take, military aid does indicate that possible changes in
alignment can be expected.

Africa

In Africa, a dyadic relationship with a potential for relatively intense
conflict has been identified. This relationship is between Ethiopia,
currently of strategic value to the United States, and Somalia, cur-
rently on the receiving end of substantial amounts of Soviet aid and
a host for a Soviet base. Here, a classic form of international competi-
tion between the two superpowers, acted out through client nations, was
simulated. In an effort to slow the pace of Soviet penetration into
eastern Africa, the United States makes an initiative toward Somalia
through increased cooperative diplomatic behavior and increased economic
and military aid. The Soviets respond subsequently with their own initi-
ative in that country and the United States withdraws, concentrating its
cooperative behavior and assistance toward Ethiopia. This scenario places
Ethiopia firmly on the side of the United States and Somalia firmly on the
side of the Soviet Union.

The specific operationalization of this simulation was as follows. In
1970, the United States provided $11 million in military aid and $9 mil-
lion in economic aid to Ethiopia. Starting in 1976, the United States

doubled its military and economic aid to Ethiopia -- to $22 million and $18 million, respectively -- and granted the same amounts of military and economic aid to Somalia. In addition, U.S. cooperative behavior toward Ethiopia was doubled from its 1970 level beginning in 1975 and, also beginning in 1975, U.S. cooperative behavior toward Somalia was set equal to that directed at Ethiopia.

After three years (in 1978), the Soviet Union began granting equal amounts of military and economic aid --- $22 million and $18 million respectively -- to Somalia and began directing cooperative behavior toward Somalia at a level equal to that emanating from the United States. In 1978, the United States responded by reducing military aid to Somalia to 0, maintaining the same levels of economic aid and cooperative behavior toward Somalia and the same levels on all three variables toward Ethiopia. Then, in 1979, U.S. economic aid to Somalia was returned to 0 and in 1980, U.S. cooperative behavior toward Somalia was also dropped to 0. From 1980 until the end of the forecast period (1995) U.S. military and economic aid and cooperative behavior toward Ethiopia were continued at double their 1970 levels, and Soviet military and economic aid and cooperative behavior toward Somalia were continued at the same levels as for the United States toward Ethiopia.

Some very interesting results were generated by this simulation. Currently, Ethiopia and Somalia reveal total gross domestic products that are approximately equivalent. But, because of the size of Ethiopia's population, that country is much poorer on a per capita basis. As a result of the five years of U.S. and Soviet involvement in Somalia, that country improves its economic position substantially. In fact, the growth that is a result of the influx of aid to that country creates the economic gap between it and Ethiopia. At the same time, major reversals occur with regard to defense spending. In 1976, Ethiopia is projected to expend approximately $45 million on defense and Somalia only $27 million. As a result of the large quantities of aid given to Somalia by the United States, this situation reverses itself in 1978 with Ethiopia's defense expenditures reaching $59 million and Somalia's reaching $88 million. By 1980, as a result of its

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rapid economic progress, Somalia is projected to spend twice the amount
on defense as Ethiopia ($143 million versus $73 million).[1] (See Figure 1.)

Although Somalia's alignment with the United States was expected to
increase as a result of the increases in U.S. aid, this was not the case.
In fact, because the impact of aid is to accelerate growth substantially,
the primary effect was to increase Somalia's involvement in international
relations. Politically, Somalia remains aligned with the Soviet Union
during the entire period of U.S. cooperation. Moreover, there is little
effect on the alignment instability of either of the countries. This is
attributed primarily to the fact that they each support North-South issues
in the United Nations to a large extent and trade only minimally with
either superpower.

This simulation was designed to assess the impact of superpower penetra-
tion into rival countries. It was also designed to determine the impact
of increased American and Soviet aid on the future propensities of the
two rivals to conflict. We assumed that aid would have a positive effect
on the conflict propensities of the two countries. As a result of the
increasing aid, conflict between Ethiopia and Somalia becomes almost a
certainty. In the standard forecast, Somalia remains a rather peaceful
nation but Ethiopia demonstrates a high propensity to conflict. When the
United States and the Soviet Union increase their penetration of Somalia
and provide it with military support, that country's conflict propensity
increases fivefold. By 1977, only two years after the U.S. initiative
begins, Somalia's conflict propensity had increased 138 percent. Thus,
we would conclude that policies that improve the capabilities of Somalia's
defense establishment also generate situations where international violence
becomes highly probable.

The impact of military and foreign aid is felt in domestic politics as well
since Somalia becomes a candidate for government change in 1981, three years
before it does in the standard forecast period. Ethiopia, with its high
levels of turmoil, is always a candidate for government change. The impact
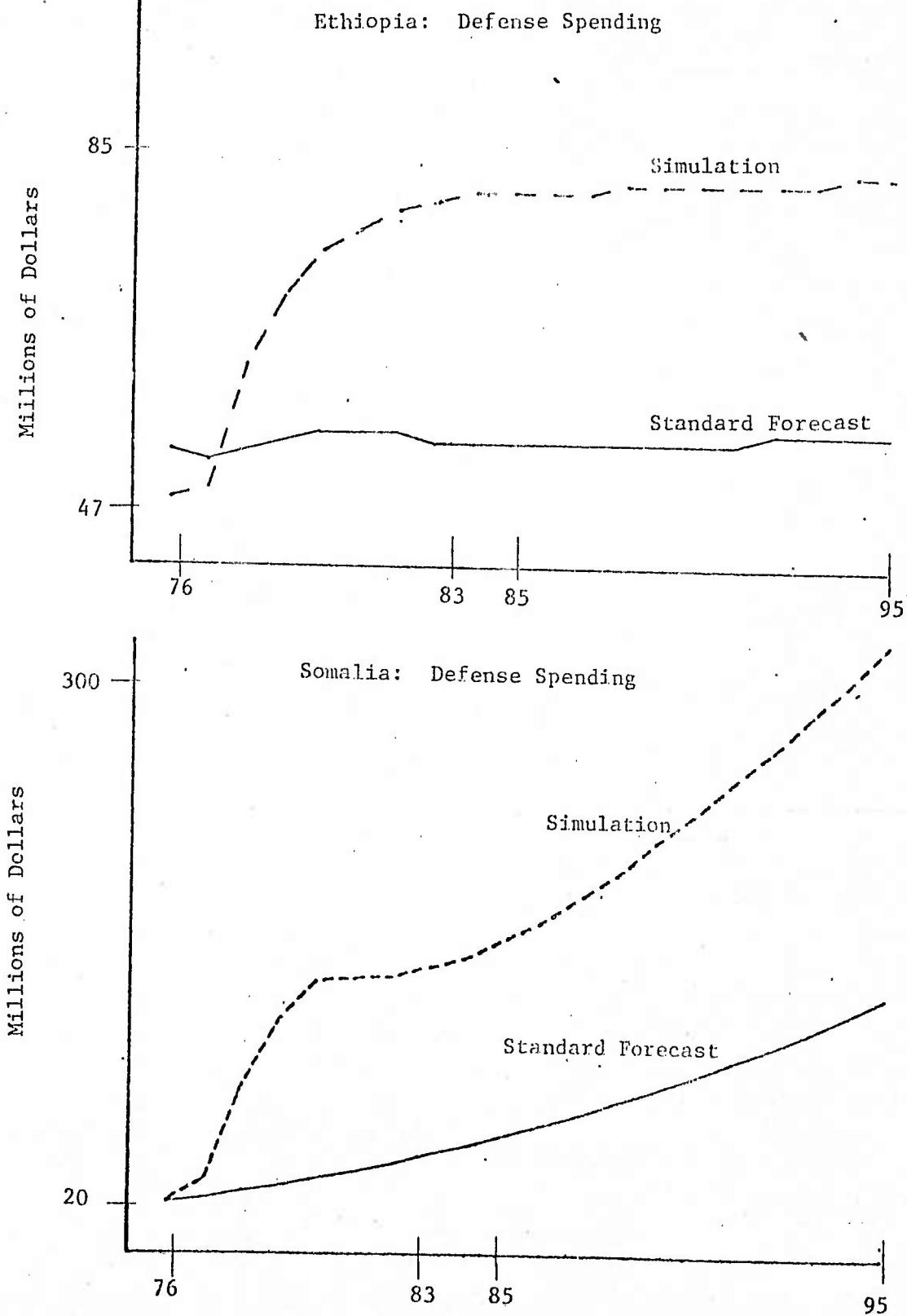
Figure 1. Defense Spending in Two African Rival Countries

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of Soviet and U.S. penetration on the Ethiopia-Somalia dyad demonstrates that certain forms of superpower behavior can exacerbate already tense situations. Clearly, as superpower rivals attempt to influence client nations, the outcomes are not always favorable. In the Somalian case there is a trade-off between accelerated economic development and the tendency for economic development to stimulate defense spending and therefore the propensity for international conflict. These simulated results could also occur if only Soviet aid were forthcoming to Somalia. The simulation does not imply that American support must have negative implications, but it does suggest that as rapid economic growth is experienced by African nations with traditional conflicts, future conflict propensities may be increased.

SUMMARY

In this chapter, the effects of selected U.S. and Soviet policy alternatives have been described in terms of the values of forecast variables included within the Latin American, Middle Eastern, and African forecasting models. The particular policies examined here should not be taken to represent the only, or even the "best," policy alternatives that can be simulated. Rather, they are considered plausible and realistic alternatives that demonstrate, by example, how users can develop, operationalize, and implement simulations using these models to examine specific policy planning questions of importance to them.

As has been noted throughout this Technical Appendix, the equations and countries included in these models are tied together in a complex of direct and indirect linkages. The more indirect a linkage, of course, the less the effect of any given change in a policy variable. Thus, the changes explored here have some substantial effects on forecast outcomes and a number of very indirect and relatively minor effects. The more significant findings of the particular simulations investigated here include:

- In the Middle East a reduction of military aid and arms sales causes a decline in economic growth and thereby

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influences the amount of defense expenditures that nations divert from their total resources. The decline in defense expenditures in turn affects, to a limited extent, the degree of conflict in the region. As simulated, the reductions in military aid appear to have been too small to influence the level of conflict substantially. However, some negative change was noted. We conclude that reduced military support to the Middle Eastern region can ultimately affect the level of conflict in that region.

○ With regard to Latin America, the degree of Soviet aid to selected countries in that region was shown to have a constraining effect on growth unless the country receiving the aid is extremely small. International alignment is affected to a certain extent while aid is being given, but returns to the original hemispheric orientation once aid is discontinued. Evidently, small amounts of Soviet aid will have little effect on maintaining alignment toward that country or in accelerating growth in the region.

○ In Africa, competition between the Soviet Union and the United States was simulated. The reciprocal behavior of the two countries toward Ethiopia and Somalia revealed that large influxes of military and economic aid can accelerate development but that much of the growth ultimately is diverted to defense spending. The rapid acceleration in defense spending exacerbates an already tense situation between the two African countries so that the probability of violence is extremely high. The influx of aid also affects the domestic political situation and causes increased levels of turmoil beyond that projected by the standard forecasting model.

We have emphasized some aspects of the models that bear upon their use for policy analysis of this sort. Generally speaking, the Middle East is the region most susceptible to the influence of both U.S. and Soviet policy whereas Africa is the least susceptible. Thus, on the surface, one would expect that a given policy alternative would make a greater difference in the forecast results for the Middle East than it would for Africa. Latin America, because of peculiar historical circumstances, falls between these two extremes. Until now, the United States has had a pervasive effect on shaping the environment of that region, primarily because of Soviet inactivity, except in the case of Cuba. Theoretically, however, the Soviet Union could have the same kind of impact in Latin America as the United States does were the Soviets to initiate extensive overtures to Latin American countries.

CHAPTER 5. CONCLUSION

The preceding discussions have described forecasting models developed for the Latin American, Middle Eastern, and African regions. These models are designed to assist JCS/J-5 make long-range estimates of future strategic policy and planning requirements. The discussions reveal many of the specific and peculiar constraints on forecasting models for these three regions. These constraints arise from the regions' individual and collective differences, their differences in terms of economic, political, and military importance to the superpowers, and their growing significance for U.S. defense planning.

To meet the operational requirements of these constraints, expanded and more complex models were developed. The added complexity is demanded not only by the nature of these three developing regions, but also by the long-range forecasting needs of the JCS/J-5 which the models have been specifically designed to handle. In combination, these concerns led to the development of forecasting models that:

- Calculate and present many of the key variables to emphasize change in nations' values during the forecast period;

- Include variables that capture the influence of the United States and the Soviet Union on the behavior of nations in each region and which, to a limited extent, capture the impact of significant interactions between the policies of the superpowers;

- Are region-specific for each of the forecasting equations and country-specific for each of the 65 countries included in this study for a substantial subset of the equations.

A number of specific accomplishments and innovations have been required to develop these general capabilities and to meet the planning requirements of the JCS/J-5 within unstable and developing regions of the world.

These accomplishments and innovations include:

- Expansion and modification of the set of forecast variables to take into account substantive regional peculiarities of the Middle East, Latin America, and Africa as they relate to the five broad forecast concepts.

- A new approach to measuring alignment in which arms flows, trade, aid, and U.N. voting are included to capture the complexities of international orientations in the less developed regions. A measure that takes alignment incongruities into account is also included.

- Addition of several national power variables to capture more realistically the complex processes of economic, political, and social development.

- A definition of turmoil to represent more accurately popular discontent and unrest in Third World countries, and development of a coup propensity indicator to measure the extent to which a country is prone to irregular government change.

- A tension ratio variable, replacing dyadic conflict frequencies, to represent the propensity for military conflict among less developed countries.

- A set of exogenous predictor variables, including arms transfers, trade, foreign aid, and military aid, to permit the analyst to move from assumptions about no change in outside influences to the point where various assumptions about the nature of outside influences can be used to generate multiple futures.

The preceding chapters stressed CACI's efforts to enrich the forecasting models developed for JCS/J-5. This project relied upon three approaches: (1) increasing the number of variables used to make the five central environmental descriptors and their predictors operational; (2) increasing the number of equations in the forecasting models; and (3) introducing manipulable exogenous predictor variables that allow the impact of American and Soviet behavior on the regions to be assessed.

The latter innovation is the first attempt to capture the impact of superpower behavior on regional environments. The capability provided

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by the addition of exogenous variables of this type paves the way for refinements that should eventually be incorporated into the JCS/J-5 forecasting capability. For example, the current effort only includes the influences of the United States and the Soviet Union. In recognition of an increasingly polycentric international environment, other "poles" should be added. The addition of other major actors (China, Japan) or groups (European Economic Community, the Organization of Arab Petroleum Exporting Countries) will permit the impact of numerous international influences to be evaluated for their implications for regional strategic policy and plans.

These changes would permit the forecasting outcomes to represent better the wide variation in the environments of many regions of the world. However, this approach does have limitations; it is still an oversimplification of relationships and thus can result in the loss of valuable information. Alternative methods that would improve the quality of forecasts are now becoming part of "the state of the art." These new methods would explicitly take into account those specific characteristics of nations that influence developmental progress and therefore have implications for U.S. defense policies and plans.

The configurations of the social, political, and economic dimensions in Latin America, the Middle East, and Africa at any given time result, in part, from specific decisions by national leaders. It is becoming increasingly apparent that in these regions developmental change and governmental policy are almost inextricably linked. Although it is possible to enrich the forecasting equations to represent the range of developmental configurations likely to be found in these regions during the next 20 years, forecasts for a specific country can be improved substantially by identifying current policy, the probability of a shift in policy, and the most probable direction of such a shift. In this way, Department of Defense planners and policy-makers can better understand the dynamics of diverse developing regions and therefore develop realistic boundaries for strategic and tactical operations requirements. In short, the forecasts

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themselves can become an invaluable tool for evaluating the linkage between alternative futures and the defense likely to accompany those futures.

The usefulness of forecasting models for Latin America, Africa, and the Middle East depends to a large extent upon their ability to represent the subtle realities of these less developed nations. One means of insuring such a capability involves developing essentially unique models for each country, or for at least relatively small groups of very similar countries. A second requirement involves developing alternative sub-models which would introduce a capability to forecast a range of alternative futures, and in turn provide the basis upon which to evaluate alternative strategic policies and plans. Using these devices, planners and analysts can: (1) assess the impact of discontinuous changes in the relationships among variables for a particular country given alternative models for that country; and (2) assess the meaningfulness of shifting or changing structures in the regions for strategic policies and plans.

There are several ways of developing country-specific forecasting models. One involves developing different forecasting equations for each variable for each nation included in the study. While this option ensures the greatest realism and maximizes the variability of forecast outcomes, it also involves the greatest cost. A more practical approach to developing country-specific models involves generating a common set of forecasting equations and estimating separate parameters for each country from time series data. To the extent that selected parameters could be analytically set equal to zero for specific nations, this option approaches the development of different equations for each nation. A third approach includes the best features of both strategies. By combining nations into groups based upon similarities among the nations and developing group-specific parameters for the forecast equations, specificity is preserved and cost is minimized. Thus, different representations of economic behavior are developed for small sets of countries and separate parameter estimates are used for each group. Group-specific forecasting

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equations and parameter estimates insure variability on the most important and most volatile variables in the forecasting model. This compromise solution has usually been the strategy employed in this study. Every effort has been made to capture realistically the complexities and variability of three very different and unstable regions, given the constraints of resource availability.

There are also a number of approaches to the problem of representing alternative futures and systematically relating those futures to sudden or discontinuous changes in forecast variables or in the relationships among those variables within specific nations. A set of endogenous disturbance mechanisms fed by the macro-model -- such as the government-change mechanism included in the present model -- can expand the range of probable futures forecast and allow planners increased latitude and flexibility in identifying future requirements.

As suggested above, one reason for the existence of alternative plausible futures is the sensitivity of the development process within any given country to political realities. For example, leadership changes, particularly when new leaders hold different views about the priorities of development along various dimensions, can produce dramatic shifts in the values of environmental variables or in the linkages among the variables. The shifts in domestic economic policy under the Allende government in Chile -- namely, income redistribution and state ownership of capital -- represented a different path toward development than had previously been followed in that country, and also had important international political consequences.

A second mechanism that can generate over-time variability in variable values and the linkages among variables might monitor changes in the redistribution of public and private spending or changes in the importance of particular raw materials for development. This factor can be especially important when a nation depends on export revenues of some commodity, such as oil, to finance development projects (for example, Iran

and Saudi Arabia). In this case, the contribution of that revenue to development constrains the nation's international political actions because of the implications of possible negative sanctions for the development process.

Finally, changes in competition among major powers for managing the Third World and its resources can significantly affect these regions and even change the patterns of relationships among environmental variables within Third World nations. The simulations described in this report merely hint at these dynamics but are nonetheless suggestive of their importance.

There exist, in short, complex and changing relationships between the economic and political variables that constitute a nation's environment, with causal links running to and from the economic and political variables. In Europe, political stability and similarity in economic structure allowed the construction of a forecasting model that examined the associations among the economic and political variables, with limited emphasis on explicit causal relationships. Simplifying the causal linkages between the economic and political sphere in this way permitted the development of a useful forecasting model for Europe while the methodologies themselves were being explored and developed. The three regions examined in this effort, on the other hand, are in a constant state of flux.

- Nations in these regions have a history of political instability and discontinuity of government policy that prevents the identification of standard political responses to economic developments;

- Foreign investment and various strategic raw materials play a much greater role in the growth of these countries' economies, as a rule, than they do in the developed nations;

- The structures of Latin American, Middle Eastern, and African nations are undergoing revision across a number of dimensions, and political forces can have a major impact on the development process; and

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- The changes in the nature of the competition among major powers for clients within developing regions can have a greater effect upon the nations in those regions than upon more developed countries.

The last characterization presents an exciting possibility that can build on the current models and advance JCS/J-5 long-range forecasting far beyond its present state. With the inclusion of additional principal actors, models can be built that allow the impact of hypothetical competitive situations (for example, U.S. versus Japanese economic interests in Asia) on international relations to be evaluated in an appropriate region (East, Southeast, South, or all of Asia, for example). By enhancing the forecasting models in this way, the interactive effects of great power behavior on the future global or regional environments could be better understood.

Thus, the development of capabilities to represent the variability in relationships among important environmental descriptors and the way that variance is associated with great power behavior will add substantially to the degree to which forecasting models for developing regions are realistic representations of those environments. The degree to which a forecasting model generates realistic expectations about the nature of the future environment for the planner determines its usefulness within the policy planning context. Moreover, realistic expectations are crucial for: (1) strategic planning; (2) evaluating future military capabilities (for example, operations, research and development, and intelligence in general and force structures, air and sealift capabilities, and telecommunications requirements in particular); and (3) examining, in advance, the impact of alternative defense policy actions. Thus, the kinds of capabilities described above and partially implemented in the three models developed in this effort contribute substantially to meeting identified planning needs in geographic areas where U.S. strategic and tactical interests are expected to remain significant in the future.

The current study, then, is one step toward the fully evolved forecasting/ planning model. The growing complexity of the international environment

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demands that increasingly sophisticated models be developed to assist
the defense planner in comprehending the overwhelmingly intricate nature
of the future international system in which correct decisions must be
made.

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ANNEX I

Country List

Latin America   n = 21

Argentina	Dominican Republic	Mexico
Bolivia	Ecuador	Nicaragua
Brazil	El Salvador	Panama
Chile	Guatemala	Paraguay
Colombia	Haiti	Peru
Costa Rica	Honduras	Uruguay
Cuba	Jamaica	Venezuela

Middle East   n = 15

Algeria	Jordan	Saudi Arabia
Egypt	Kuwait	Sudan
Iran	Lebanon	Syria
Iraq	Libya	Tunisia
Israel	Morocco	Yemen

Africa   n = 29

Burundi	Ivory Coast	Senegal
Cameroon	Kenya	Sierra Leone
Central African Republic	Liberia	Somalia
Chad	Malagasy	South Africa
People's Republic of Congo	Malawi	Tanzania
Dahomey	Mali	Uganda
Ethiopia	Niger	Upper Volta
Gambia	Nigeria	Zaire
Ghana	Rhodesia	Zambia
Guinea	Rwanda	

1

ANNEX II

Data Sources

Variable	Years	Sources
Military Aid from USSR	1960-1970	Arms to the Third World, U.S. Department of State "Soviet Aid and Trade," and The Arms Trade with the Third World
U.S. and Soviet Cooperative Behavior	1966-1972	WEIS file
Percentage Non-Agricultural Employment, Percentage Urbanization, Percentage Literate	1960-1970	Several sources, including U.N. Demographic Yearbook, Yearbook of Labor Statistics, U.N. Monthly Bulletin of Statistics, Statistical Abstract of Latin America, Black Africa Comparative Handbook, U.N. Food and Agricultural Organization Production Handbook, The Growth of Latin America, World Urbanization, and the UNESCO Yearbook
Economic Aid from USSR	1960-1970	U.S. Department of State "Communist Governments and Developing Nations: Aid and Trade"
Economic and Military Aid from U.S.	1960-1970	U.S. Overseas Loans and Grants
Gross Domestic Product	1960-1970	Several sources were collated by Gary Keynon, including the U.N. Yearbook of National Accounts Statistics and the International Financial Statistics. He has selected what he considers the best available data. There are no data for four of the African countries.
Private Consumption	1960-1970	U.N. Yearbook of National Accounts Statistics
Total Government Spending	1960-1970	U.N. Yearbook of National Accounts Statistics

1

Variable	Years	Source
Gross Fixed Domestic Capital Formation	1960-1970	U.N. Yearbook of National Accounts Statistics
Total Imports, Total Exports, Trade	1960-1970	IMF Direction of Trade Tape
Population	1960, 1965, 1970	ACDA World Military Expenditures and Arms Trade
Defense Spending	1960-1970	ACDA World Military Expenditures and Arms Trade
Military Manpower	1964, 1965, 1969, 1970	ACDA World Military Expenditures and Arms Trade
Arms Trade from U.S., Arms Trade with USSR	1963-1973 (aggregated)	ACDA World Military Expenditures and Arms Trade
U.N. Votes with U.S., Trade with USSR	1963, 1965 1969, 1970	IMF Direction of Trade
Turmoil	1964, 1965, 1969, 1970	This is T.R. Gurr's Magnitude of Political Conflict Variable
Irregular Executive Transfers	1955-1970	Banks, Cross Polity Time-Series Data
Physical Conflict	1966-1972	WEIS file, physical conflict variables aggregated for each year
Coercion	1966-1972	WEIS file, coercion variables aggregated for each year
Pressure	1966-1972	WEIS file, pressure variables aggregated for each year
Bloc Identification	1965, 1970	Coded by Jay McIlroy from Rummel's Dimensions of Nations data (+1 = U.S. alliances, 0 = neutral, -1 = USSR alliances)

2

Government Type

1965, 1970

Coded by Margaret Hayes (1 = broad-based, popularly-supported regime, 3 = new or traditional elitist regime, 2 = mixed regime)

3

ANNEX III

Standard Program and Documentation

Main Control Program

Purpose: To compute annual values of selected national descriptors for 1-20 years.

Input: Cards

Output: Unit 6 is the normal output file; Unit 8 can be used to trace output in the program and data check-out phase.

Job control language to implement program in G Level FORTRAN IV with deck in following order: JCL, FORTRAN Main, FORTRAN Subroutines, Initializing Values (see below), U.S. and Soviet Coefficients and Data. Forecast Country Data, Transition Matrices, Headings, and Coefficients.

```
//EXECLD EXEC PROC=FORTGCG,LIST=,GOREG=200K,SOURCE=YES,              00010000
//       MAP=NO,LSIZE=200K,FORTREG=150K                              00020000
XXFORTGCG PROC WORK=SYSDA,LOAD=,MAP=,LIST=NO,DECK=NO,SOURCE=,        00030000
XX             CODE=EBCDIC,ID=NO,LCT=52,FORTREG=100K,GOREG=110K,     00040000
XX             LSIZE=30K,JPARM=,TS=:TERM=TS,'                        00050000
***                                                                  00060000
***            THIS IS AN A.M.S. PROC.                               00070000
***            ACCOUNT=0904                                          00080000
***
XXFORT  EXEC PGM=IFYFORT,REGION=&FORTREG,PARM=(&DECK,DECK,&LOAD,LOAD, 00090000
&&           PGM=IFYFORT,REGION=150K,PARM=(NODECK,LOAD,
XX           &MAP,MAP,&LIST,LIST,&SOURCE,SOURCE,&CODE,&ID.ID,
&&           NOMAP,LIST,YESSOURCE,EBCDIC,NOID,
XX           'LINECNT=&LCT'),COND=(4,LT)                             00100000
&&           'LINECNT=52'),COND=(4,LT)                               00110000
***
```

1

Main Control Program (Cont'd)

```
XXSYSPRINT DD  SYSOUT=A,DCB=(LRECL=129,BLKSIZE=600,BUFNO=3,OPTCD=WC)           00120000
XXSYSPUNCH DD  SYSOUT=3,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,BUFNO=3,            00130000
XX             OPTCD=WC)                                                       00140000
                                                                              00150000
XXSYSLIN   DD  UNIT=(&WORK,SEP=(SYSPRINT,SYSPUNCH)),DSN=&LOADSET,
&&             UNIT=(SYSDA,SEP=(SYSPRINT,SYSPUNCH)),DSN=&LOADSET,              00160000
XX             DISP=(MOD,PASS),SPACE=(80,(500,100),,,CONTIG),                 00170000
XX             DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,BUFNO=3,OPTCD=WC)            00180000
**
//FORT.SYSIN DD *
EXC236I ******* ALLOCATION FOR E6HERMAN.EXECLD .FORT        ******** (STEP 001)
001    SYSPRINT  601  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000001
002    SYSPUNCH  678  2540 PUN  SYS75274.T175214.RV640.E6HERMAN.R0000002
003    SYSLIN    114  3330 DISK SYS75274.T175214.RV640.E6HERMAN.LOADSET
004    SYSIN     680  2540 RDR  SYS75274.T175214.RV640.E6HERMAN.R0000003
XXGO    EXEC  PGM=LOADER,PARM=(MAP,LET,PRINT,'SIZE=&LSIZE/&UPARM'),            00190000
&&            PGM=LOADER,PARM=(MAP,LET,PRINT,'SIZE=200K/'),
XX            COND=(4,LT,FORT),REGION=&GOREG
&&            COND=(4,LT,FORT),REGION=200K                                     00200000
XXSYSLIB  DD  DSN=SYS1.FORTLIB,DISP=SHR                                        00210000
XXSYSLOUT DD  SYSOUT=A,DCB=(LRECL=121,BLKSIZE=605,BUFNO=3,OPTCD=WC)            00220000
XXSYSLIN  DD  DSN=&LOADSET,DISP=(OLD,DELETE)                                   00230000
XXSYSTERM DD  &TS.SYSOUT=A                                                     00240000
&&            TERM=TS,SYSOUT=A
XXFT05F001 DD DDNAME=SYSIN                                                     00250000
XXFT06F001 DD SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=689,OPTCD=WC)          00260000
XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,OPTCD=WC)            00270000
XXMINIDUMP DD SYSOUT=A                                                         00280000
//GO.SYSIN DD *
//GO.MINIDUMP DD DUMMY
//GO.FT08F001 DD SYSOUT=A
//
EXC236I ******* ALLOCATION FOR E6HERMAN.EXECLD .GO         ******** (STEP 002)
001    SYSLIB    117  3330 DISK SYS1.FORTLIB
002    SYSLOUT   601  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000004
003    SYSLIN    114  3330 DISK SYS75274.T175214.RV640.E6HERMAN.LOADSET
004    SYSTERM   692  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000005
005    FT05F001  680  2540 RDR  SYS75274.T175214.RV640.E6HERMAN.R0000009
006    FT06F001  603  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000006
007    FT07F001  578  2540 PUN  SYS75274.T175214.RV640.E6HERMAN.R0000007
008    MINIDUMP  604  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000008
009    MINIDUMP  DUMMY          NULLFILE
010    FT08F001  605  1403 PRT  SYS75274.T175214.RV640.E6HERMAN.R0000010
```

Main Control Program (Cont'd)

```
      DIMENSION POP(4,65),GDP(4,65),CONS(2,65),INV(2,65),DDT(2,65)
     1,DEX(2,65),TIM(2,65),TEX(2,65),MILM(2,65),MILA(2,65),ATT(2,65)
     2,VOTT(2,65),ATR(2,65),VOTR(2,65),AIS(2,65),ALR(2,65),CONF(2,65)
     3,TR(2,65),TML(2,65),COUP(5,65),GOVT(65),GPCL(65),USC(65),SUC(65)
     4,AID(65),TM(5,3,2),ISX(15),KAD(65)
      COMMON/ONE/NAMC(2,65),HEAD(15,10),IS(15),KODE
      COMMON/TWO/NON(9,65),URB(9,65),MCNL(65),LITL(65),URBL(65),ARM(65)
     1,CMIL(65),CDEX(65),        USM(6,65),SUM(6,65),UST(65),SUT(65)
     2,USA(65),SUA(65),B(16,65),A(59,3),C(6)
      INTEGER HEAD,GOVT
      INTEGER V,W,X,Y,Z
      REAL MILM,MILA,INV,NON,NONL,LT,LITL,NN,NN8
      DATA IA,IC/1HA,1HC/
      DATA KAD/03,19,01,19,21,17,08,12,19,13,13,08,10,00,11,13,06,01,
     104,01,05,31,25,25,24,23,34,25,26,23,22,25,43,26,22,32,56,39,33,
     230,64,53,59,57,54,47,46,59,00,61,63,42,45,61,37,46,45,43,51,55,
     333,45,41,55/
      T=10.
      IX=31417
      IPRT=30.
```

C

Main Control Program (Cont'd)

Initial values of M (the number of countries), IX (seed of the random number generator) and I (time period index) are set/read. The by-pass code, KODE, providing for implementation of U.S./Soviet policy changes, is read. If KODE = 1 new values on the U.S. and Soviet policy variables are read each model iteration (year). If KODE = 0 initial values for U.S./Soviet policy variables are used each iteration (year). See also, Statement 990.

```
      READ 801,M,NYEAR,KODE
  801 FORMAT(3I2)
```

Coefficients and initial data for the computation of U.S. and Soviet populations and GDP's are read.

```
C
C US,SOVIET UNION DATA
      READ 810,L,C
  810 FORMAT(A1,6F8.2)
      IF (L.NE.IC) WRITE (6,810) L,C
      READ 810,L,USP,SUP
```

U.S. and Soviet cooperation indices, arms transfers, total aid and military aid figures are read for each nation as per value of KODE.

```
      DO 31   I=1,M
   31 READ 816,USC(I),SUC(I),USA(I),SUA(I),UST(I),SUT(I)
     1,(USM(K,I),SUM(K,I),K=1,6)
  816 FORMAT(8X,6F8.1)
```

4

Main Control Program (Cont'd)

- -

Data on forecast variables for each Latin American (I = 1, 21), Middle Eastern (I = 22, 36), and African
I = 37, 65) nation. Finally, transition matrices, headings, and coefficients are read. As a check, any
of the initializing data can be written onto Unit 8 or 9.

- -

```
C
C  NATIONAL DATA
      DO 802  I=1,M
      READ 803,      (NAMC(J,I),J=1,2),GOVT(I),(POP(Z,I),Z=1,3)
     1,(GDP(Y,I),Y=1,3),CONS(1,I),INV(1,I),DOM(1,I),DEX(1,I),TIM(1,I)
     2,TEX(1,I),MILM(1,I),ATT(1,I),VOTT(1,I),ATR(1,I),VOTR(1,I),AIS(1,I)
     3,ALR(1,I),CONF(1,I),TR(1,I),TML(1,I),(COUP(X,I),X=1,5)
     4,(NON(W,I),W=1,8),(URB(V,I),V=1,8)
  802 CONTINUE
  803 FORMAT(2A4,I1/3F5.1,3F6.0,4F8.2,2F5.0/8F5.3,F6.2,F5.3/5F5.3,
     116F3.2)
C
C  TRANSITION MATRICES
      DO 804  K=1,5
  804 READ 805,((TM(K,I,J ),I=1,3),J=1,2)
  805 FORMAT(6F4.0)
C  HEADINGS-VARIABLE NAMES
      DO 806  K=1,10
  806 READ 807,(HEAD(J,K),J=1,15)
  807 FORMAT(15A4)
      READ 807,IS,ISX
C
C  COEFFICIENTS
      DO 803 L1=1,59
      READ 809,IL,L,J,P,Q
      IF(L.GT.59) GO TO 808
      A(L,1)=J
      A(L,2)=P
      A(L,3)=Q
```

5

```
      808 CONTINUE
      809 FORMAT(A1,I2,3F10.2)
          READ 814,(B(1,I),I=1,65)
      814 FORMAT(3X,9F8.2)
      815 FORMAT(3X,6F8.2)
          DO 8121  I=1,M
     8121 READ 814,(B(K,I),K=2,10)
          DO 8122  I=1,M
     8122 READ 815,(B(K,I),K=11,16)
      C
```

The time index is increased by 1 and U.S. and Soviet populations and GDP's are calculated. The average military aid over the past 5 years is computed.

```
      C  PRELIMINARY EQUATIONS
       30 T=T+1.
          USP=C(1)*USP
          SUP=C(2)*SUP
          USG=(10.**C(3))*(10.**(C(4)*T))
          SUG=(10.**C(5))*(10.**(C(6)*T))
          DO 34  I=1,M
          Q=0.
          DO 32  J=2,6
       32 Q=Q+USM(J,I)+SUM(J,I)
          MILA(2,I)=Q/5.
          Q=0.
          DO 33  J=1,5
       33 Q=Q+USM(J,I)+SUM(J,I)
          MILA(1,I)=Q/5.
       34 CONTINUE
```

6

Main <u>Control Program</u> (Cont'd)

PART 1. Computation of the Variables Listed Below for Each Nation:

Population is computed first and figures for the past 4 years updated.

```
C POP,CONS,INV,DOM,DEX,TIM,TEX,MILM,ATT,ATR,VCTT
      DO 43   I=1,4
      P=B(1,I)*POP(1,I)
      POP(4,I)=POP(3,I)
      POP(3,I)=POP(2,I)
      POP(2,I)=POP(1,I)
      POP(1,I)=P
      DP=P-POP(2,I)
      DP2=POP(2,I)-POP(3,I)
      IF(DP2.LE.0.0)DP2=.001
```

Main Control Program (Cont'd)

- -

Current values of CONS, TIM, and TEX depend on the value of GDP for the current period and GDP in turn depends on them. A reduced form is used to effect a two-step direct computation.

Step 1

The local variables CX, VX, DX, FX, TI, and TX are set respectively to those parts of the variables above not containing the current GDP-value.

- -

```
      CX=B(2,I)+B(4,I)*CONS(1,I)
      DX=B(7,I)+B(8,I)*DOM(1,I)+B(9,I)*GDP(1,I)+B(10,I)*POP(1,I)
      CALL ITYP(I,J)
      CFX=A(1,J)+A(3,J)*(DEX(1,I)/GDP(1,I))+A(4,J)*CONF(1,I)
     1+A(5,J)*((GDP(1,I)-GDP(2,I))/GDP2)+A(6,J)*MILA(1,I)
      K=KAD(I)
      IF(I.LE.11) DEX(2,K)=DEX(1,K)/1.1
      IF (K.NE.0) CFX=CFX+A(2,J)*(DEX(1,K)-DEX(2,K))
      FX=DEX(1,I)+CFX
      DEX(2,I)=DEX(1,I)
      DEX(1,I)=DEX(2,I)+CFX
      IF(DFX(1,I).LT.0.0)DEX(1,I)=0.0
      INV(2,I)=INV(1,I)
      INV(1,I)=B(5,I)+B(6,I)*(GDP(2,I)-GDP(3,I))
      IF(INV(1,I).LT.0.0)INV(1,I)=0.0
      TI=B(11,I)+B(13,I)*POP(1,I)
      TX=B(14,I)+B(16,I)*POP(1,I)
```

Main Control Program (Cont'd)

The local variable, CONST, is the sum of these terms. The coefficient, ALPHA, is the sum of all multipliers of GDP in the equations for CONS, TIM, and TEX. GDP for the current period is computed as CONST/(1.-ALPHA). Values of GDP for the past 4 periods are updated.

```
      CONST=CX+DX+FX+TX-TI+INV(11,I)
      ALPHA=B(3,I)+B(15,I)-B(12,I)
      IF(ALPHA.EQ.1.0)ALPHA=.999
      G=CONST/(1.-ALPHA)
      GDP(4,I)=GDP(3,I)
      GDP(3,I)=GDP(2,I)
      GDP(2,I)=GDP(1,I)
      GDP(1,I)=G
```

Current values for CONS, INV, DOM, DEX, TEX, and TIM are computed.

```
      CONS(2,I)=CONS(1,I)
      CONS(1,I)=CX+B(3,I)*G
      IF(CONS(1,I).LT.0.0)CONS(1,I)=0.0
      DOM(2,I)=DOM(1,I)
      DOM(1,I)=DX
      IF(DOM(1,I).LT.0.0)DOM(1,I)=0.0
      TEX(2,I)=TEX(1,I)
      TEX(1,I)=TX+B(15,I)*G
      IF(TEX(1,I).LT.0.0)TEX(1,I)=0.0
      TIM(2,I)=TIM(1,I)
      TIM(1,I)=TI+B(12,I)*G
      IF(TIM(1,I).LT.0.0)TIM(1,I)=0.0
```

9

Main Control Program (Cont'd)

With the computation of MILM, ATR, ATT, and VOTT, the 43 DO Loop and the first major computational sections are completed.

```
      MILM(2,I)=MILM(1,I)
      CMIL(I)=A(19,J)+A(20,J)*CONF(1,I)+A(21,J)*CFX
      1+A(22,J)*MILA(1,I)
      MILM(1,I)=MILM(1,I)+CMIL(I)
      IF(MILM(1,I).LT.0.0)MILM(1,I)=0.0
      IF(GDP(1,I).LE.0.0)G=.01
      IF(POP(1,I).LE.0.0)P=.01
      TMH=TIM(1,I)
      TX=TCX(1,I)
      IF(TIM(1,I).LE.0.0)TMH=.01
      IF(TCX(1,I).LE.0.0)TX=.01
      UI=A(7,J)+(A(8,J)*(ALOG(G)))+(A(9,J)*(ALOG(P)))+(A(10,J)*
      1(ALOG(USG)))+(A(11,J)*(ALOG(VOTT(1,I)+.01)))
      IF(UI.GT.(ALOG(TMH)))UI=ALOG(TMH)
      USI=EXP(UI)
      UE=A(12,J)+(A(13,J)*(ALOG(G)))+(A(14,J)*(ALOG(P)))+(A(15,J)*
      1(ALOG(USG)))+(A(16,J)*(ALOG(VOTT(1,I)+.01)))
      IF(UE.GT.(ALOG(TX)))UE=ALOG(TX)
      USE=EXP(UE)
      SI=A(17,J)+(A(18,J)*(ALOG(G)))+(A(52,J)*(ALOG(P)))+(A(53,J)*
      1(ALOG(SUG)))+(A(54,J)*(ALOG(VOTT(1,I)+.01)))
      IF(SI.GT.(ALOG(TMH)))SI=ALOG(TMH)
      SUI=EXP(SI)
      SE=A(55,J)+(A(56,J)*(ALOG(G)))+(A(57,J)*(ALOG(P)))+(A(58,J)*
      1(ALOG(SUG)))+(A(59,J)*(ALOG(VOTT(1,I)+.01)))
      IF(SE.GT.(ALOG(TX)))SE=ALOG(TX)
      SUE=EXP(SE)
      TU=USI+USE
      IF(TU.LT.0.0)TU=0.0
      PST=ATR(1,I)*ATT(1,I)
      IF(PST)36,36,35
```

Main Control Program (Cont'd)

```
   35 TS=SUI+SUE
      IF(TS.LT.0.0)TS=0.0
      GO TO 37
   36 TS=0.0
   37 TU=TU/(TMH+TX)
      TS=TS/(TMH+TX)
      Q=SQRT(TU*TU+TS*TS)
      ATR(2,I)=ATR(1,I)
      ATR(1,I)=Q
      ATT(2,I)=ATT(1,I)
      IF(Q)501,501,502
  502 ATT(1,I)=TS/Q
      IF(ATT(1,I).GT.1.0)ATT(1,I)=1.0
      GO TO 503
  501 ATT(1,I)=0.0
  503 VOTT(2,I)=VOTT(1,I)
      WID=USA(I)/(SUA(I)+1.0)
      AID(I)=WID
      Q=SQRT(SUT(I)*SUT(I)+UST(I)*UST(I))
      IF(Q)504,504,505
  504 WRM=0.0
      GO TO 506
  505 WRM=SUT(I)/Q
  506 AFM(I)=Q
      VOTT(1,I)=A(23,J)+A(24,J)*WRM+A(25,J)*GCVT(I)
     1+A(26,J)*ATT(1,I)+A(27,J)*WID
      IF(VOTT(1,I).LT.0.0)VOTT(1,I)=0.0
      IF(VOTT(1,I).GT.1.0)VOTT(1,I)=1.0
   43 CONTINUE
```

Main-Control Program (Cont'd)

- - - - - - - - - - - - - - - - -

The first 5 report sections are printed. These can also be written on Unit 8 or 9.

- - - - - - - - - - - - - - - - -

```
C
C PRINT SECTIONS 1-5
      IF(T-IPRT)850,850,849
849   CALL OI(1,4,4,M,POP,GDP)
      CALL OI(2,2,2,M,CCNS,INV)
      CALL OI(3,2,2,M,DOM,DEX)
      CALL OI(4,2,2,M,TIM,TEX)
      CALL OI(5,2,2,M,MILM,MILA)
```

Main Control Program (Cont'd)

Standardized values of the LOGS of NON, LIT, URB, and GDP/POP are computed.

```
C
C     STANDARDIZED NON,LIT,URB,GDP/POP
850   DO 50 I=1,M
      UR5=URB(5,I)
      UR8=URB(8,I)
      NN8=NON(8,I)
      GP3=(GDP(3,I)/POP(3,I))
      IF(UR5.LE.0.0)UR5=.01
      IF(UR8.LE.0.0)UR8=.01
      IF(NN8.LE.0.0)NN8=.01
      IF(GP3.LE.0.0)GP3=.01
      NN=0.45+(0.47*(ALOG10(UR5)))+(0.19*(ALOG10(GP3)))
      LT=-.17+(0.65*(ALOG10(NN8)))+(0.46*(ALOG10(UR8)))
      UR=-.16+(0.78*NN)+(0.21*LT)
      DO 42 J=2,9
      J2=J-1
      NON(J,I)=NON(J2,I)
      URB(J,I)=URB(J2,I)
42    CONTINUE
      NON(1,I)=(10.**NN)
      URB(1,I)=(10.**UR)
      NONL(I)=NN
      LITL(I)=LT
      URBL(I)=UR
      GPCK=(GDP(1,I)/POP(1,I))
      IF(GPCK.LE.0.0)GPCK=.01
      GPCL(I)=ALOG10(GPCK)
50    CONTINUE
      CALL STD(M,NONL)
      CALL STD(M,LITL)
      CALL STD(M,URBL)
      CALL STD(M,GPCL)
C
```

13

Main Control Program (Cont'd)

VOTR, AIS, TML, COUP, and CONF are computed.

```
C  VOTR,AIS,TML,COUP,CONF
      DO 60  I=1,4
      STR=NONL(I)+LITL(I)+UFBL(I)-3.*GPCL(I)
      CALL ITYP(I,J)
      VTR=A(28,J)+A(29,J)*ATR(1,I)+A(30,J)*GOVT(I)
     1+A(31,J)*(GDP(1,I)-GDP(2,I))/(POP(1,I)-POP(2,I))
     2+A(32,J)*VOTR(1,I)+A(33,J)*ARM(I)+A(34,J)*MILA(1,I)
      IF(VTR.LT.0.0)VTR=0.0
      IF(VTR.GT.1.414)VTR=1.414
      VOTR(2,I)=VOTR(1,I)
      VOTR(1,I)=VTR
      ALR(2,I)=ALR(1,I)
      ALR(1,I)=(ATR(1,I)+VOTR(1,I))/2.
      Q=VOTR(1,I)-ATT(1,I)
      AIS(2,I)=AIS(1,I)
      AIS(1,I)=ABS(Q)
      COUPS=0.
      DO 52  K=1,5
   52 COUPS=COUPS+COUP(K,I)
      COUPS=COUPS/5.
      Q=A(35,J)+A(36,J)*TML(1,I)+A(37,J)*COUPS+A(38,J)*STR
     1+A(39,J)*CMIL(I)+A(40,J)*(LEX(1,I)/GDP(1,I))+A(41,J)*MILA(1,I)
      IF(Q.LT.0.0)Q=0.0
      TML(2,I)=TML(1,I)
      TML(1,I)=Q
      COUP(5,I)=COUP(4,I)
      COUP(4,I)=COUP(3,I)
      COUP(3,I)=COUP(2,I)
      COUP(2,I)=COUP(1,I)
      COUP(1,I)=A(42,J)+A(43,J)*COUPS+A(44,J)*TML(1,I)+A(45,J)*MILA(1,I)
     1+A(46,J)*(GDP(1,I)-GDP(4,I))/(POP(1,I)-POP(4,I))
      IF(COUP(1,I).LT.0.0)COUP(1,I)=0.0
      IF(COUP(1,I).GT.0.0)COUP(1,I)=1.0
      CONF(2,I)=CONF(1,I)
      CONF(1,I)=A(47,J)+A(48,J)*CONF(2,I)+A(49,J)*(DEX(1,I)-DEX(2,I))
     1+A(50,J)*(DEX(1,I)/GDP(1,I))
     2+A(51,J)*(USC(I)+SUC(I))
      IF(CONF(1,I).LT.0.0)CONF(1,I)=0.0
```

14

Main Control Program (Cont'd)

- -

Subroutine REG is called to compute coefficients for the linear relationship between DEX/POP and GDP/POP.
TR is computed from the ratio of computed DEX (from equations above) to estimated DEX (from regression).

- -

        CALL REG(DEX,POP,GDP,TR,M)

- -

Report sections 6-9 are printed. These can also be written on Unit 8 or 9.

- -

```
C
C  PRINT SECTIONS 6-9
        IF(T-IPRT)860,860,859
  859   CALL OI(6,2,2,M,ATT,VOTT)
        CALL OI(7,2,2,M,ATR,VOTR)
        CALL OI(8,2,2,M,ATS,ALR)
        CALL OI(9,2,2,M,CONF,TR )
        CALL OI(10,2,5,M,TML,COUP)
        WRITE (6,900) ISX
  900   FORMAT(1H1,20X,15A4)
C
```

15

Main Control Program (Cont'd)

For those nations with a coup probability greater than .75, a random number is computed and applied to the Markov transition matrices and the government type variable--GOVT--is set for the next model iteration. GOVT value is written.

```
C
C CHECK FOR CHANGES OF GOVERNMENT
860 DO 80 I=1,M
    IF (COUP(1,I).LT.0.75) GO TO 80
    J=GOVT(I)
    IF (I.GT.21) GO TO 62
    K=1
    XXX=546.
    IF (GDP(1,I)/POP(1,I).GT.XXX)  K=2
    GO TO 66
62 IF (I.GT.37)  GO TO 64
    K=3
    XXX=1386.
    IF (GDP(1,I)/POP(1,I).GT.XXX)  K=4
    GO TO 66
64 K=5
66 CALL RANDU(IX,IY,YFL)
    IF (YFL.GT.TM(K,J,1)) GO TO 68
    JN=1
    GO TO 72
68 IF (YFL.GT.TM(K,J,2)) GO TO 70
    JN=2
    GO TO 72
70 JN=3
72 IF(T-IPRT)74,74,75
75 WRITE(6,902) (NAMC(J,I),J=1,2),GOVT(I),JN
902 FORMAT(29X,2A4,9X,I1,14X,I1)
74 GOVT(I)=JN
    IX=IY
80 CONTINUE
    IHERM=T+1960.
    IF(T-IPRT)84,84,85
85 WRITE(6,910) IHERM
910 FORMAT(//39X,19HEND OF REPORT FOR ,I4)
```

16

Main Control Program (Cont'd)

If the specified number of periods have not been processed, program execution continues for an additional iteration.

```
      84 NYEAR=NYEAR-1
         IF (NYEAR) 999,999,990
```

If the by-pass code--KODE--is set to 1, U.S. and Soviet policy data for the coming iteration are read and control is returned to statement 30 to repeat computations. If the by-pass code is set to 0, existing values for U.S. and Soviet policy variables will be used in the coming iteration.

```
      C
      C REPEAT COMPUTATIONS FOR NEXT YEAR
      990 IF (KODE) 992,30,992
      992 DO 996  I=1,M
          DO 994  K=1,5
          K1=K+1
          USM(K1,I)=USM(K,I)
          SUM(K1,I)=SUM(K,I)
      994 CONTINUE
          READ 816,USC(I),SUC(I),USA(I),SUA(I),UST(I),SUT(I)
          1,USM(1,I),SUM(1,I)
      996 CONTINUE
          GO TO 30
```

If the specified number of iterations have been processed, execution is terminated.

```
      C
      C TERMINATE PROGRAM EXECUTION
      999 STOP
          END
```

17

Subroutine STD

Purpose: To compute standardized values of a given variable, V.

- -

```
0001            SUBROUTINE STD(M,V)
0002            DIMENSION V(M)
0003            S=0.
0004            DO 10    I=1,M
0005         10 S=S+V(I)
0006            A=S/M
0007            SS=0.
0008            DO 20   I=1,M
0009            X=V(I)-A
0010            SS=SS+X*X
0011         20 CONTINUE
0012            SS=SQRT(SS/M)
0013            DO 30   I=1,M
0014         30 V(I)=(V(I)-A)/SS
0015            RETURN
0016            END
```

Subroutine RANDU

Purpose: To generate uniform random numbers in the range 0.0 - 1.0.

- -

```
0001                    SUBROUTINE RANDU(IX,IY,YFL)
0002                    IY=IX*65539
0003                    IF (IY)  5,6,6
0004                 5  IY=IY+2147483647+1
0005                 6  YFL=IY
0006                    YFL=YFL*.4656613E-9
0007                    RETURN
0008                    END
```

- -

Note: This subroutine is taken from the SSP package. Random numbers can
be written on Units 8 and 9.

Subroutine REG

Purpose: To perform a linear regression of DEX/POP on GDP/POP and to compute TR from the estimated value of DEX and DEX as computed in Main.

- -

```
0001              SUBROUTINE REG(D,P,G,T,M)
0002              DIMENSION D(2,M),G(4,M),P(4,M),T(2,M),W(65)
0003              F=M
0004              SX=0.
0005              SY=0.
0006              SX2=0.
0007              DO 10  I=1,M
0008              Y=D(1,I)/P(1,I)
0009              X=G(1,I)/P(1,I)
0010              SY=SY+Y
0011              SX=SX+X
0012              SXY=SXY+X*Y
0013              SX2=SX2+X*X
0014              W(I)=X
0015          10  CONTINUE
0016              B=(SX*SY-F*SXY)/(SX*SX-F*SX2)
0017              A=(SY-B*SX)/F
0018              DO 20  I=1,M
0019              Z=(A+B*W(I))*P(1,I)
0020              T(1,I)=100.*D(1,I)/Z
0021          20  CONTINUE
0022              RETURN
0023              END
```

- -

Note: Various intermediate quantities used in the computation, as well as the linear coefficients, are written to tape 8.

Subroutine ITYP

Purpose: To set an index to "1" for countries 1-21 (Latin America); to "2" for countries 22-36 (Middle East); and to "3" for countries 37-65 (Africa).

- -

```
0001              SUBROUTINE ITYP(I,J)
0002              IF (I-21)  10,10,12
0003           10 J=1
0004              GO TO 18
0005           12 IF (I-36) 14,14,16
0006           14 J=2
0007              GO TO 18
0008           16 J=3
0009           18 RETURN
0010              END
```

Subroutine 01

Purpose: To write the output report for a pair of variables and to compute and print % changes from the previous period.

```fortran
0001        SUBROUTINE 01(NS,N1,N2,M,Y1,Y2)
0002        COMMON/ONE/NAMC(2,65),HEAD(15,10),IS(15),KODE
0003        DIMENSION Y1(N1,M),Y2(N2,M)
0004        INTEGER HEAD
0005        WRITE(6,901)  (HEAD(J,NS),J=1,15),IS
0006   901  FORMAT(1H1,20X,15A4/21X,15A4)
0007        DO 14  I=1,M
0008        IF (I.EQ.22.OR.I.EQ.37) WRITE (6,901)  (HEAD(J,NS),J=1,15),IS
0009        A=Y1(1,I)
0010        B=Y1(2,I)
0011        C=Y2(1,I)
0012        D=Y2(2,I)
0013        IF (B.LT.-.0001.OR.B.GT.0.00001) GO TO 6
0014        E=100.
0015        IF(A.GT.-.001.AND.A.LT.0.001)E=0.0
0016        GO TO 8
0017   6    E=100.*((A-B)/B)
0018   8    IF (D.LT.-.0001.OR.D.GT.0.0001) GO TO 10
0019        F=100.
0020        IF(C.GT.-.001.AND.C.LT.0.001)F=0.0
0021        GO TO 12
0022   10   F=100.*((C-D)/D)
0023   12   IF(NS.EQ.5.0.AND.KODE.EQ.50.0.0)F=0.0
0024        IF (NS.-4) 2,2,4
0025   2    WRITE(6,902) (NAMC(J,I),J=1,2),A,E,C,F
0026   902  FORMAT(9X,2A4,5X,F10.0,6X,F8.2,8X,F10.0,6X,F8.2)
0027        GO TO 14
0028   4    WRITE (6,903)   (NAMC(J,I),J=1,2),A,E,C,F
0029   903  FORMAT(9X,2A4,5X,F10.3,6X,F8.2,3X,F10.3,6X,F8.2)
0030   14   CONTINUE
0031   20   CONTINUE
0032        RETURN
0033        END
```

22

Model Variables

POP (J, I)	=	Population for T-(J-1) Period for Nation I
GDP (J, I)	=	Gross Domestic Product
CONS (J, I)	=	Consumption Expenditures
INV (J, I)	=	Investment
DOM (J, I)	=	Domestic Government Spending
DEX (J, I)	=	Defense Spending
TIM (J, I)	=	Total Imports
TEX (J, I)	=	Total Exports
MILM (J, I)	=	Military Manpower
MILA (J, I)	=	(Military Aid from U.S.) + (Military Aid from USSR)
ATT (J, I)	=	Alignment Trade Theta
VOTT (J, I)	=	Alignment Voting Theta
ATR (J, I)	=	Alignment Trade R
VOTR (J, I)	=	Alignment Voting R
AIS (J, I)	=	Alignment Instability
ALR (J, I)	=	Composite Alignment R
CONF (J, I)	=	Conflict
TR (J, I)	=	Tension Ratio
TML (J, I)	=	Turmoil
COUP (J, I)	=	Coup Propensity
GOVT (J, I)	=	Government Type
GPCL (J, I)	=	ALOG10 (GDP/POP)
USC (I)	=	U.S. Cooperative Acts for Period T to Nation I
SUC (I)	=	Soviet Cooperative Acts for Period T to Nation I
AID (I)	=	USA(I)/(SUA(I)+1.0) [See Below]
TM (I, J, K)	=	Transition Matrix for Region I from Type J to Type K
IS	=	Label
ISX	=	Label
KAD (I)	=	Rival for Defense Spending Equation for Nation I
NAMC (J, I)	=	Country Name for Country I
HEAD	=	Label
KODE	=	0 if No Policy Change, $\neq 0$ if Policy Change

NON (J, I)	=	% Non-Agricultural Employment for Period T-(J-1) for Nation I
URB (J, I)	=	% Urbanization
NONL (I)	=	ALOGIO (% Non-Agricultural Employment)
LITL (I)	=	ALOGIO (% Literate)
URBL (I)	=	ALOGIO (% Urbanization)
ARM (I)	=	$SUT/((UST**Z)+(SUT**Z))**0.5$ [See Below]
CMIL (I)	=	Δ Military Manpower
CDEX (I)	=	Δ Defense Spending
USM (J, I)	=	U.S. Military Aid
SUM (J, I)	=	USSR Military Aid
UST (I)	=	U.S. Arms Sales to Nation I
SUT (I)	=	USSR Arms Sales to Nation I
USA (I)	=	U.S. Economic Aid
SUA (I)	=	USSR Economic Aid
USP	=	U.S. Population
SUP	=	USSR Population
USG	=	U.S. GDP
SUG	=	USSR GDP
B (J, I)	=	Country-Specific Coefficients for Economic Sector
A (J, K)	=	Region-Specific Coefficients for Political Sector
C (L)	=	Coefficients for U.S. and USSR Population and GDP
T	=	Time Index (10 = 1970)
IX	=	Seed for Random Number Generation
IPRT	=	Print Control (10 Starts Printing in 1971)
M	=	Number of Countries
NYEAR	=	# of Years of Forecast Desired (from 1970)

All other variables are local variables used to save core space in DO Loops of computations. Their specific meaning at a particular point in the program is given by the program statement defining them. In some cases, local variables will represent different partial calculations at different points in the program. For example, the variable "Q" appears several times in several DO Loops. Its purpose is to retain partial computations temporarily.

24

ANNEX IV

Parameters

- -

The matrix A is arrayed as A (59, 3). Matrix A contains the region-specific
coefficients for the remainder of the equations.

- -

A 1	-1.04584	-7.29058	11.77323
A 2	0.19563	0.0	0.0
A 3	-27.68307	-13.84154	-386.29395
A 4	0.0	7.85290	0.0
A 5	0.01000	0.08166	0.00750
A 6	5.25736	0.72904	1.12170
A 7	-2.47195	-13.54843	-6.51955
A 8	0.80756	2.20238	1.29763
A 9	0.0	-0.62929	0.0
A10	0.08074	0.0	0.0
A11	0.0	-1.40675	0.0
A12	-1.32034	-5.32206	-7.22367
A13	0.79689	1.29441	1.51263
A14	0.0	-0.51261	-0.28429
A15	0.0	0.0	0.0
A16	0.0	-2.04213	0.0
A17	23.66756	-11.22193	-5.52000
A18	-3.29508	0.0	1.08084
A19	0.01863	-0.03430	-0.13018
A20	0.01877	0.03020	0.46446
A21	0.00176	-0.00010	-0.00416
A22	-0.01442	0.00114	0.00857
A23	0.44984	0.65784	0.44984
A24	0.28688	0.0	0.28688
A25	0.07211	0.04617	0.07211
A26	0.22770	0.17646	0.22770
A27	-0.00089	-0.00408	-0.00089
A28	0.12271	0.43637	0.12271
A29	0.0	-0.18606	0.0
A30	0.0	0.02056	0.0
A31	-0.00057	0.0	-0.00057
A32	0.91264	0.54649	0.91264
A33	-0.02536	0.0	-0.02536
A34	0.0	-0.00012	0.0
A35	-1.18745	-0.54056	-0.48620

A36	0.75720	0.71976	1.41730
A37	0.70260	0.96328	-2.39694
A38	0.27233	0.0	0.0
A39	0.0	-0.76165	0.0
A40	22.95810	0.0	13.58900
A41	-0.09864	0.0	0.0
A42	0.55855	0.04600	0.20836
A43	0.50437	0.41069	0.75102
A44	0.13209	0.51983	0.13618
A45	0.05673	-0.02679	0.0
A46	-0.00491	-0.00267	-0.00044
A47	0.23398	0.44360	0.06939
A48	0.40489	0.0	0.43046
A49	0.00170	0.0	0.0
A50	-13.43927	6.33715	5.71703
A51	0.0	0.12980	0.17066
A52	3.16494	1.61150	-0.55602
A53	0.0	0.76043	0.0
A54	0.0	1.47047	0.0
A55	20.66756	-11.69730	-5.52000
A56	-3.29590	1.56470	1.08084
A57	3.16494	0.57827	-0.55602
A58	0.0	0.70710	0.0
A59	0.0	5.14954	0.0

- -

The matrix B is arrayed as B (16, 65) and contains the country-specific
coefficients for the POP, CONS, INV, DOM, TIM and TEX equations.

- -

ARGENTIN	1.01500 -751.07983	0.23018	0.78595
	1392.89990	0.50000 -88.31599	0.98669
	0.0	4.83810 628.04980	0.02380
	9.80980 783.56982	0.02171	11.42900
BOLIVIA	1.02600 17.47299	0.20000	0.70000
	26.54300	0.40000 -10.62000	0.0
	0.10761 0.0	21.15900	0.16914
	0.0 -53.92999	0.26199	0.0
BRAZIL	1.02900 ****** ****	0.25965	0.78595
	754.91992	0.40000 -366.66992	0.98669
	0.0	4.83810 321.66992	0.02380
	0.98098 255.88989	0.02171	11.42900
CHILE	1.02400 139.34000	0.20417	0.73590
	240.84599	0.40000 28.67899	0.98669
	0.0	4.83810 502.30981	0.02380
	9.80980 592.46997	0.02171	11.42900
COLOMBIA	1.03200 198.42000	0.20417	0.78595
	540.87988	0.40000 -36.10899	0.98669
	0.0	4.83810 265.54980	0.02380
	0.98098 181.56999	0.02171	11.42900

2

```
COS RICA     1.03200    -1.61450     0.20000      0.75000
            78.23799     0.40000     1.58200      1.05000
             0.0         0.0       119.31000      0.01191
            26.75699    80.29599     0.00716     23.96399
CUBA         1.02000   -30.83299     0.20417      0.75000
            68.78299     0.40000   -32.22400      0.98669
             0.0         4.83810   502.30981      0.02380
             9.80980   181.56999     0.02171     11.42900
DOM REPB     1.02900  1339.29980     0.20672      0.65000
            53.83600     0.40000     9.07630      0.25000
             0.06692     0.0       -89.57400      0.16022
            19.83400   144.95999     0.09336    -23.14799
ECUADOR      1.03400    -0.26298     0.20000      0.75000
           -54.20499     0.40000  -110.64999      0.0
             0.16547    30.92799   139.64000      0.16616
           -13.83500    46.50399     0.00716     23.96399
EL SALVA     1.03700   -24.33099     0.58026      0.31021
            20.98499     0.40000    16.65599      0.50000
             0.03402     0.0        40.89099      0.37565
           -47.79500     6.97460     0.26500    -12.19600
GUATEMAL     1.02900   214.42000     0.20000      0.65000
            19.40799     0.40000    50.00000      0.66700
             0.15094   -13.69300    86.95499      0.01191
            26.75699    89.37199     0.00716     23.96399
HAITI        1.02100     5.86830     0.21587      0.65000
            49.55399     0.40000     6.17380      0.50000
             0.04680     0.0        -8.22640      0.11448
             0.0        44.24999     0.11040     -7.35400
HONDURAS     1.03100     5.96210     0.21587      0.75000
            11.94400     0.50000     8.73920      0.20000
             0.09168     0.0       -77.43599      0.41677
            -4.37110   -67.57399     0.39549     -5.81180
JAMAICA      1.02400   106.50000     0.20000      0.60000
           148.71999     0.40000   -46.32399      0.80000
             0.07074     0.0       461.12988      0.11448
             0.0       343.86987     0.11040    -14.70800
MEXICO       1.03500   900.00000     0.20000      0.75000
           438.00000     0.60000  -431.50977     -0.79556
             0.14320     0.0       **********     0.15000
            85.57399  -507.90991     0.32930     40.97699
NICARAGU     1.03700    50.78099     0.12734      0.79615
             3.87280     0.50000   -13.48860      0.43760
             0.08186     0.0        75.67799      0.15141
             0.0        48.45799     0.14853      0.0
PANAMA       1.03000    94.10500     0.20000      0.60000
           -24.78200     0.40000   -15.67000      0.91000
             0.01801     0.0       -71.01999      0.41677
            -4.37110  -198.23999     0.39549     -5.81180
```

3

PARAGUAY	1.03400	48.02699	0.20000	0.65000
	16.02599	0.40000	-23.32399	0.60000
	0.09500	0.0	-29.84900	0.14952
	0.0	-31.25200	0.19775	-5.81180
PERU	1.03100	-196.25000	0.50000	0.40000
	235.40999	0.40000	-55.42799	1.04200
	0.01430	0.0	793.98999	0.30563
	-97.81200	605.63989	0.05341	-5.12050
URUGUAY	1.01200	3.36360	0.20417	0.65000
	25.54300	0.40000	4.75370	0.98669
	0.0	4.83810	111.60999	0.02380
	9.80980	104.42300	0.02171	11.42900
VENEZUEL	1.03400	1129.50000	0.34806	0.0
	1321.39990	0.30000	-649.87988	1.00730
	0.0	78.85799	924.54980	0.02947
	6.69070	2242.89990	0.05341	-5.12050
ALGERIA	1.03500	128.03999	0.05283	0.95000
	334.13989	0.40000	73.42599	1.25000
	0.0	-12.14700	131.39000	0.11182
	27.28499	196.71999	0.39392	-84.34999
EGYPT	1.02500	338.54980	0.60614	0.0
	561.39990	0.27328	32.71100	0.75000
	0.07358	0.0	2127.59985	0.15384
	-72.06000	736.01978	0.07763	-19.24500
IRAN	1.03000	1921.69995	0.21130	0.40000
	187.26999	0.50000	-337.19995	0.55008
	0.17048	0.0	211.93999	0.17863
	-15.04100	1178.00000	0.40339	-48.59499
IRAQ	1.03300	141.95999	0.42350	0.05000
	266.70996	0.25000	-5.87550	0.55000
	0.05910	0.0	-89.87900	0.00861
	27.28499	363.97998	0.18960	0.0
ISRAEL	1.02900	259.37988	0.51000	0.0
	550.06982	0.25000	34.00999	0.50000
	0.10650	-73.23400	123.81000	0.27737
	-55.54799	-67.86400	0.15501	0.0
JORDAN	1.03400	54.05600	0.20000	0.60000
	3.93610	0.30000	-36.35699	0.60000
	0.11443	0.0	61.46399	0.20582
	0.0	-12.49300	0.08635	0.0
KUWAIT	1.09800	-66.53000	0.29000	0.0
	96.53699	0.40000	8.71600	0.88594
	0.01000	0.0	136.67999	0.17863
	-15.04100	529.94995	0.40339	-97.19099
LEBANON	1.03000	105.67999	0.20000	0.70000
	147.65999	0.25000	-9.07110	0.50000
	0.10152	0.0	252.68999	0.19450
	0.0	256.37988	0.07584	-55.73399

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LIBYA	1.03700	-18.53799	0.17720	0.45000
	185.85999	C.25000	-21.32500	1.10000
	0.0	0.0	58.78099	0.17863
	-14.00000	618.75000	0.30340	-90.00000
MORROCCO	1.02900	232.81000	0.20000	C.70000
	176.18999	0.40000	-81.41100	0.40000
	0.06691	16.31699	92.70599	0.15745
	-0.28442	166.75000	0.10679	-1.79850
SAU ARAB	1.02800	223.75000	0.10000	0.80000
	87.29599	0.30000	235.60999	C.80000
	0.10548	0.0	-20.67899	0.27314
	-44.28400	961.79980	0.35000	C.0
SUDAN	1.02700	577.21997	0.31797	0.0
	134.87000	C.40000	-37.00999	0.50000
	0.10000	0.0	-94.75800	0.21295
	-7.57530	-4.62080	0.26951	-12.95100
SYRIA	1.03400	237.12000	0.20000	0.45000
	60.20699	0.40000	29.01399	0.92161
	0.0	46.66100	-202.29999	C.03594
	81.44399	-222.32983	0.40339	0.0
TUNESIA	1.02900	266.56982	0.47427	0.0
	193.48000	0.40000	47.91899	1.05000
	0.0	0.0	77.64499	0.15174
	0.0	-7.99120	0.13907	0.0
YEMEN	1.02700	-0.57200	0.05283	0.84560
	35.15099	C.40000	57.01099	1.06060
	0.0	-6.07350	131.89000	0.11182
	27.23499	473.64990	0.40339	-84.34999
BURUNDI	1.02000	11.67800	C.14041	0.84458
	79.72800	0.30000	-3.38300	1.05130
	C.0	4.61850	-8.98790	0.08677
	4.06400	-60.21500	0.07500	19.88100
CAMEROON	1.02100	-15.53500	0.30000	0.40000
	79.84200	C.40000	-6.08300	C.60000
	0.24142	-6.25590	78.54799	0.05883
	5.73910	79.80499	0.04760	7.01540
CEN AFRB	1.02500	11.67800	C.14041	0.84458
	79.72800	C.40000	-3.38300	1.10000
	0.0	4.61850	8.01940	0.08677
	4.06400	-25.44199	0.07500	19.88100
CHAD	1.02000	6.10250	0.23052	C.66000
	0.80504	0.40000	-15.25300	1.05000
	0.0	4.61850	-53.28699	0.02124
	25.61600	-42.37000	0.01615	19.50200
PR CONGO	1.02200	1.67800	0.14041	0.84458
	79.72800	C.40000	-3.38300	1.00000
	0.0	4.61850	38.01599	0.08677
	4.06400	-20.48799	0.07500	19.88100
DAHOMEY	1.02700	C.62970	0.23052	C.60000
	12.53700	0.30000	-13.44300	1.10000
	0.0	4.61850	-23.09399	0.02124
	25.61600	-30.30199	0.01615	19.50200

ETHIOPIA	1.01900	112.46999	0.50000	0.0
	56.43799	0.20000	-26.72499	0.60000
	0.06282	2.43230	-124.53999	0.00217
	11.53500	-33.35100	0.00132	5.96220
GAMBIA	1.02100	11.67800	0.14041	0.64460
	79.72800	0.30000	-0.66920	1.10130
	0.0	4.61850	4.73130	0.08677
	4.06400	-14.97500	0.07500	9.88100
GHANA	1.02900	423.30981	0.49786	0.0
	113.59000	0.20000	33.67899	1.15000
	0.0	-4.96410	209.85999	0.05883
	5.73910	159.59999	0.04760	7.01540
GUINEA	1.02300	11.67800	0.14041	0.84458
	79.72800	0.40000	-3.38300	1.05000
	0.0	4.61850	17.19699	0.08677
	4.06400	-44.96100	0.07500	19.88100
IVRY CST	1.02400	138.07999	0.48954	0.0
	50.11399	0.30000	-2.19700	0.50000
	0.19214	-9.64020	-27.02499	0.24089
	7.47500	-10.01300	0.35457	-11.64500
KENYA	1.02900	72.46100	0.61977	0.0
	116.09000	0.15000	-41.81000	0.85000
	0.10773	0.0	30.00099	0.03141
	24.74100	21.33400	0.01036	14.34200
LIBERIA	1.01900	11.67800	0.14041	0.74460
	79.72800	0.50000	-3.38300	0.85000
	0.02500	4.61850	64.11600	0.08677
	4.06400	8.04260	0.07500	19.88100
MALAGASY	1.02500	1.53580	0.23052	0.75000
	44.35100	0.40000	-15.51000	0.50000
	0.04000	4.61850	-35.89899	0.02124
	25.41600	-9.90340	0.01615	17.50200
MALAWI	1.02500	35.09599	0.67174	0.0
	8.79800	0.30000	-20.76999	1.05000
	0.0	4.61850	44.97299	0.13707
	0.0	28.45599	0.08616	0.0
MALI	1.02000	11.67800	0.14041	0.84458
	79.72800	0.50000	-25.38399	1.10000
	0.0	4.61850	-6.33670	0.08677
	4.06400	-99.87399	0.07500	19.88100
NIGER	1.02600	75.26700	0.15940	0.50000
	28.04300	0.14834	-18.74599	1.10000
	0.0	4.61850	-59.37999	0.24443
	8.48390	-14.19300	0.13309	0.0
NIGERIA	1.02500	548.85986	0.70715	0.0
	-292.14990	0.20000	-100.00000	0.75000
	0.07500	0.0	100.50999	0.05883
	5.73910	97.75899	0.04760	7.01540
RHODESIA	1.03300	-87.63899	0.21400	0.35000
	113.90999	0.40000	-8.76600	1.10000
	0.0	4.61850	194.46999	0.05883
	5.73910	205.20999	0.04760	7.01540

6

RWANDA	1.03200	11.67300	0.14041	0.84458
	79.72800	0.50000	-3.38300	1.05000
	0.0	4.61850	-5.30410	0.08677
	4.06400	-57.32700	0.07500	19.88100
SENEGAL	1.02400	11.67800	0.14041	0.84458
	79.72800	0.40000	-23.38300	1.10000
	0.0	4.61850	86.16800	0.08677
	4.06400	0.95852	0.07500	19.88100
SIE LEON	1.01500	-7.61790	0.14041	0.55000
	41.42699	0.27630	1.57060	1.05000
	0.0	4.61850	62.04500	0.05383
	5.73910	52.07700	0.04760	7.01540
SOMALIA	1.02300	11.67800	0.14041	0.84458
	79.72800	0.50000	-3.38300	1.05000
	0.0	4.61850	13.70200	0.08677
	4.06400	-45.21999	0.07500	19.88100
S AFRICA	1.02700	77.77299	0.50580	0.10000
	583.43994	0.25000	388.77979	0.80000
	0.05000	0.0	118.71999	0.21962
	-21.92799	50.84999	0.08179	36.85300
TANZANIA	1.02600	103.75999	0.22370	0.70000
	74.84999	0.40000	-7.54300	0.45000
	0.12957	-3.12550	-38.09299	0.09150
	21.58800	95.01500	0.09040	11.83500
UGANDA	1.02800	11.67300	0.14041	0.84458
	79.72800	0.50000	-33.38300	1.05000
	0.0	4.61850	-20.39200	0.08677
	4.06400	-68.59799	0.07500	19.88100
UP VOLTA	1.02100	18.36200	0.23052	0.66063
	8.33070	0.50000	-29.81299	1.05000
	0.0	4.61850	-76.85199	0.02124
	25.61600	-73.59899	0.01615	19.50200
ZAIRE	1.03900	-62.74500	0.25000	0.30000
	92.77499	0.30000	-51.69199	1.05000
	0.0	4.61850	462.55981	0.11953
	-12.67600	396.61987	0.16136	-3.38130
ZAMBIA	1.02600	35.01999	0.23610	0.30000
	116.09999	0.30000	-2.26900	1.05000
	0.0	4.61850	86.76900	0.23462
	0.0	22.63899	0.57561	0.0

7

C is arrayed as C (6). C (1) and C (2) are population growth rates for
the U.S. and USSR respectively. C (3) and C (4) are used in the U.S. GDP
equation while C (5) and C (6) are used to calculate Soviet GDP.

C 1	1.01100
C 2	1.01100
C 3	5.64242
C 4	0.13184
C 5	5.37329
C 6	0.03933

The transition matrices--TM--are of a dimension TM (3, 2) each. There are
five transition matrices, two each for Latin America and the Middle East
and one for Africa. For Latin America and the Middle East the use of
transition matrix 1 or 2 depends on the nation's per capita GDP, with
$546.00 the cut-off for Latin America and $1, 386.00 the Middle Eastern
cut-off.

TM1	0.50	0.75	0.30	0.70	0.35	0.65
TM2	0.10	0.50	0.20	0.60	0.10	0.50
TM3	0.40	0.80	0.30	0.70	0.10	0.40
TM4	0.10	0.40	0.10	0.50	0.05	0.20
TM5	0.05	0.30	0.05	0.30	0.05	0.20

ANNEX V
Data

- -

Two sets of U.S. and Soviet data are read. First, U.S. and Soviet popu-
lation levels are read and initialized according to Format 810. Then,
arrays of data representing U.S. and Soviet policies toward the nations
of Latin America, the Middle East, and Africa are read according to For-
mat 816. At the end of each model iteration, these values can be updated
by additional read statements (see statements 990 through 996).

- -

```
204.90   241.70

   1.0      0.0      1.6      0.0      0.5      0.0
   0.6      0.0     11.7      0.0     11.3      0.0
  15.6      0.0     27.3      0.0     14.5      0.0
   2.0      1.0      9.3      0.0      0.9      0.0
   1.3      0.0      1.9      0.0      2.2      0.0
   3.5      0.0      2.7      0.0      1.9      0.0
   4.0      0.0    154.8      0.0      0.5      0.0
   0.8      0.0      0.8      0.0     36.1      0.0
  32.6      0.0     30.6      0.0     11.2      0.0
   1.0      2.0     27.1      0.0      0.6      0.0
   0.8      0.0     11.7      0.0      7.8      0.0
   4.2      0.0     10.2      0.0      9.9      0.0
   0.0      0.0    137.7      0.0      0.5      0.0
   5.6      0.0      3.7      0.0      4.6      0.0
   9.2      0.0     12.3      0.0      9.8      0.0
   1.0      0.0     20.7      0.0      1.0      0.0
   0.1      0.0      0.0      0.0      0.0      0.0
   0.0      0.0      0.2      0.0      0.2      0.0
   1.0      1.0      0.0      0.0      0.0      1.0
   0.0      0.0      0.0      0.0      0.0      0.0
   0.0      0.0      0.0      0.0      0.0      0.0
   0.0      0.0     22.5      0.0      1.0      0.0
   2.0      0.0      2.6      0.0      2.5      0.0
   2.7      0.0      2.9      0.0      1.7      0.0
   0.0      1.0     27.7      0.0      0.4      0.0
   1.9      0.0      2.3      0.0      2.3      0.0
   6.4      0.0      3.3      0.0      4.0      0.0
   0.0      0.0     13.2      0.0      0.6      0.0
   0.6      0.0      0.4      0.0      0.4      0.0
   0.3      0.0      0.7      0.0      0.5      0.0
   3.0      0.0     33.4      0.0      1.0      0.0
   1.2      0.0      2.3      0.0      1.0      0.0
   2.1      0.0      1.3      0.0      1.3      0.0
   1.0      0.0      3.7      0.0      0.0      0.0
   0.0      0.0      0.0      0.0      0.0      0.0
   0.0      0.0      0.0      0.0      0.0      0.0
```

1

1.0	0.0	7.6	0.0	0.6	0.0
0.4	0.0	0.8	0.0	0.8	0.0
0.3	0.0	1.0	0.0	0.9	0.0
0.0	0.0	2.1	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.6	0.0	0.0	0.0
18.0	0.0	1.1	0.0	0.7	0.0
8.1	0.0	1.5	0.0	0.1	0.0
0.1	0.0	0.2	0.0	0.8	0.0
1.0	0.0	4.1	0.0	0.9	0.0
1.0	0.0	0.8	0.0	1.1	0.0
1.1	0.0	1.3	0.0	1.1	0.0
1.0	0.0	14.4	0.0	0.6	0.0
0.9	0.0	0.3	0.0	0.2	0.0
0.5	0.0	0.6	0.0	0.2	0.0
0.0	0.0	9.2	0.0	0.5	0.0
1.1	0.0	1.2	0.0	1.1	0.0
1.0	0.0	1.7	0.0	2.9	0.0
6.0	5.0	17.5	53.0	0.2	0.0
0.6	0.0	0.5	0.0	1.4	0.0
4.8	0.0	9.9	0.0	11.5	0.0
0.0	0.0	21.5	15.0	0.7	0.0
2.1	0.0	1.6	0.0	1.8	0.0
1.5	0.0	5.0	0.0	2.8	0.0
0.0	0.0	3.5	10.0	0.4	0.0
0.8	0.0	0.8	0.0	1.0	0.0
0.9	0.0	11.9	0.0	11.7	0.0
1.0	2.0	2.2	74.0	0.0	0.9
0.0	0.0	0.0	0.0	0.0	0.0
0.0	30.0	0.0	0.0	0.0	85.0
0.0	22.0	0.0	200.0	0.0	0.9
0.0	200.0	0.0	275.0	0.0	300.0
0.0	340.0	0.0	75.0	0.0	35.0
2.0	0.0	4.0	54.0	0.6	0.2
2.6	0.0	127.8	0.0	122.1	0.0
196.3	110.0	153.4	0.0	82.4	0.0
0.0	2.0	0.2	65.0	0.0	0.8
0.0	0.0	0.0	10.0	0.0	0.0
0.1	50.0	0.2	30.0	0.2	10.0
15.0	0.0	71.1	0.0	0.8	0.0
30.0	0.0	85.0	0.0	25.0	0.0
7.0	0.0	90.0	0.0	12.9	0.0
11.0	2.0	4.1	0.0	0.8	0.0
0.2	0.0	14.2	0.0	0.4	0.0
13.0	0.0	20.3	0.0	3.7	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	8.5	0.0	0.1	0.0
0.1	0.0	0.1	0.0	0.1	0.0

0.0	0.0	0.1	0.0	0.1	0.0
1.0	1.0	0.5	0.0	0.1	0.2
0.1	0.0	0.4	0.0	1.1	0.0
1.8	0.0	2.3	0.0	2.0	0.0
0.0	0.0	28.8	44.0	0.5	0.0
0.8	0.0	11.7	0.0	1.7	5.0
17.3	10.0	6.6	1.0	10.9	0.0
0.0	0.0	0.5	0.0	0.6	0.0
1.5	0.0	0.6	0.0	30.8	0.0
86.2	0.0	73.4	0.0	1.3	0.0
0.0	0.0	0.0	10.0	0.0	0.7
0.0	0.0	0.0	0.0	0.0	60.0
1.6	0.0	0.1	0.0	0.3	0.0
1.0	0.0	0.1	0.0	0.0	0.9
0.0	0.0	0.0	200.0	0.0	0.0
0.0	75.0	0.0	200.0	0.0	0.0
0.0	0.0	44.8	0.0	0.6	0.0
3.2	0.0	3.5	0.0	2.6	0.0
5.2	0.0	0.7	0.0	0.3	0.0
0.0	0.0	0.0	0.0	0.0	0.9
0.0	0.0	0.0	0.0	0.0	50.0
0.0	15.0	0.0	0.0	0.0	0.0
0.0	0.0	1.6	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.6	0.0	0.3	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.5	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.8	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.3	0.0	0.0	0.7
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.5	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	30.0	0.0	0.8	0.0
11.1	0.0	11.9	0.0	11.6	0.0
16.7	0.0	14.8	0.0	8.7	0.0
0.0	0.0	0.3	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0

0.0	0.0	31.2	0.0	0.0	0.1
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	2.0	0.5	0.0	0.0	0.7
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.1	1.0	0.8	0.0
2.0	0.0	0.7	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	8.7	0.0	0.1	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	8.5	0.0	1.0	0.0
0.5	0.0	0.5	0.0	0.7	0.0
0.8	0.0	0.6	0.0	1.1	0.0
0.0	0.0	1.2	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.7	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.3	0.7
0.0	0.0	0.0	0.0	0.0	0.0
0.1	0.0	0.7	0.0	0.4	0.0
0.0	0.0	1.2	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
9.0	3.0	48.3	7.0	0.1	0.2
0.0	0.0	0.0	0.0	0.0	0.0
0.2	15.0	0.3	0.0	0.3	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.6	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	4.2	0.0	0.2	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.3	0.0	0.2	0.0
0.0	0.0	2.4	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	3.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.1	0.0

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	4.8	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	3.2	0.0	0.0	0.3
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	2.2	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	14.9	0.0	0.6	0.0
1.8	0.0	2.4	0.0	2.1	0.0
3.4	0.0	3.2	0.0	5.9	0.0
1.0	0.0	0.2	0.0	0.1	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0

Arrays of data on the forecast variables for each of the 65 Latin American, Middle Eastern, and African nations are read according to Format 803. Forty-six (46) variables, some of which are logged data, are read for each country.

```
ARGENTIN   2
23.4 23.1 22.125CC5.23C2C.21C3T.1ECC6.78 5001.58 1777.9E   480.001694.1773.
1.4000.0070.463C.9930.75EC.456C.E74C.13C 40.13-0.08U
0.0 1.0G00.0  C.0  0.0  .E5.E5.E5.E4.E4.EC.83.83.7C.8C.79.78.78.E9.76.7E

BOLIVIA   2
4.9  4.9  4.7 1017.  93C.  E5E.  752.E2  142.16   54.05   19.00  1E9.  227.
0.1700.0  0.5721.CCCC.72iC.5730.E66C.1iE 4C.90 3.460
0.0  0.0  1.CC00.0  .41.41.41.41.30.40.40.25.34.33.33.32.33.32.31

BRAZIL   2
93.2 90.6 88.C57313.2165.28554.26E65.78 5970.03 3545.83 1054.002849.2739.
3.7500.0040.38EC.9560.72E0.382C.8Fi0.E3E 60.15-1.230
0.0  0.0  0.0 1.CCC0.0 .50.55.54.53.44.51.51.53.55.54.53.52.43.50.49

CHILE   1
8.8  8.6  8.4 6E91.  6i24.  54E7.  4EE3.i0 1003.65  791.74  145.00  931.1247.
0.7000.0  0.8211.CC00.7iEC.E2iC.E55C.23C 45.51-1.430
0.0  0.0  0.0  0.0  .i5.78.77.77.7E.72.75.74.74.73.71.70.68.68.67

COLOMBIA   1
21.1 20.4 19.E 84E9.  752i.  673E.  6E53.36 1E92.60  575.04   98.00  843.  736.
0.4500.0030.472C.957C.i63C.47CC.8900.i01 24.66 3.810
0.0  0.0  0.0  C.C  3.0  .56.6C.58.57.56.50.53.5i.52.59.58.57.55.50.53.52

COS RICA   1
1.7  1.6  1.6  947.  8E4.  764.  8E5.57  189.62  128.2i    3.00  317.  231.
0.0200.0  0.5891.CCCC.771C.389C.E850.3Ci 80.00-0.400
0.0  0.0  0.0  0.0  .55.55.54.53.53.52.51.50.36.3C.36.35.35.34.35.34

CUBA   3
8.6  8.4  8.3 4E24.  4c5E.  40C7.  3EC5.C8  676.61  497.02  290.001Ti1.104b.
1.4000.0  0.9820.C  0.547C.9i2C.4740.130 80.00-1.430
0.0  0.0  0.0  .E7.65.68.E7.EE.E6.65.64.58.57.53.53.53.59.53.53
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DOM REPB    2
 4.0  3.9  3.8 1472. 1314. 1155. 1162.31  206.46  151.66   30.00 278.  221.
0.1700.0 0.4051.CCCC.78CC.405C.883C.3C1  43.51  5.380
0.0  0.0  1.0000.0  1.CCC.40.52.51.45.44.37.33.33.30.30.31.33.32

ECUADOR     2
 6.1  5.9  5.7 1716. 1622. 1609. 1252.82  257.08  221.11   33.00 248.  218.
0.1600.0 0.7221.CC00.67CC.722C.839C.178  41.46  1.560
0.0  1.0000.0  C.C  1.000.46.46.46.45.45.43.44.44.37.38.37.37.36.36.36.36

EL SALVA    2
 3.5  3.4  3.3 1C26.  953.  917.  810.54  112.86   91.60   11.00 214.  228.
C.0400.0 0.17C1.CCCC.822C.17CC.911C.643  23.08-1.430
0.0  0.0  0.0  0.0  0.43.42.42.42.43.41.40.40.35.39.39.31.39.39.39

GUATEMAL    2
 5.2  5.1  4.9 1904. 1715. 1611. 1466.C8  247.52  123.32   29.00 284.  299.
0.1300.0 0.5051.CC0U.7520.5050.876C.130  32.52  2.880
0.0  0.0  0.0  1.CCC.37.37.37.36.36.36.35.37.31.30.30.32.29.29

HAITI       3
 4.2  4.1  4.C  5CC.  470.  433.  394.10   69.97   51.63    6.00  55.   40.
0.1200.0 0.4221.CCCC.865C.422C.9C3C.3C1  27.46-1.430
0.0  0.0  1.CC00.0  .23.22.22.21.20.19.18.17.17.16.15.15.15.15

HONDURAS    2
 2.6  2.5  2.4  711.  668.  648.  525.80  135.18   48.56    7.00 221.  171.
0.0600.0 0.37E1.CC00.7450.376C.872C.525  21.25-1.430
C.0  0.0  C.0  1.CCC.22.33.33.32.32.35.31.31.26.32.30.28.26.26.23.23

JAMAICA     1
 1.9  1.9  1.8 1283. 1161. 1042.  846.78  333.73  159.79    7.C0   0.    0.
0.0  0.0  0.64CI.CCCC.703C.64CC.851C.3C1 11.48-1.430
0.0  0.0  0.0  0.0  .73.72.71.7C.65.50.67.67.36.36.36.35.34.35.31.29

MEXICO      2
48.4 46.8 45.25456.2959.2712E.24117.82 6364.24 2124.72 220.002461.1402.
0.3000.0 0.5851.CC00.7520.585C.87CC.371 13.81-1.260
0.0  0.0  C.C  0.0  .53.59.58.5E.55.48.52.50.58.57.56.59.54.53

NICARAGU    3
 2.0  1.9  1.9  845.  758.  701.  825.30  126.75   80.95   12.00 198.  175.
0.0600.0 0.33E1.CCCC.75C.236C.887C.3C1  30.19-1.430
0.0  0.0  0.0  .44.44.43.42.42.42.41.40.44.45.44.45.44.43.36.42.41
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PANAMA     2
 1.4   1.3 1040.   945.   861.  679.90   251.04  133.98    2.00  353.  111.
0.0500.0  0.4421.0000.7690.4420.8850.212  4.02-0.620
0.0  0.0   0.0   0.0  .67-61.60.55.58.57.57.56.47.47.46.46.45.45.44.44.43
PARAGUAY   3
 2.4   2.2   555.   550.   518.   458.15   89.25   42.55   11.00   64.   64.
0.2000.0  0.4031.0000.8190.4030.9100.212 40.09-0.320
0.0  0.0   0.0   0.0  .47-46.46.46.50.45.45.35.36.36.36.43.36.36.36
PERU       2
13.6  13.2  12.6 4514.  3982.  3604.  3240.72  541.86  256.19  227.00 619.1044.
0.6000.0100.7630.9500.6810.7530.8360.271107.73 3.240
0.0  0.0   0.0   1.000.54.54.54.53.52.50.50.46.52.51.51.50.43.47.47
URUGUAY    1
 2.9   2.9   2.6 2418.  2148.  1920.  1827.68  265.98  314.70   48.00 233.  235.
0.1800.0400.5010.5620.7390.4610.8510.544 41.64-1.430
0.0  0.0   0.0   0.0  .74-83.82.82.83.81.80.84.78.77.76.76.82.75.74
VENEZUEL   1
10.4  10.1   9.710.997.10177.  9066.  5936.28 2529.31 1445.55  204.001713.2790.
0.4500.0  0.5611.0000.7490.5610.8740.130 38.79 3.030
0.0  0.0   0.0   0.0  .62-73.72.71.70.68.76.75.74.73.72.67.71.70
ALGERIA    2
14.3  13.8  13.3 4640.  4011.  3606.  3299.04 1057.92  538.24  100.001257.1009.
0.8000.4110.9500.7560.7050.5390.7310.720 46.21-0.240
0.0  0.0   1.000.0  .44-43.42.41.40.38.44.42.38.36.44.41.39.39.34.25
EGYPT      2
33.3  32.5  31.7 7214.  6924.  6201.  4688.59  865.60 1080.94  898.00 787.  762.
2.5500.9040.9360.7510.6520.0310.7022.295268.80-0.260
0.0  0.0   0.0   0.0  .45-44.44.44.43.44.42.41.41.40.40.39
IRAN       3
29.3  28.4  27.61167110221.  9050.  6765.18 2450.91 1119.07  865.001658.2355.
2.4500.0  0.6291.0000.6040.6290.8020.130157.84-0.620
0.0  0.0   0.0   0.0  .54-53.52.51.51.42.49.48.39.40.29.39.39.37.37.26
IRAQ       2
 9.4   9.1   8.6 3635.  3350.  3200.  1672.10  508.90  367.84  403.00 505.1100.
0.9500.9470.9580.7880.6950.0110.7440.866236.32-1.120
0.0  0.0   0.0   0.0  3.000.54.53.52.51.51.52.49.43.56.55.54.53.51.50.48
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ISRAEL    1
   2.9   2.8  2.7 5409.  4568.  3955. 3323.58 1298.16   565.24 1382.001422.   734.
1.0500.0020.5000.5000.6000.4580.7952.5570531.80-0.160
0.0  0.0  0.0  .89.89.89.89.89.88.88.88.81.82.82.82.80.80

JORDAN    3
   2.3  2.2  2.2  588.  618.  523.  446.50  106.13   55.45  105.00  184.   34.
0.7000.3000.9200.9580.5870.6200.6522.0022386.67-1.430
0.0  0.0  0.0  .61.61.60.60.55.56.58.44.46.45.45.44.45.44.43

KUWAIT    2
   0.7  0.6  0.6 3025.  2769.  2663.  540.42  930.50  532.91   67.00  625.1655.
0.1000.1030.9280.9110.5920.8250.7520.484  45.79-1.430
0.0  0.0  0.0  .99.99.99.99.99.80.56.56.55.5.75.54.54

LEBANON   1
   2.8  2.7  2.6 1497.  1405.  1344. 1287.42  284.43  122.37   42.00  568.  198.
0.1900.1980.8940.8450.5590.6970.7041.486  39.31-1.430
0.0  0.0  0.0  .53.52.51.51.50.45.49.45.40.40.39.38.36.35.34.34

LIBYA     3
   1.9  1.8  1.8 3722.  3548.  3101. 1075.46  930.50  532.91   94.00  676.2366.
0.1800.1300.9310.8920.6670.8020.7900.872  52.55 1.410
0.0  0.0  0.0  .57.56.55.53.52.60.50.48.23.27.27.26.26.24.25.24

MORROCCO  3
  15.4 15.0 14.5 3352.  2146.  3022. 2413.44  502.80  402.80  100.00  684.  488.
0.6500.3900.8820.7630.6580.4920.7100.538  65.13 1.410
0.0  0.0  0.0  .35.35.35.38.37.35.32.34.31.30.30.30.30

SAU ARAB  3
   7.7  7.5  7.3 5054.  3866.  3550. 1187.59  860.70  680.16  189.00  692.3845.
0.6500.0560.9440.9480.6040.8870.7760.358  78.10-1.430
0.0  0.0  0.0  .35.35.37.36.35.54.33.32.25.23.22.21.20.19.19

SUDAN     3
  15.7 15.3 14.9 1831.  1721.  1675. 1172.01  220.02  352.24   90.00  353.  293.
0.2500.5420.9610.7820.6670.0190.7350.597112.71 3.960
0.0  0.0  2.0000.0  .20.19.19.18.23.17.16.08.11.11.11.10.10.10

SYRIA     2
   6.3  6.1  5.9 1684.  1570.  1443. 1155.64  252.60  125.12  178.00  357.  203.
0.7500.9140.9730.7580.6850.0580.7231.535228.41 2.130
0.0  1.0000.0  0.0  1.000.51.51.50.50.45.44.43.47.23.43.42.41.40.39.39
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TUNESIA   2
 5.1 5.0 4.8 1423. 1294. 1193. 910.72 313.06 262.60   22.00 305. 183.
0.2500.0690.8450.5370.5800.7760.7580.120 33.35-1.430
0.0 0.0 0.0 0.0 .54.53.52.51.50.36.47.46.43.42.42.41.37.40.40
YEMEN   3
 5.7 5.0 5.4 456. 404. 358. 224.22 103.97   52.90   16.00 182. 146.
0.1300.9990.9500.5700.0430.7630.301 84.66 3.960
0.0 1.0000.0 0.0 0.0 .27.26.25.24.23.18.21.20.06.05.05.05.04.04
BURUNDI   3
 3.4 3.3 3.2 230. 205. 206. 144.44   58.88   31.97   3.00   22.   19.
0.0300.0 0.9371.0000.5440.5370.7720.301 32.46 4.000
0.0 2.0000.0 0.0 0.0 .14.14.13.13.05.12.11.03.02.02.02.02.02.02
CAMERJON   3
 5.8 5.7 1051. 1085. 1002. 752.38 141.55 164.41   19.00 242. 232.
0.0800.0430.7770.5600.4760.7340.7180.301 38.35 2.340
0.0 0.0 0.0 0.0 .18.18.17.16.16.15.14.13.19.18.17.16.16.15
CEN AFRB   3
 1.6 1.6 1.5 205. 204. 202. 128.74   52.46   43.78   5.00   34.   31.
0.0200.0 0.9361.0000.4270.5360.7140.201 55.39-2.500
0.0 1.0000.0 0.0 0.0 .13.12.11.10.11.09.08.24.32.30.29.27.27.21.20
CHAD   3
 3.7 3.6 270. 263. 256. 224.27   29.15   36.76   13.00   61.   30.
0.0700.0 0.8191.0000.4580.8190.7440.301118.07 4.000
0.0 0.0 0.0 0.0 .09.08.08.08.07.15.07.06.08.09.08.06.07.06
PR CONGO   3
 0.9 0.9 345. 283. 222. 216.66   98.32   47.96   6.00   57.   51.
0.0600.0 0.9410.0 0.5430.5410.2820.301 40.42 3.630
0.0 0.0 0.0 0.0 .05.54.53.52.35.51.50.28.29.28.27.27.30.23.20
DAHOMEY   3
 2.7 2.6 221. 212. 204. 181.33   28.33   30.60   4.00   64.   33.
0.0200.0 0.6311.0000.4120.6310.7060.301 43.51 1.760
1.0000.0 2.00CC.0 1.0CC.48.47.47.30.46.46.16.13.12.12.11.16.11.10
ETHIOPIA   3
25.0 24.5 24.1 1777. 1622. 1535. 1385.88 213.63 131.47   41.00 172. 122.
0.4500.1020.8500.9120.5880.7480.7500.400 56.80 3.240
0.0 0.0 0.0 0.0 .15.15.15.14.11.13.13.07.08.08.07.07.07.07

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GAMBIA      2
    0.4  0.4  0.4   4б.    4C.    28.69    11.78    6.39    1.12   18.   17.
0.0100.8480.8090.1260.2720.0390.4990.3010 53.89 1.760
0.0  0.0  0.0  0.0  .16.16.16.16.16.15.15.10.15 14.14.13.13.13.12
GHANA       2
    8.5  8.3  8.0 2214.  19e0. 1734. 1527.66  243.54  356.52  42.00 411.  433.
0.3500.2070.8720.6440.5510.0650.6970.301 41.04-1.430
0.0 1.0000.0   0.0  0.0   .45.44.44.43.42.40.41.40.34.30.29.28.16.26.25
GUINEA      3
    3.9  3.8  3.7  320.  391.  264.   200.56   81.94   44.48   18.00  54.   58.
0.0900.0  0.9841.0000.4580.9840.7490.763135.16-2.500
0.0  0.0  0.0  0.0  .16.16.16.15.15.14.13.11.10.09.09.07.08.08
IVRY CST    3
    4.3  4.2  4.1 1499. 1421. 1223.  892.15  269.10  221.20  18.00 388. 469.
0.0600.0  0.7071.0000.5050.7070.7550.301 25.75-1.430
0.0  0.0  0.0  0.0  .19.18.17.17.16.13.29.17.17.16.15.14.13.12
KENYA       3
   10.9 10.6 10.3 1611. 1457. 1343. 1079.37  322.20  241.76  16.00 397. 217.
0.0700.0360.8940.9660.9660.5810.8580.774C.267 22.26 3.240
0.0  0.0  0.0  0.0  .20.19.18.18.17.21.16.16.09.10.10.09.07.08.08
LIBERIA     3
    1.2  1.2  1.2  418.  397.  379.  262.50  107.01   58.10   4.00 150. 213.
0.0500.0060.6210.9940.6120.6140.6030.301 20.47 1.760
0.0  0.0  0.0  0.0  .26.25.25.24.23.21.22.21.29.10.09.09.09.08.08
MALAGASY    2
    7.3  7.1  6.9  899.  870.  843.  602.33  126.07  176.75  12.00 170. 145.
0.0900.0  0.6141.0000.5700.6140.7850.301 30.43-1.430
0.0  0.0  0.0  0.0  .16.13.12.11.11.10.09.13.14.13.13.12.12.12
MALAWI      3
    4.4  4.3  4.2  326.  296.  271.  254.28   58.68   47.90   1.00 109.  60.
0.0400.0  0.2301.0000.3910.2300.6550.130  7.50 2.030
0.0  0.0  0.0  0.0  .13.12.11.11.10.11.09.05.06.05.05.03.05.04
MALI        3
    5.3  5.2  5.1  267.  262.  257.  167.68   68.35   37.11   5.00  47.  33.
0.0800.0  0.9470.0  0.6660.9470.3430.301 50.09-2.500
0.0  0.0  0.0  0.0  .09.09.08.08.08.07.07.09.12.12.12.09.11.11
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NIGER
3
4.0 3.9 3.8 258. 312. 318. 258.64 12.15 35.34 4.00 58. 22.
0.0400.0 0.7561.0000.4950.7560.7450.301 32.79-2.500
0.0 0.0 0.0 0.0 0.0 .05.08-08.07.07-13.06.06.03.08.07.04.07.06

NIGERIA
3
55.1 53.3 52.4 7708. 5308. 4029. 6243.40 1079.61 427.59 441.001059.1240.
2.0000.0690.9160.9380.6950.847C.8181.C03128.87 1.400
0.0 1.0000.0 0.0 0.0 .33.33-32.32.31.30.21-22.22.21.14.20.19

RHODESIA
3
4.8 4.6 4.5 1511. 1381. 1197. 1012.37 241.76 156.32 25.00 279. 355.
0.1100.0 0.2781.0001.2730.2781.1360.342 35.51 0.530
0.0 0.0 1.0000.0 0.0 .27.36.36.35.34.37.33.33.20.18.17.17.16.15.16.16

RWANDA
3
3.7 3.6 3.5 211. 165. 164. 122.51 54.02 29.33 4.00 29. 25.
C.0400.0830.644C.560.457C.561C.712C.301 49.03 4.500
0.0 0.0 0.0 0.0 0.C .09.09.C8.C8.C7.05.06.06.C1.01.01.01.01.01.01.01

SENEGAL
3
3.9 3.8 3.7 852. 835. 877. 535.C6 218.11 418.43 17.00 193. 152.
0.0700.0 0.7551.CC00.5030.7550.7520.301 43.55-2.500
0.0 0.0 0.0 0.0 0.0 .24.24.23.22.21.25.20.19.27.26.25.24.24.24.23

SIE LEON
3
2.6 2.6 2.5 450. 443. 350. 337.25 72.12 32.51 3.00 116. 101.
0.0300.1660.852C.680.5160.665C.692C.176 14.76-1.430
1.0000.0 0.0 0.0 0.0 .27.27.26.26.25.11.24.24.14.14.13.13.07.13.12

SOMALIA
3
2.8 2.7 2.7 245. 244. 239. 156.37 63.74 34.61 11.00 65. 31.
0.2000.6400.981C.710C.612C.640C.610C.301104.84-1.430
0.0 0.0 0.0 0.0 0.0 .18.17.17.16.15.11.14.14.20.20.19.19.14.19.19

S AFRICA
2
21.4 20.8 20.2173257.155C8.14242.107261.33 4339.25 1724.84 358.003566.2151.
0.4000.0 0.2781.CCC0.354C.278C.658C.130 43.28-0.860
0.0 0.0 0.0 0.0 0.0 .7C.7C.7C.69.71.69.69.50.50.49.49.48.48

TANZANIA
2
13.3 13.0 12.6 1284. 1171. 1105. 859.80 269.64 148.92 18.00 272. 233.
0.2000.0470.94CC.560.7020.893C.829C.623 32.89-1.430
0.0 0.0 0.0 0.0 .14.14.13.13.14.12.12.06.06.C6.05.05.05.05

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UGANDA      3
  9.5   9.2   9.0 1323.  1168.  1037.    830.84   338.65   183.90     24.00 121.  248.
 0.1600.1640.9530.6650.6610.7850.7650.120 40.88 2.760
 0.0 1.0000.0   0.0  .14.14.13.13.09.12.12.07.06.08.07.07.03.07.06
UP VOLTA    3
  5.4   5.3   5.2   347.   341.   334.   295.05    31.17    44.67      4.00  47.  18.
 0.0400.0  0.8571.0000.4660.8570.7330.130 29.00 2.340
 0.0 1.0000.0   0.0  .11.11.11.10.10.14.10.09.05.04.03.03.03.07.03.03
ZAIRE       3
 21.6 20.8 20.0 2838.  1759.  1443.  1532.52   879.79   641.88     96.00 523.  781.
 0.4500.0040.7630.5970.4230.7590.7150.130 76.63 4.500
 0.0 0.0 1.0000.0   0.0  .22.21.21.20.20.30.18.18.17.14.13.12.12.10.10.10
ZAMBIA      2
  4.1   4.0   3.9 1659.  1726.  1365.   613.52   331.61   164.37     32.00 477.1001.
 0.1200.0350.9300.9660.9960.8980.8310.630 41.06 2.760
 0.0 0.0 0.0   0.0  .31.30.29.28.27.26.25.24.23.23.30.21.20.20.20.20
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ANNEX VI
Forecasts

The time frame for the current Joint Long-Range Strategic Study (JLRSS) is approximately 1985 to 1995. The forecasts shown below cover the boundaries of this period, 1985 and 1995, and the mid-year of this JLRSS period, 1990.

1985

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	29.	1.50	45349.	1.38
BOLIVIA	7.	2.60	1275.	4.21
BRAZIL	143.	2.9°	118458.	7.78
CHILE	13.	2.40	12191.	3.22
COLOMBIA	34.	3.20	22192.	4.87
COS RICA	3.	3.20	1670.	3.54
CUBA	12.	2.05	3591.	-0.58
DOM REPB	6.	2.90	11421.	1.14
ECUADOR	10.	3.40	2599.	5.31
EL SALVA	6.	3.70	1178.	3.92
GUATEMAL	8.	2.90	8483.	7.02
HAITI	6.	2.10	714.	2.35
HONDURAS	4.	3.10	1028.	2.41
JAMAICA	3.	2.40	2806.	2.63
MEXICO	81.	3.50	92928.	5.56
NICARAGU	3.	3.70	1744.	1.40
PANAMA	2.	3.00	356.	-9.22
PARAGUAY	4.	3.40	2365.	9.76
PERU	21.	3.10	7346.	3.88
URUGUAY	3.	1.20	3357.	2.44
VENEZUEL	17.	3.40	23460.	3.29

1990

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	32.	1.50	60299.	8.90
BOLIVI:	8.	2.60	1673.	5.98
BRAZIL	165.	2.9°	182978.	9.52
CHILE	14.	2.40	14736.	4.07
COLOMBIA	40.	3.20	29151.	5.83
COS RICA	3.	3.20	2011.	4.00
CUBA	13.	2.0°	3778.	1.96
DOM REPB	7.	2.90	12169.	1.16
ECUADOR	12.	3.40	3367.	5.32
EL SALVA	7.	3.70	1513.	6.21
GUATEMAL	9.	2.90	11621.	6.12
HAITI	6.	2.10	710.	-1.13
HONDURAS	5.	3.10	1255.	4.83
JAMAICA	3.	2.40	3094.	1.60
MEXICO	96.	3.50	117414.	4.53
NICARAGU	4.	3.70	1161.	2.47
PANAMA	3.	3.00	265.	-4.08
PARAGUAY	5.	3.40	3387.	5.39
PERU	25.	3.10	9787.	6.69
URUGUAY	4.	1.20	3698.	1.62
VENEZUEL	20.	3.40	28949.	8.81

1995

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	34.	1.50	74424.	1.37
BOLIVIA	9.	2.60	2128.	4.43
BRAZIL	196.	2.90	276918.	8.29
CHILE	16.	2.40	17253.	2.79
COLOMBIA	46.	3.20	36917.	4.37
COS RICA	4.	3.20	2494.	4.58
CUBA	14.	2.0°	4169.	1.32
DOM REPB	8.	2.90	12406.	0.08
ECUADOR	14.	3.40	4321.	4.95
EL SALVA	9.	3.70	1812.	2.03
GUATEMAL	11.	2.90	15161.	5.10
HAITI	7.	2.10	663.	-1.54
HONDURAS	6.	3.10	1478.	2.56
JAMAICA	3.	2.40	3303.	1.12
MEXICO	114.	3.50	145155.	4.10
NICARAGU	5.	3.70	1254.	1.05
PANAMA	3.	3.00	234.	-1.61
PARAGUAY	6.	3.40	4589.	6.50
PERU	29.	3.10	12961.	5.50
URUGUAY	4.	1.20	4132.	2.67
VENEZUEL	24.	3.40	34832.	4.87

1985

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	24.	3.50	9045.	1.18
EGYPT	48.	2.50	38282.	6.71
IRAN	46.	3.00	120364.	10.38
IRAQ	15.	3.30	12946.	2.32
ISRAEL	4.	2.90	2371.	20.00
JORDAN	4.	3.40	132.	2.78
KUWAIT	3.	9.80	856.	-2.45
LEBANON	4.	3.00	2611.	9.59
LIBYA	3.	3.70	7336.	3.95
MORROCCO	24.	2.90	7187.	3.11
SAU ARAB	12.	2.80	69576.	16.58
SUDAN	23.	2.70	6583.	8.34
SYRIA	10.	3.40	25945.	20.00
TUNESIA	8.	2.90	6089.	1.50
YEMEN	9.	2.70	16.	-20.00

1990

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	28.	3.50	11939.	5.31
EGYPT	55.	2.50	49012.	4.81
IRAN	53.	3.00	182988.	7.83
IRAQ	18.	3.30	13673.	0.58
ISRAEL	5.	2.90	2801.	-6.02
JORDAN	4.	3.40	137.	1.37
KUWAIT	5.	9.80	471.	-20.00
LEBANON	5.	3.00	3468.	3.84
LIBYA	4.	3.70	9447.	6.21
MORROCCO	27.	2.90	8264.	2.63
SAU ARAB	13.	2.80	133045.	13.77
SUDAN	27.	2.70	3840.	8.26
SYRIA	12.	3.40	64561.	20.00
TUNESIA	9.	2.90	10171.	12.34
YEMEN	10.	2.70	5.	-20.00

1995

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	34.	3.50	11159.	-3.21
EGYPT	62.	2.50	61595.	4.11
IRAN	61.	3.00	251854.	5.85
IRAQ	21.	3.30	13865.	0.14
ISRAEL	6.	2.90	1313.	-12.83
JORDAN	5.	3.40	139.	1.23
KUWAIT	7.	9.80	164.	-20.00
LEBANON	6.	3.00	4023.	2.58
LIBYA	5.	3.70	14129.	7.06
MORROCCO	31.	2.90	9250.	2.10
SAU ARAB	15.	2.80	250710.	12.01
SUDAN	31.	2.70	14251.	7.39
SYRIA	15.	3.40	121832.	8.09
TUNESIA	10.	2.90	13192.	0.92
YEMEN	11.	2.70	2.	-20.00

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1985

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	5.	2.00	1600.	3.26
CAMEROON	9.	2.1?	3112.	7.92
CEN AFRB	2.	2.50	1295.	9.96
CHAD	5.	2.00	489.	9.14
PR CONGO	1.	2.20	651.	3.70
DAHOMEY	4.	2.7?	34?.	16.79
ETHIOPIA	35.	1.90	746.	3.69
GAMBIA	1.	2.10	290.	7.41
GHANA	13.	2.90	3527.	5.72
GUINEA	5.	2.3?	1913.	9.19
IVRY CST	6.	2.40	2046.	-3.07
KENYA	17.	2.90	3121.	9.66
LIBERIA	2.	1.90	420.	1.47
MALAGASY	11.	2.50	4527.	13.64
MALAWI	6.	2.50	629.	11.04
MALI	7.	2.00	1244.	9.81
NIGER	6.	2.60	544.	7.26
NIGERIA	90.	2.50	13405.	4.15
RHODESIA	8.	3.30	1965.	11.78
RWANDA	6.	3.20	1795.	10.43
SENEGAL	6.	2.40	1978.	6.72
SIE LEON	3.	1.50	629.	9.39
SOMALIA	4.	2.3?	1465.	3.95
S AFRICA	32.	2.70	19301.	1.44
TANZANIA	20.	2.60	3637.	3.73
UGANDA	14.	2.80	3811.	6.13
UP VOLTA	7.	2.1?	295.	5.42
ZAIRE	35.	3.00	5969.	7.65
ZAMBIA	6.	2.60	3176.	6.42

1990

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	5.	2.00	2419.	3.25
CAMEROON	9.	2.10	3562.	9.35
CEN AFRB	3.	2.50	27?.	9.59
CHAD	5.	2.00	750.	8.99
PR CONGO	1.	2.20	714.	3.29
DAHOMEY	5.	2.70	651.	13.39
ETHIOPIA	36.	1.90	747.	-3.15
GAMBIA	1.	2.10	392.	6.52
GHANA	15.	2.90	5147.	3.89
GUINEA	6.	2.30	2893.	5.26
IVRY CST	7.	2.40	2046.	2.22
KENYA	19.	2.90	5245.	11.47
LIBERIA	2.	1.90	442.	0.64
MALAGASY	12.	2.50	7429.	13.36
MALAWI	7.	2.50	953.	7.25
MALI	8.	2.00	1911.	8.65
NIGER	7.	2.60	809.	8.97
NIGERIA	99.	2.50	16161.	3.61
RHODESIA	9.	3.30	3449.	11.71
RWANDA	7.	3.20	2794.	5.56
SENEGAL	6.	2.40	2932.	5.47
SIE LEON	4.	1.50	947.	5.07
SOMALIA	4.	2.30	2189.	7.90
S AFRICA	36.	2.70	22132.	2.37
TANZANIA	22.	2.60	4294.	3.07
UGANDA	17.	2.60	5476.	5.23
UP VOLTA	8.	2.10	420.	5.48
ZAIRE	46.	3.90	996?.	5.79
ZAMBIA	7.	2.60	4563.	7.52

1995

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	6.	2.00	3529.	7.60
CAMEROON	10.	2.10	5413.	9.99
CEN AFRB	3.	2.50	3167.	9.66
CHAD	6.	2.00	1139.	8.53
PR CONGO	2.	2.20	839.	3.28
DAHOMEY	5.	2.70	1209.	12.51
ETHIOPIA	41.	1.90	752.	1.23
GAMBIA	1.	2.10	571.	8.15
GHANA	17.	2.90	9124.	13.18
GUINEA	7.	2.30	4222.	7.64
IVRY CST	8.	2.40	1419.	-13.76
KENYA	22.	2.90	9233.	12.27
LIBERIA	2.	1.90	465.	1.21
MALAGASY	14.	2.50	13947.	3.77
MALAWI	8.	2.50	1455.	13.33
MALI	9.	2.00	3060.	9.89
NIGER	8.	2.60	1273.	9.51
NIGERIA	102.	2.50	19373.	3.23
RHODESIA	11.	3.30	5894.	11.11
RWANDA	8.	3.20	4187.	5.26
SENEGAL	7.	2.40	4364.	5.58
SIE LEON	4.	1.50	1364.	7.30
SOMALIA	5.	2.30	3151.	7.48
S AFRICA	42.	2.70	21961.	1.29
TANZANIA	25.	2.60	4414.	1.90
UGANDA	19.	2.60	7674.	6.32
UP VOLTA	9.	2.10	664.	3.57
ZAIRE	56.	1.90	17124.	7.63
ZAMBIA	8.	2.60	6245.	6.20

1985

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	33527.	4.90	2146.	-33.46
BOLIVIA	330.	4.21	43.	-29.05
BRAZIL	104777.	9.31	3923.	-18.77
CHILE	9096.	3.92	383.	-18.22
COLOMBIA	18338.	5.91	915.	-15.07
COS RICA	1224.	2.98	98.	4.37
CUBA	2343.	-0.36	57.	-35.47
DOM REPB	10162.	2.57	179.	-48.69
ECUADOR	1818.	5.00	0.	0.
EL SALVA	335.	5.23	41.	-27.26
GUATEMAL	4333.	6.71	227.	-4.65
HAITI	431.	3.32	63.	0.26
HONDURAS	827.	3.53	22.	-41.12
JAMAICA	1514.	2.35	181.	2.53
MEXICO	67545.	5.40	3295.	18.21
NICARAGU	846.	1.69	11.	-45.04
PANAMA	442.	-4.13	0.	0.
PARAGUAY	1297.	3.62	93.	18.86
PERU	5515.	5.04	321.	-23.01
URUGUAY	1901.	1.93	58.	20.17
VENEZUEL	8251.	2.83	1460.	-21.71

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	50730.	6.04	4125.	85.00
BOLIVIA	1354.	5.11	62.	21.29
BRAZIL	164155.	9.37	6251.	27.01
CHILE	11949.	3.67	471.	17.36
COLOMBIA	24139.	5.47	1154.	16.32
COS RICA	1447.	3.71	105.	0.23
CUBA	2392.	0.81	94.	44.19
DOM REPB	11328.	0.94	130.	34.54
ECUADOR	2342.	5.26	7.	94.12
EL SALVA	1299.	5.56	55.	51.91
GUATEMAL	6585.	5.78	275.	7.03
HAITI	455.	-0.00	43.	-7.76
HONDURAS	996.	3.88	48.	57.21
JAMAICA	1771.	1.60	171.	-2.48
MEXICO	85363.	4.70	3293.	-4.74
NICARAGU	918.	1.59	19.	67.07
PANAMA	380.	-2.12	0.	0.
PARAGUAY	1857.	6.67	90.	-15.88
PERU	7526.	6.42	468.	23.67
URUGUAY	2093.	1.94	47.	-21.52
VENEZUEL	11206.	7.85	1976.	25.33

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	65575.	4.76	2346.	-48.66
BOLIVIA	1337.	4.70	60.	-8.91
BRAZIL	253500.	8.92	7917.	-2.58
CHILE	12781.	3.14	422.	-10.59
COLOMBIA	30903.	4.84	1116.	-8.16
COS RICA	1769.	4.31	117.	3.03
CUBA	3569.	1.44	84.	-17.29
DOM REPB	11196.	0.28	63.	-30.79
ECUADOR	3016.	5.10	22.	11.68
EL SALVA	1470.	3.01	35.	-40.14
GUATEMAL	8522.	5.00	300.	-0.14
HAITI	436.	-1.30	47.	3.79
HONDURAS	1185.	3.34	29.	-29.19
JAMAICA	1988.	1.08	166.	0.19
MEXICO	106715.	4.24	3753.	1.78
NICARAGU	994.	1.27	11.	-39.33
PANAMA	356.	-0.93	0.	0.
PARAGUAY	2563.	5.84	123.	30.53
PERU	10096.	5.95	466.	-3.00
URUGUAY	2326.	2.23	67.	34.20
VENEZUEL	14545.	4.48	1785.	-14.04

1985

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	6365.	4.20	426.	-32.59
EGYPT	23543.	6.68	1311.	4.49
IRAN	43005.	9.98	5440.	2.94
IRAQ	5914.	2.29	376.	-4.73
ISRAEL	1469.	15.91	619.	1.88
JORDAN	193.	1.04	7.	4.55
KUWAIT	182.	-3.31	71.	47.82
LEBANON	1826.	6.69	192.	5.60
LIBYA	2241.	5.10	289.	-5.07
MORROCCO	5196.	3.16	266.	-5.05
SAU ARAB	22596.	17.27	2538.	14.43
SUDAN	2671.	6.42	309.	-2.55
SYRIA	8734.	13.93	1261.	18.87
TUNESIA	3154.	1.37	117.	-24.53
YEMEN	42.	-14.88	33.	1.96

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	8342.	3.79	624.	49.55
EGYPT	30523.	4.75	1284.	-3.52
IRAN	64610.	7.63	6505.	4.44
IRAQ	6245.	0.57	361.	-3.56
ISRAEL	1588.	-5.14	576.	-4.83
JORDAN	293.	0.23	4.	-5.49
KUWAIT	70.	-32.76	43.	-51.42
LEBANON	2417.	4.58	190.	-3.77
LIBYA	2354.	7.15	277.	10.50
MORROCCO	5948.	2.49	264.	1.68
SAU ARAB	46510.	14.55	4153.	10.87
SUDAN	3706.	6.89	401.	8.80
SYRIA	21090.	19.51	3049.	19.53
TUNESIA	5090.	11.62	551.	21.64
YEMEN	19.	-16.93	34.	0.60

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	9720.	2.57	317.	-44.61
EGYPT	37356.	4.07	1329.	2.99
IRAN	89542.	5.86	7021.	-0.39
IRAQ	6330.	0.14	276.	-0.83
ISRAEL	932.	-9.60	465.	0.97
JORDAN	204.	0.10	4.	0.08
KUWAIT	0.	0.	71.	9.94
LEBANON	2353.	2.80	176.	-0.45
LIBYA	4272.	7.58	429.	1.05
MORROCCO	6533.	2.04	254.	-1.62
SAU ARAB	87192.	12.69	6805.	9.83
SUDAN	5109.	6.59	482.	1.71
SYRIA	41751.	9.57	5094.	0.90
TUNESIA	6523.	0.88	434.	-21.67
YEMEN	6.	-21.68	35.	0.19

1985

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1235.	9.70	116.	2.27
CAMEROON	1113.	8.77	119.	5.18
CEN AFRB	329.	9.51	115.	2.27
CHAD	374.	8.04	14.	12.90
PR CONGO	664.	3.72	57.	1.08
DAHOMEY	169.	15.11	25.	47.25
ETHIOPIA	455.	0.46	57.	4.89
GAMBIA	136.	4.62	42.	1.36
GHANA	2177.	4.95	141.	-5.42
GUINEA	1222.	9.61	136.	2.97
IVRY CST	114.	-2.71	78.	-59.35
KENYA	2027.	9.47	148.	0.48
LIBERIA	273.	0.42	91.	5.72
MALAGSY	1201.	11.12	195.	2.81
MALAWI	457.	10.11	23.	31.78
MALI	337.	9.65	127.	11.13
NIGER	313.	3.46	32.	1.63
NIGERIA	10023.	3.92	0.	0.
RHODESIA	477.	15.86	193.	3.05
RWANDA	1123.	10.93	153.	7.68
SENEGAL	1346.	6.74	120.	-7.73
SIE LEON	160.	10.78	54.	1.78
SOMALIA	359.	9.23	133.	4.16
S AFRICA	13346.	1.62	643.	-14.79
TANZANIA	2794.	4.14	129.	-3.09
UGANDA	2373.	7.19	174.	-16.47
UP VOLTA	243.	2.95	13.	12.36
ZAIRE	1954.	8.66	193.	-17.56
ZAMBIA	1394.	6.05	157.	-2.07

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1579.	8.62	125.	2.28
CAMEROON	1562.	8.62	173.	5.29
CEN AFRB	1231.	9.22	135.	3.90
CHAD	457.	8.62	22.	7.52
PR CONGO	554.	3.51	89.	-0.11
DAHOMEY	313.	13.74	38.	1.59
ETHIOPIA	456.	-0.12	56.	-1.92
GAMBIA	173.	4.97	85.	-3.07
GHANA	2336.	7.53	151.	13.01
GUINEA	1579.	8.61	158.	2.99
IVRY CST	1142.	1.24	73.	232.97
KENYA	3325.	11.22	179.	5.07
LIBERIA	243.	0.73	81.	-2.21
MALAGSY	5334.	10.51	279.	10.15
MALAWI	575.	6.85	26.	-13.64
MALI	1261.	8.56	140.	-2.36
NIGER	393.	5.12	38.	2.45
NIGERIA	11577.	3.44	0.	0.
RHODESIA	940.	13.68	232.	5.78
RWANDA	1775.	9.35	177.	3.66
SENEGAL	1953.	7.44	156.	10.55
SIE LEON	253.	8.91	59.	1.59
SOMALIA	1447.	9.22	150.	1.58
S AFRICA	15345.	2.26	722.	13.65
TANZANIA	3113.	3.05	130.	4.66
UGANDA	3564.	7.32	264.	27.11
UP VOLTA	159.	6.12	21.	8.09
ZAIRE	3175.	8.56	287.	17.36
ZAMBIA	1545.	7.15	264.	7.25

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	2336.	7.87	146.	2.75
CAMEROON	2543.	9.04	228.	6.05
CEN AFRB	2034.	9.30	172.	4.99
CHAD	585.	8.42	32.	7.71
PR CONGO	554.	3.33	90.	0.40
DAHOMEY	536.	12.94	46.	9.65
ETHIOPIA	489.	0.18	57.	0.91
GAMBIA	232.	6.68	91.	1.24
GHANA	4463.	9.12	229.	4.00
GUINEA	2781.	7.91	156.	3.58
IVRY CST	333.	-11.75	0.	-100.00
KENYA	5795.	12.09	234.	6.11
LIBERIA	234.	3.95	82.	1.14
MALAGSY	3602.	9.99	402.	6.81
MALAWI	1019.	9.94	44.	39.12
MALI	1325.	9.02	192.	11.20
NIGER	523.	6.77	42.	3.49
NIGERIA	14356.	3.19	0.	0.
RHODESIA	1766.	12.15	307.	6.17
RWANDA	2767.	8.49	221.	6.73
SENEGAL	2352.	9.76	193.	2.58
SIE LEON	376.	7.91	64.	1.92
SOMALIA	2113.	7.61	177.	4.38
S AFRICA	16234.	1.96	657.	-6.75
TANZANIA	3752.	2.15	115.	-5.78
UGANDA	5169.	7.91	274.	-11.61
UP VOLTA	641.	5.91	32.	8.54
ZAIRE	4469.	7.92	315.	-3.66
ZAMBIA	2117.	6.22	214.	-2.65

1985

| | DOMESTIC GOVT SPENDING | | DEFENSE SPENDING | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2001.	1.37	2468.	7.98
BOLIVIA	121.	7.14	230.	7.15
BRAZIL	5753.	4.59	3219.	5.45
CHILE	1752.	3.98	965.	6.48
COLOMBIA	1307.	6.17	909.	6.64
COS RICA	309.	5.68	93.	1.62
CUBA	538.	2.49	365.	1.29
DOM REPB	1008.	3.25	925.	3.37
ECUADOR	509.	5.34	347.	6.70
EL SALVA	105.	5.01	46.	13.41
GUATEMAL	2954.	8.45	474.	7.44
HAITI	75.	3.22	137.	0.69
HONDURAS	125.	4.60	72.	10.19
JAMAICA	521.	4.81	559.	0.81
MEXICO	6338.	1.99	929.	5.56
NICARAGU	123.	3.28	94.	7.00
PANAMA	0.	-100.00	58.	-13.35
PARAGUAY	345.	11.43	540.	9.74
PERU	800.	10.51	658.	5.40
URUGUAY	534.	2.81	839.	2.44
VENEZUEL	8372.	9.98	772.	8.52

1990

| | DOMESTIC GOVT SPENDING | | DEFENSE SPENDING | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2162.	1.69	3202.	3.83
BOLIVIA	159.	4.99	317.	5.29
BRAZIL	7273.	4.90	4018.	4.02
CHILE	2096.	3.46	1239.	4.44
COLOMBIA	2392.	5.53	1197.	5.11
COS RICA	406.	5.52	111.	4.52
CUBA	730.	2.84	371.	0.08
DOM REPB	1081.	0.88	1114.	1.37
ECUADOR	737.	5.18	460.	5.28
EL SALVA	127.	2.93	66.	4.50
GUATEMAL	4206.	6.71	634.	5.29
HAITI	79.	0.16	125.	-2.54
HONDURAS	147.	2.75	95.	3.85
JAMAICA	750.	3.28	577.	0.47
MEXICO	9972.	6.93	1174.	4.53
NICARAGU	139.	2.03	116.	3.08
PANAMA	0.	0.	32.	-8.36
PARAGUAY	552.	8.95	754.	5.39
PERU	1322.	10.53	815.	3.90
URUGUAY	508.	2.47	924.	1.62
VENEZUEL	12385.	8.69	1011.	4.35

1995

| | DOMESTIC GOVT SPENDING | | DEFENSE SPENDING | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2369.	1.94	4079.	5.69
BOLIVIA	209.	5.64	460.	4.37
BRAZIL	9260.	4.98	4891.	4.01
CHILE	2459.	3.19	1511.	3.79
COLOMBIA	3189.	5.37	1437.	4.15
COS RICA	529.	5.39	140.	4.79
CUBA	345.	3.06	377.	0.47
DOM REPB	1115.	0.46	1678.	1.12
ECUADOR	1006.	4.91	575.	4.16
EL SALVA	149.	3.66	84.	5.37
GUATEMAL	5545.	5.67	734.	4.16
HAITI	76.	-1.32	106.	-3.87
HONDURAS	175.	3.81	119.	4.67
JAMAICA	952.	2.16	579.	-0.12
MEXICO	11360.	3.81	1452.	4.10
NICARAGU	154.	2.12	136.	3.12
PANAMA	0.	0.	25.	-2.83
PARAGUAY	785.	6.37	989.	5.74
PERU	2171.	10.31	981.	3.65
URUGUAY	581.	2.22	1033.	2.67
VENEZUEL	19152.	7.72	1284.	4.39

1985

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	986.	2.41	826.	9.61
EGYPT	8758.	7.93	6433.	6.08
IRAN	35727.	12.46	9706.	9.04
IRAQ	1576.	3.90	2730.	3.09
ISRAEL	0.	0.	593.	20.30
JORDAN	0.	0.	33.	2.78
KUWAIT	245.	-4.58	9.	-2.45
LEBANON	429.	9.59	653.	9.59
LIBYA	1549.	8.51	1834.	3.95
MOROCCO	1255.	3.69	797.	5.12
SAU ARAB	20325.	17.88	17271.	16.06
SUDAN	3023.	10.94	963.	9.83
SYRIA	3369.	5.88	6296.	16.10
TUNESIA	1580.	8.28	1425.	-2.34
YEMEN	481.	7.26	4.	-20.30

1990

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1002.	-1.71	997.	1.03
EGYPT	12110.	5.98	8264.	4.60
IRAN	57316.	8.84	13739.	6.18
IRAQ	1749.	1.20	2946.	1.19
ISRAEL	0.	0.	700.	-6.02
JORDAN	0.	0.	34.	0.37
KUWAIT	196.	-4.27	5.	-20.30
LEBANON	526.	5.71	867.	3.84
LIBYA	2364.	9.02	2362.	8.21
MOROCCO	1475.	3.97	963.	3.27
SAU ARAB	42326.	15.09	32371.	12.16
SUDAN	4383.	9.56	1331.	7.24
SYRIA	5372.	4.59	13777.	16.46
TUNESIA	2281.	7.25	2503.	16.46
YEMEN	553.	5.74	1.	-20.30

1995

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	558.	-22.10	1124.	2.93
EGYPT	15556.	4.65	10003.	3.50
IRAN	83007.	6.73	17670.	4.58
IRAQ	1799.	0.31	3075.	0.74
ISRAEL	0.	0.	161.	-36.08
JORDAN	0.	0.	35.	0.23
KUWAIT	154.	-4.76	2.	-20.30
LEBANON	755.	3.12	1006.	2.58
LIBYA	3577.	9.37	3532.	7.06
MOROCCO	1700.	2.77	1106.	2.52
SAU ARAB	81510.	13.02	54172.	10.08
SUDAN	7514.	8.65	1840.	6.32
SYRIA	6226.	3.97	25298.	5.10
TUNESIA	3176.	6.61	3298.	0.92
YEMEN	939.	4.76	0.	-20.30

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	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	313.	10.16	69.	9.69
CAMEROON	1365.	9.47	62.	6.17
CEN AFR B	267.	13.19	64.	11.?2
CHAD	173.	9.92	17.	9.51
PR CONGO	72.	3.49	25.	5.69
DAHOMEY	172.	13.49	11.	4.38
ETHIOPIA	246.	1.83	51.	-0.65
GAMBIA	73.	12.94	17.	33.42
GHANA	1190.	9.65	97.	6.69
GUINEA	473.	10.09	75.	9.18
IVRY CST	662.	4.17	74.	8.85
KENYA	1136.	13.77	79.	3.62
LIBERIA	83.	1.53	13.	-7.59
MALAGASY	1066.	10.31	135.	10.21
MALAWI	177.	15.41	2?.	5.11
MALI	232.	13.70	43.	7.29
NIGER	246.	13.90	17.	7.45
NIGERIA	2995.	5.48	434.	1.04
RHODESIA	1246.	12.47	6?.	10.30
RWANDA	453.	10.88	60.	9.06
SENEGAL	419.	10.61	73.	9.35
SIE LEON	393.	9.67	29.	11.09
SOMALIA	324.	9.96	62.	8.60
S AFRICA	6211.	2.63	431.	2.31
TANZANIA	574.	5.24	97.	4.32
UGANDA	322.	9.39	103.	7.45
UP VOLTA	76.	11.24	9.	5.50
ZAIRE	3091.	9.45	142.	5.39
ZAMBIA	736.	5.53	120.	5.54

1990

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	515.	5.72	106.	8.55
CAMEROON	1523.	8.92	121.	5.33
CEN AFRB	453.	12.24	107.	10.76
CHAD	271.	9.57	26.	9.56
PR CONGO	86.	3.68	31.	2.75
DAHOMEY	317.	12.77	23.	15.54
ETHIOPIA	265.	1.69	51.	0.25
GAMBIA	131.	11.95	23.	9.67
GHANA	1935.	11.93	171.	6.33
GUINEA	741.	5.66	113.	8.16
IVRY CST	554.	-3.31	62.	-11.18
KENYA	1345.	11.74	119.	3.69
LIBERIA	96.	1.64	16.	3.79
MALAGASY	1715.	9.78	210.	5.69
MALAWI	286.	9.82	31.	10.55
MALI	432.	12.87	67.	10.25
NIGER	459.	12.98	26.	5.91
NIGERIA	3792.	4.45	461.	1.30
RHODESIA	2195.	11.71	99.	10.29
RWANDA	726.	3.32	91.	8.37
SENEGAL	700.	10.83	106.	7.54
SIE LEON	515.	5.24	44.	8.95
SOMALIA	503.	8.64	93.	8.40
S AFRICA	6375.	1.75	465.	1.26
TANZANIA	320.	3.33	114.	2.79
UGANDA	1262.	8.69	138.	5.25
UP VOLTA	132.	11.76	13.	8.75
ZAIRE	4742.	8.73	165.	5.15
ZAMBIA	1156.	7.74	166.	6.36

1995

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	395.	7.83	156.	7.74
CAMEROON	2513.	9.29	182.	5.52
CEN AFRB	532.	11.38	179.	10.65
CHAD	411.	8.37	41.	8.83
PR CONGO	103.	3.51	36.	3.40
DAHOMEY	569.	12.14	43.	12.54
ETHIOPIA	299.	1.59	52.	0.04
GAMBIA	227.	11.33	44.	12.04
GHANA	3365.	12.09	187.	7.75
GUINEA	1095.	7.80	163.	7.31
IVRY CST	511.	-6.11	46.	-3.58
KENYA	3458.	12.46	182.	8.94
LIBERIA	104.	1.63	16.	-3.09
MALAGASY	2711.	9.48	317.	8.31
MALAWI	445.	9.12	46.	5.95
MALI	775.	12.14	105.	8.69
NIGER	328.	12.22	40.	3.61
NIGERIA	4530.	3.44	493.	1.42
RHODESIA	3765.	11.22	157.	9.31
RWANDA	1102.	5.16	136.	6.98
SENEGAL	1174.	10.87	169.	6.71
SIE LEON	378.	7.37	67.	8.19
SOMALIA	795.	7.85	135.	7.33
S AFRICA	7010.	1.46	499.	1.42
TANZANIA	334.	2.35	129.	2.20
UGANDA	1545.	8.11	193.	6.06
UP VOLTA	226.	17.96	21.	9.57
ZAIRE	7393.	8.17	234.	4.84
ZAMBIA	1552.	7.19	223.	6.?2

1985

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	1994.	0.96	2102.	0.88
BOLIVIA	237.	3.82	280.	5.07
BRAZIL	3281.	6.75	4467.	5.47
CHILE	316.	1.32	1001.	1.17
COLOMBIA	527.	3.19	1050.	3.38
COS RICA	212.	1.41	159.	1.57
CUBA	701.	0.25	392.	0.55
DOM REPB	1362.	1.31	1069.	1.76
ECUADOR	482.	3.70	306.	2.98
EL SALVA	195.	3.40	246.	3.87
GUATEML	432.	3.25	341.	2.82
HAITI	73.	2.62	81.	1.18
HONDURAS	333.	2.95	315.	2.89
JAMAICA	782.	1.08	614.	1.18
MEXICO	13083.	5.35	33409.	5.44
NICARAGU	234.	0.95	264.	1.07
PANAMA	68.	-18.49	0.	0.
PARAGUAY	324.	10.76	413.	19.96
PERU	936.	2.25	888.	1.29
URUGUAY	226.	1.03	217.	1.03
VENEZUEL	1542.	1.42	3248.	1.39

1990

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2372.	5.41	2453.	4.80
BOLIVIA	354.	5.54	384.	6.38
BRAZIL	4339.	8.60	6119.	6.97
CHILE	992.	1.74	1074.	1.54
COLOMBIA	998.	4.11	1267.	4.01
COS RICA	229.	1.59	171.	1.74
CUBA	718.	0.59	410.	1.10
DOM REPB	2000.	1.33	1117.	0.75
ECUADOR	584.	4.07	356.	3.07
EL SALVA	263.	8.61	322.	6.78
GUATEML	472.	3.27	393.	2.88
HAITI	73.	-1.26	76.	-2.39
HONDURAS	425.	5.85	401.	5.82
JAMAICA	815.	0.69	640.	1.68
MEXICO	24061.	4.52	42103.	4.49
NICARAGU	252.	1.72	221.	1.92
PANAMA	28.	-15.06	0.	0.
PARAGUAY	477.	6.39	611.	6.43
PERU	1336.	9.33	1000.	2.98
URUGUAY	236.	0.78	227.	0.79
VENEZUEL	1913.	4.00	3685.	3.42

1995

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2732.	1.06	2787.	1.00
BOLIVIA	381.	4.18	524.	4.93
BRAZIL	7199.	7.74	8449.	6.58
CHILE	1069.	1.40	1149.	1.27
COLOMBIA	1190.	3.32	1513.	3.42
COS RICA	249.	1.80	188.	1.93
CUBA	738.	0.54	431.	1.01
DOM REPB	2060.	0.30	1114.	-0.46
ECUADOR	713.	4.01	415.	3.12
EL SALVA	307.	-0.41	381.	1.54
GUATEML	552.	3.14	453.	2.83
HAITI	68.	-1.72	66.	-3.26
HONDURAS	514.	2.93	485.	2.69
JAMAICA	339.	0.50	658.	0.43
MEXICO	29769.	4.16	51979.	4.09
NICARAGU	266.	0.75	235.	0.83
PANAMA	13.	-12.72	0.	0.
PARAGUAY	556.	6.82	844.	6.38
PERU	1902.	6.77	1148.	2.83
URUGUAY	248.	1.23	239.	1.21
VENEZUEL	2229.	2.69	4194.	2.25

1985

	IMPORTS			EXPORTS	
	CURRENT	% CHANGE		CURRENT	% CHANGE
ALGERIA	1797.	1.92		1739.	-1.92
EGYPT	4542.	6.70		2780.	6.27
IRAN	21026.	19.53		47514.	19.47
IRAQ	439.	3.75		2819.	2.01
ISRAEL	516.	24.66		300.	25.69
JORDAN	89.	0.84		0.	0.
KUWAIT	247.	-3.01		599.	-5.27
LEBANON	765.	6.20		211.	5.10
LIBYA	1324.	3.78		2556.	2.39
MORROCCO	1218.	2.87		892.	2.52
SAU ARAB	18467.	17.04		25313.	15.85
SUDAN	1788.	9.42		1466.	9.61
SYRIA	1577.	13.15		10144.	20.77
TUNESIA	1002.	1.38		815.	1.51
YEMEN	366.	1.57		0.	0.

1990

	IMPORTS			EXPORTS	
	CURRENT	% CHANGE		CURRENT	% CHANGE
ALGERIA	2131.	4.30		2126.	6.91
EGYPT	5382.	4.56		3564.	4.46
IRAN	32103.	7.90		72422.	7.87
IRAQ	519.	3.26		2957.	0.51
ISRAEL	595.	-8.94		366.	-7.06
JORDAN	90.	0.11		0.	0.
KUWAIT	153.	-15.10		279.	-23.77
LEBANON	927.	2.77		238.	0.65
LIBYA	1591.	8.05		3131.	7.30
MORROCCO	1386.	2.45		1000.	2.17
SAU ARAB	37193.	13.99		49278.	13.47
SUDAN	2782.	9.00		2301.	9.17
SYRIA	3119.	15.54		25721.	23.30
TUNESIA	1521.	11.69		1366.	12.42
YEMEN	397.	1.75		0.	0.

1995

	IMPORTS			EXPORTS	
	CURRENT	% CHANGE		CURRENT	% CHANGE
ALGERIA	2302.	-0.44		1742.	-12.21
EGYPT	7201.	3.85		4353.	3.83
IRAN	44273.	5.88		99792.	5.86
IRAQ	507.	3.16		2993.	0.13
ISRAEL	137.	-31.83		136.	-18.06
JORDAN	90.	3.07		0.	0.
KUWAIT	57.	-23.03		0.	0.
LEBANON	1035.	1.94		235.	-0.77
LIBYA	2517.	6.98		4481.	6.35
MORROCCO	1549.	1.97		1098.	1.74
SAU ARAB	67778.	12.11		88713.	11.86
SUDAN	4134.	7.85		3440.	7.97
SYRIA	5560.	7.34		48824.	3.14
TUNESIA	2073.	0.89		1774.	0.92
YEMEN	435.	1.85		0.	0.

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1985

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	143.	5.98	151.	8.62
CAMEROON	294.	4.44	249.	3.96
CEN AFR	177.	5.44	116.	9.94
CHAD	55.	4.14	63.	4.26
PP CONGO	96.	2.11	49.	4.54
DAHOMEY	47.	4.49	54.	5.61
ETHIOPIA	203.	2.45	165.	2.28
GAMBIA	52.	5.97	12.	15.27
GHANA	402.	2.78	419.	2.56
GUINEA	236.	7.59	208.	7.53
IVRY CST	512.	-2.76	644.	-3.69
KENYA	547.	3.92	294.	3.40
LIBERIA	137.	0.61	71.	1.49
MALAGASY	331.	5.02	248.	4.87
MALAWI	131.	6.49	83.	6.97
MALI	131.	9.49	135.	8.96
NIGER	123.	9.11	58.	9.19
NIGERIA	1347.	3.27	1296.	3.11
RHODESIA	355.	3.99	354.	3.39
RWANDA	176.	9.72	195.	9.15
SENEGAL	230.	4.22	260.	4.61
SIE LEON	118.	3.02	105.	2.85
SOMALIA	157.	7.42	139.	5.44
S AFRICA	3790.	1.17	2955.	1.93
TANZANIA	717.	3.27	655.	2.78
UGANDA	353.	5.94	503.	5.07
UP VOLTA	118.	3.63	75.	4.46
ZAIRE	543.	4.01	1220.	5.43
ZAMBIA	332.	5.71	1451.	6.33

1990

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	221.	8.00	222.	7.68
CAMEROON	338.	5.46	311.	4.93
CEN AFR	192.	5.74	177.	8.57
CHAD	153.	4.10	77.	4.25
PP CONGO	116.	2.52	61.	3.94
DAHOMEY	113.	4.56	73.	5.43
ETHIOPIA	297.	2.71	185.	2.24
GAMBIA	41.	5.46	20.	10.39
GHANA	533.	4.75	510.	4.72
GUINEA	293.	7.21	294.	7.02
IVRY CST	517.	2.35	635.	2.23
KENYA	573.	4.74	353.	3.95
LIBERIA	110.	0.34	76.	1.14
MALAGASY	428.	5.49	319.	5.47
MALAWI	176.	5.33	111.	5.29
MALI	191.	7.78	200.	7.81
NIGER	195.	9.91	94.	10.35
NIGERIA	1569.	3.00	1503.	2.93
RHODESIA	450.	5.37	434.	4.65
RWANDA	265.	8.23	293.	7.79
SENEGAL	363.	5.90	343.	6.16
SIE LEON	138.	3.34	122.	3.16
SOMALIA	221.	6.90	202.	7.41
S AFRICA	4138.	2.24	3205.	2.47
TANZANIA	335.	2.94	746.	2.51
UGANDA	522.	7.54	670.	6.37
UP VOLTA	142.	3.67	93.	4.29
ZAIRE	945.	7.32	1685.	7.04
ZAMBIA	1157.	6.91	2649.	7.45

1995

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	322.	7.42	315.	7.09
CAMEROON	453.	6.44	406.	5.91
CEN AFR	235.	9.06	271.	8.39
CHAD	126.	4.09	94.	4.16
PP CONGO	117.	2.13	73.	3.77
DAHOMEY	137.	4.94	92.	5.66
ETHIOPIA	339.	2.61	206.	2.21
GAMBIA	57.	7.12	35.	10.60
GHANA	737.	6.34	658.	6.22
GUINEA	412.	6.92	409.	6.67
IVRY CST	373.	-12.49	472.	-17.10
KENYA	571.	5.73	436.	4.67
LIBERIA	112.	0.56	81.	1.41
MALAGASY	565.	5.92	420.	5.79
MALAWI	246.	8.28	155.	5.2
MALI	290.	9.10	298.	9.62
NIGER	316.	10.27	155.	13.60
NIGERIA	1859.	2.81	1722.	2.73
RHODESIA	613.	6.47	562.	5.74
RWANDA	391.	7.94	415.	7.44
SENEGAL	491.	6.40	469.	6.63
SIE LEON	164.	1.65	143.	3.47
SOMALIA	317.	6.77	285.	7.18
S AFRICA	4664.	2.07	3546.	1.19
TANZANIA	345.	2.36	829.	1.93
UGANDA	722.	6.13	884.	5.36
UP VOLTA	170.	3.67	114.	4.13
ZAIRE	1113.	6.94	2325.	6.35
ZAMBIA	1541.	5.94	3640.	6.16

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1985

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.866	0.77	6.000	0.
EGYPT	4.823	2.50	242.000	0.
IRAN	4.018	2.15	142.440	0.
IRAQ	1.316	3.06	18.060	0.
ISRAEL	0.445	2.90	47.400	0.
JORDAN	0.380	3.40	9.620	0.
KUWAIT	0.028	9.80	0.	0.
LEBANON	0.217	7.61	0.080	0.
LIBYA	0.049	24.32	1.140	0.
MOROCCO	0.675	1.25	10.920	0.
SAU ARAB	0.117	2.80	38.300	0.
SUDAN	0.355	3.19	12.340	0.
SYRIA	1.040	3.40	95.000	0.
TUNESIA	0.329	11.06	3.240	0.
YEMEN	0.234	20.92	13.000	0.

1990

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.925	1.63	6.000	0.
EGYPT	5.457	2.50	242.000	0.
IRAN	4.436	1.93	142.440	0.
IRAQ	1.532	3.03	18.060	0.
ISRAEL	0.514	2.90	47.400	0.
JORDAN	0.449	3.40	9.620	0.
KUWAIT	0.045	9.80	0.	0.
LEBANON	0.313	7.64	0.080	0.
LIBYA	0.117	2.77	1.140	0.
MOROCCO	0.724	1.48	10.820	0.
SAU ARAB	0.134	2.80	38.300	0.
SUDAN	0.409	2.59	12.340	0.
SYRIA	0.971	-5.94	95.000	0.
TUNESIA	0.356	-1.97	3.240	0.
YEMEN	0.436	10.20	13.000	0.

1995

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.931	1.30	6.000	0.
EGYPT	6.174	2.52	242.000	0.
IRAN	4.862	1.79	142.440	0.
IRAQ	1.765	2.76	18.060	0.
ISRAEL	0.593	2.90	47.400	0.
JORDAN	0.531	3.40	9.620	0.
KUWAIT	0.072	9.80	0.	0.
LEBANON	0.431	6.17	0.080	0.
LIBYA	0.052	-19.45	1.140	0.
MOROCCO	0.780	1.50	10.820	0.
SAU ARAB	0.154	2.80	33.300	0.
SUDAN	0.452	1.62	12.340	0.
SYRIA	0.474	-10.62	95.000	0.
TUNESIA	0.381	5.84	3.240	0.
YEMEN	0.638	6.75	13.000	0.

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1985

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2.305	6.85	13.300	0.
BOLIVIA	0.336	4.07	2.320	0.
BRAZIL	3.514	0.67	20.180	0.
CHILE	0.927	2.43	6.940	0.
COLOMBIA	0.592	2.28	7.280	0.
COS RICA	0.273	3.20	0.040	0.
CUBA	1.157	2.00	0.	0.
DOM REPB	0.614	2.90	2.540	0.
ECUADOR	0.295	3.65	3.240	0.
EL SALVA	0.304	7.56	0.480	0.
GUATEMAL	0.798	2.90	1.580	0.
HAITI	0.574	2.10	0.	0.
HONDURAS	0.306	6.78	0.760	0.
JAMAICA	0.271	2.40	0.120	0.
MEXICO	1.739	3.49	0.400	0.
NICARAGU	0.261	5.76	1.060	0.
PANAMA	0.022	3.30	0.500	0.
PARAGUAY	0.396	3.40	1.220	0.
PERU	1.101	2.64	3.440	0.
URUGUAY	0.347	1.20	2.490	0.
VENEZUEL	1.065	8.22	3.080	0.

1990

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2.731	1.29	13.300	0.
BOLIVIA	0.432	3.41	2.320	0.
BRAZIL	3.583	0.29	20.180	0.
CHILE	1.000	1.14	6.940	0.
COLOMBIA	0.667	2.47	7.280	0.
COS RICA	0.319	3.20	0.040	0.
CUBA	1.260	1.55	0.	0.
DOM REPB	0.691	0.92	2.540	0.
ECUADOR	0.353	3.67	3.240	0.
EL SALVA	0.397	4.39	0.480	0.
GUATEMAL	0.921	2.90	1.580	0.
HAITI	0.636	2.07	0.	0.
HONDURAS	0.385	3.74	0.760	0.
JAMAICA	0.305	2.40	0.120	0.
MEXICO	2.040	3.03	0.400	0.
NICARAGU	0.316	3.08	1.060	0.
PANAMA	0.037	20.27	0.500	0.
PARAGUAY	0.468	3.40	1.220	0.
PERU	1.223	1.91	3.440	0.
URUGUAY	0.368	1.20	2.490	0.
VENEZUEL	1.357	3.70	3.080	0.

1995

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	3.395	6.27	13.300	0.
BOLIVIA	0.473	3.19	2.320	0.
BRAZIL	3.796	1.81	20.180	0.
CHILE	1.073	1.49	6.940	0.
COLOMBIA	0.745	2.14	7.280	0.
COS RICA	0.374	3.20	0.040	0.
CUBA	1.364	1.62	0.	0.
DOM REPB	0.704	0.43	2.540	0.
ECUADOR	0.415	3.07	3.240	0.
EL SALVA	0.497	4.11	0.480	0.
GUATEMAL	1.063	2.90	1.580	0.
HAITI	0.695	1.63	0.	0.
HONDURAS	0.464	3.80	0.760	0.
JAMAICA	0.344	2.40	0.120	0.
MEXICO	2.332	2.56	0.400	0.
NICARAGU	0.365	2.97	1.060	0.
PANAMA	0.082	14.15	0.500	0.
PARAGUAY	0.554	3.40	1.220	0.
PERU	1.360	2.25	3.440	0.
URUGUAY	0.391	1.20	2.490	0.
VENEZUEL	1.710	5.02	3.080	0.

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	..454	2.0.	0.	0.
CAMEROON	0.724	6.99	0.	0.
CEN AFR	0.23°	2.50	0.	0.
CHAD	0.434	2.00	0.	0.
PR CONGO	..125	2.2°	.	0.
DAHOMEY	0.403	2.70	0.	0.
ETHIOPIA	4.316	1.90	13.22°	0.
GAMBIA	0.055	2.10	0.	0.
GHANA	0.849	3.67	..	0.
GUINEA	..64°	2.30	0.22°	0.
IVRY CST	0.614	2.40	0.	0.
KENYA	0.443	4.94	0.	0.
LIBERIA	0.159	1.90	0.62°	0.
MALAGASY	°.414	3.85	0.	0.
MALAWI	0.637	2.50	0.	0.
MALI	0.713	2.00	0.16°	0.
NIGER	0.539	2.60	0.	0.
NIGERIA	7.08.	2.51	3.10°	0.
RHODESIA	0.594	5.73	0.	0.
RWANDA	0.5°3	3.20	0.	0.
SENEGAL	0.557	2.46	0.06°	0.
SIE LEON	..325	1.5°	.	0.
SOMALIA	0.394	2.30	0.	0.
S AFRICA	0.46°	-2.78	0.	0.
TANZANIA	0.724	4.43	0.	0.
UGANDA	0.451	5...	.	..
UP VOLTA	0.73,	2.10	0.	0.
ZAIRE	3.486	5.19	2.58°	0.
ZAMBIA	0.60J	2.60	0.	0.

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.505	2.09	0.	0.
CAMEROON	..679	2.10	0.	0.
CEN AFR	0.262	-2.50	0.	0.
CHAD	0.55°	2.00	0.	0.
PR CONGO	0.13°	2.20	0.	0.
DAHOMEY	.46°	2.7°	.	.
ETHIOPIA	3.643	1.90	13.22°	0.
GAMBIA	0.061	2.10	0.	0.
GHANA	0.969	1.75	0.	0.
GUINEA	0.615	2.3.	0.22	2.
IVRY CST	..691	2.40	0.	0.
KENYA	0.451	-0.64	0.	0.
LIBERIA	0.175	1.90	0.62°	0.
MALAGASY	0.418	-2.39	0.	0.
MALAWI	0.721	2.50	0.	0.
MALI	0.785	2.00	0.16°	2.
NIGER	0.668	2.60	0.	0.
NIGERIA	8.02°	2.50	3.10°	0.
RHODESIA	..765	3.31	0.	0.
RWANDA	0.635	3.20	0.	0.
SENEGAL	0.627	2.40	0.06°	0.
SIE LEON	0.35°	1.50	0.	0.
SOMALIA	..441	2.3°	.	0.
S AFRICA	..447	0.34	0.	0.
TANZANIA	0.955	4.32	0.	0.
UGANDA	0.585	3.32	0.	0.
UP VOLTA	°.518	2.1°	.	0.
ZAIRE	4.086	3.67	2.58°	0.
ZAMBIA	0.685	2.60	0.	0.

	MILITARY MANPOWER (MILLIONS)		MILITARY AID (MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.556	2.00	0.	0.
CAMEROON	0.975	2.10	0.	0.
CEN AFR	0.237	2.5°	.	0.
CHAD	0.607	2.00	0.	0.
PR CONGO	0.155	2.20	0.	0.
DAHOMEY	0.526	2.70	0.	0.
ETHIOPIA	4.0°2	1.90	13.22°	0.
GAMBIA	..°67	2.10	0.	0.
GHANA	0.952	-1.55	0.	0.
GUINEA	0.640	2.30	0.22°	0.
IVRY CST	°.775	2.40	0.	0.
KENYA	..368	-9.57	.	0.
LIBERIA	0.192	1.90	0.62°	0.
MALAGASY	0.267	-15.76	0.	0.
MALAWI	0.816	2.50	0.	0.
MALI	0.879	2.°0	.16°	0.
NIGER	0.760	2.60	0.	0.
NIGERIA	10.215	2.50	3.10°	0.
RHODESIA	0.°17	-0.71	0.	0.
RWANDA	0.513	3.20	0.	0.
SENEGAL	°.726	2.40	0.06°	0.
SIE LEON	0.377	1.50	0.	0.
SOMALIA	0.494	2.30	0.	0.
S AFRICA	0.423	-1.25	.	0.
TANZANIA	1.0°6	3.69	0.	0.
UGANDA	0.612	-0.66	0.	0.
UP VOLTA	..904	2.10	0.	0.
ZAIRE	4.179	2.09	2.58°	0.
ZAMBIA	..779	2.60	0.	0.

1985

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.019	-1.20	0.597	-0.01
BOLIVIA	0.	0.	0.658	0.
BRAZIL	0.058	-19.60	0.469	-0.68
CHILE	0.	0.	0.498	0.
COLOMBIA	0.459	-0.25	0.504	-0.05
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.809	-15.13
DOM REPB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.642	0.
EL SALVA	0.	0.	0.513	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.519	-21.76
HONDURAS	0.	0.	0.515	0.
JAMAICA	0.	0.	0.521	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.663	0.
PANAMA	0.	0.	0.653	28.33
PARAGUAY	0.	0.	0.658	0.
PERU	0.835	-0.41	0.705	-0.11
URUGUAY	0.522	-0.88	0.784	-0.13
VENEZUEL	0.	0.	0.666	0.

1990

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.007	-26.32	0.594	-0.10
BOLIVIA	0.	0.	0.514	0.
BRAZIL	0.015	-24.94	0.463	-0.25
CHILE	0.	0.	0.498	0.
COLOMBIA	0.304	-10.97	0.463	-1.79
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.809	-15.13
DOM REPB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.642	0.
EL SALVA	0.	0.	0.513	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.519	0.
HONDURAS	0.	0.	0.663	0.
JAMAICA	0.	0.	0.515	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.663	0.
PANAMA	0.	0.	0.653	0.
PARAGUAY	0.	0.	0.658	0.
PERU	0.834	1.05	0.712	0.28
URUGUAY	0.503	-0.62	0.780	-0.09
VENEZUEL	0.	0.	0.666	0.

1995

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.004	-1.17	0.594	-0.10
BOLIVIA	0.	0.	0.658	28.08
BRAZIL	0.004	-21.45	0.457	-0.06
CHILE	0.	0.	0.498	0.
COLOMBIA	0.197	-6.90	0.444	-0.74
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.953	0.
DOM REPB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.642	0.
EL SALVA	0.	0.	0.513	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.663	0.
HONDURAS	0.	0.	0.515	0.
JAMAICA	0.	0.	0.523	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.663	0.
PANAMA	0.	0.	0.503	-22.17
PARAGUAY	0.	0.	0.658	0.
PERU	0.860	0.51	0.713	0.14
URUGUAY	0.483	-0.93	0.775	-0.13
VENEZUEL	0.	0.	0.666	0.

1985

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.931	5.03	0.931	0.73
EGYPT	0.279	0.10	0.839	0.01
IRAN	0.	0.	0.536	0.
IRAQ	0.217	10.30	0.829	0.43
ISRAEL	0.015	-10.99	0.457	-0.97
JORDAN	1.000	0.00	0.904	0.00
KUWAIT	0.420	-17.67	0.910	9.16
LEBANON	0.124	0.92	0.731	0.03
LIBYA	0.064	7.14	0.846	0.09
MORROCCO	0.937	1.06	0.999	0.17
SAU ARAB	0.014	-13.00	0.837	-0.04
SUDAN	0.856	0.09	0.895	0.02
SYRIA	0.049	0.24	0.798	0.00
TUNESIA	0.042	10.83	0.561	-7.5
YEMEN	1.000	0.00	0.920	-7.9

1990

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.906	1.42	0.950	0.24
EGYPT	0.317	3.32	0.845	0.21
IRAN	0.	0.	0.836	0.
IRAQ	0.401	14.28	0.861	1.04
ISRAEL	0.022	23.06	0.458	0.16
JORDAN	1.000	0.00	0.904	0.19
KUWAIT	0.970	-0.48	0.915	-0.09
LEBANON	0.161	8.09	0.738	0.29
LIBYA	0.085	1.97	0.849	0.03
MORROCCO	0.969	0.50	1.000	0.
SAU ARAB	0.013	1.43	0.837	0.00
SUDAN	0.858	0.03	0.895	0.01
SYRIA	0.048	-0.81	0.798	-0.01
TUNESIA	0.056	-4.86	0.655	-0.08
YEMEN	1.000	0.00	0.920	0.

1995

| | ALIGN THETA TRADE | | ALIGN THETA VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.971	1.18	0.961	0.21
EGYPT	0.383	4.91	0.858	0.37
IRAN	0.	0.	0.836	0.
IRAQ	0.733	10.16	0.920	1.31
ISRAEL	0.138	-27.95	0.571	16.39
JORDAN	1.000	0.00	0.904	0.00
KUWAIT	1.000	0.00	0.920	0.00
LEBANON	0.257	10.75	0.755	0.59
LIBYA	0.091	2.48	0.851	0.05
MORROCCO	0.986	0.25	1.000	0.
SAU ARAB	0.015	2.39	0.837	0.01
SUDAN	0.864	0.18	0.896	0.03
SYRIA	0.053	5.21	0.799	0.06
TUNESIA	0.069	11.14	0.657	0.18
YEMEN	1.000	0.	0.920	0.

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.521	0.
CAMEROUN	0.129	-3.30	0.695	25.96
CEN AFRB	0.	0.	0.521	-21.46
CHAD	0.	0.	0.665	27.67
PR CONGO	0.	0.	0.953	0.
DAHOMEY	0.	0.	0.594	0.
ETHIOPIA	0.105	-0.98	0.663	-0.04
GAMBIA	0.597	-2.10	0.502	-0.36
GHANA	0.293	-2.04	0.874	-0.07
GUINEA	0.	0.	.953	0.
IVRY CST	0.	0.	.666	0.
KENYA	0.543	-4.17	0.534	-0.16
LIBERIA	0.431	-1.02	0.750	24.62
MALAGASY	0.	0.	0.593	0.
MALAWI	.	0.	0.521	0.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.665	0.
NIGERIA	0.023	-2.32	0.780	-0.02
RHODESIA	.	0.	.666	0.
RWANDA	0.158	-4.42	0.557	-0.30
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.279	-3.31	0.593	-0.37
SOMALI	0.196	-3.65	.995	16.72
S AFRICA	0.	0.	0.522	0.
TANZANIA	0.575	-2.21	0.604	-0.07
UGANDA	0.087	-3.04	0.972	-0.06
UP VOLTA	0.	0.	.521	-21.71
ZAIRE	0.051	-3.90	0.523	-0.09
ZAMBIA	0.129	-3.05	0.695	-0.13

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.665	27.71
CAMEROUN	0.118	-3.54	0.546	-3.16
CEN AFRB	0.	0.	.666	0.
CHAD	0.	0.	0.665	0.
PR CONGO	0.	0.	0.953	0.
DAHOMEY	0.	0.	0.594	0.
ETHIOPIA	0.100	-0.76	.513	-0.03
GAMBIA	0.541	-2.11	0.645	-0.41
GHANA	0.277	-3.83	0.871	-0.08
GUINEA	0.	0.	0.953	17.54
IVRY CST	0.	0.	.666	0.
KENYA	0.070	-4.68	0.530	-21.45
LIBERIA	0.383	-0.50	0.746	23.93
MALAGASY	0.	0.	0.593	0.
MALAWI	.	0.	.665	.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.665	0.
NIGERIA	0.026	-2.15	.779	-0.02
RHODESIA	0.	0.	.666	0.
RWANDA	0.125	-3.94	0.551	-20.90
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.237	-3.02	0.574	-0.29
SOMALI	0.165	-3.37	0.989	-0.13
S AFRICA	.	0.	0.522	0.
TANZANIA	0.573	-2.01	0.606	-0.05
UGANDA	0.073	-3.69	0.967	-0.07
UP VOLTA	0.	0.	0.522	0.
ZAIRE	0.041	-4.24	0.519	-21.53
ZAMBIA	0.118	-3.42	0.691	26.19

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.521	0.
CAMEROUN	0.89	-3.71	0.686	26.44
CEN AFRB	0.	0.	0.666	0.
CHAD	0.	0.	0.521	0.
PR CONGO	0.	0.	0.953	0.
DAHOMEY	0.	0.	.594	0.
ETHIOPIA	0.096	-0.88	0.517	-21.83
GAMBIA	0.475	-2.73	0.633	-0.48
GHANA	0.062	-4.34	0.867	-0.07
GUINEA	0.	0.	.953	17.84
IVRY CST	0.	0.	.666	27.56
KENYA	0.054	-4.95	0.527	-0.12
LIBERIA	0.366	-0.98	0.595	-13.53
MALAGASY	0.	0.	0.593	0.
MALAWI	.	0.	0.666	0.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.666	0.
NIGERIA	0.023	-2.03	0.774	-0.01
RHODESIA	.	0.	.666	0.
RWANDA	0.105	-3.45	0.649	-0.14
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.204	-2.95	0.566	-0.24
SOMALI	0.139	-3.28	.982	-0.11
S AFRICA	0.	0.	0.522	0.
TANZANIA	0.064	-1.64	0.604	-0.04
UGANDA	0.042	-3.12	0.364	-0.05
UP VOLTA	0.	0.	0.521	0.
ZAIRE	0.094	-3.91	0.661	27.96
ZAMBIA	0.092	-3.92	0.667	26.42

| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.728	0.51	0.	0.
BOLIVIA	0.328	-0.77	0.220	-29.58
BRAZIL	0.805	0.34	0.	0.
CHILE	0.542	1.63	0.	0.
COLOMBIA	0.961	0.14	0.	0.
COS RICA	0.570	1.65	0.	0.
CUBA	0.356	-0.51	1.215	4.12
DOM REPB	0.336	0.13	0.	0.
ECUADOR	0.391	1.11	0.	0.
EL SALVA	0.361	-0.20	0.247	-12.35
GUATEMAL	1.000	0.00	0.	0.
HAITI	0.690	0.34	0.445	1.19
HONDURAS	0.220	-0.65	0.	0.
JAMAICA	0.229	1.33	0.	0.
MEXICO	0.101	-0.66	0.	0.
NICARAGU	0.331	0.44	0.250	5.07
PANAMA	0.475	14.13	1.414	0.
PARAGUAY	0.378	-2.50	0.	0.
PERU	0.639	0.85	0.	0.
URUGUAY	0.973	0.89	0.	0.
VENEZUEL	0.322	1.80	0.	0.

| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.789	2.22	0.	0.
BOLIVIN	0.311	-1.11	0.	0.
BRAZIL	0.822	0.38	0.	0.
CHILE	0.595	1.92	0.	0.
COLOMBIA	0.909	-1.85	0.	0.
COS RICA	0.622	1.85	0.	0.
CUBA	0.366	1.12	0.799	-15.91
DOM REPB	0.338	0.13	.	0.
ECUADOR	0.400	0.86	0.	0.
EL SALVA	0.339	-2.15	0.	-100.00
GUATEMAL	1.000	-0.00	0.	0.
HAITI	0.724	1.27	0.817	13.14
HONDURAS	0.206	-1.55	0.	0.
JAMAICA	0.241	0.92	0.	0.
MEXICO	0.098	-0.52	0.	0.
NICARAGU	0.339	0.48	0.173	-12.92
PANAMA	0.921	14.51	1.414	0.
PARAGUAY	0.347	-1.22	0.	0.
PERU	0.687	1.54	0.	0.
URUGUAY	1.014	0.62	0.	0.
VENEZUEL	0.378	3.61	0.	0.

| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.831	0.39	0.	0.
BOLIVIN	0.299	-0.73	0.	0.
BRAZIL	0.832	0.09	0.	0.
CHILE	0.639	1.21	0.	0.
COLOMBIA	0.888	-0.29	0.	0.
COS RICA	0.687	2.10	0.	0.
CUBA	0.393	0.67	0.386	-11.54
DOM REPB	0.343	0.34	0.074	100.00
ECUADOR	0.414	0.59	0.	0.
EL SALVA	0.339	1.29	0.041	100.00
GUATEMAL	1.000	-0.00	0.	0.
HAITI	0.779	1.61	1.198	5.67
HONDURAS	0.197	-0.52	0.	0.
JAMAICA	0.251	0.75	0.	0.
MEXICO	0.096	-0.47	0.	0.
NICARAGU	0.346	0.38	0.262	17.15
PANAMA	1.000	0.00	1.414	0.
PARAGUAY	0.326	-1.24	0.	0.
PERU	0.725	0.92	0.	0.
URUGUAY	1.056	0.94	0.	0.
VENEZUEL	0.423	1.79	0.	0.

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| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.118	7.10	1.006	-0.25
EGYPT	0.382	4.66	0.841	-0.85
IRAN	0.360	0.22	0.920	-0.63
IRAQ	0.227	-0.21	0.955	-0.05
ISRAEL	0.358	2.07	0.859	-0.21
JORDAN	0.077	12.10	0.992	-0.70
KUWAIT	0.036	6.20	1.058	2.02
LEBANON	0.144	6.22	0.952	-0.32
LIBYA	0.161	1.14	1.034	-0.13
MORROCCO	0.204	7.66	1.018	-0.52
SAU ARAB	0.465	15.58	0.925	-2.40
SUDAN	0.095	2.63	0.966	-0.08
SYRIA	0.235	-1.54	0.937	-0.46
TUNESIA	0.236	-0.90	0.912	-2.00
YEMEN	0.082	10.10	1.020	-3.83

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| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.168	6.89	0.968	-0.45
EGYPT	0.464	3.54	0.806	-0.63
IRAN	0.363	0.12	0.912	-0.05
IRAQ	0.216	-1.03	0.953	0.09
ISRAEL	0.357	-2.06	0.847	0.16
JORDAN	0.142	12.92	0.954	-0.63
KUWAIT	0.076	-2.41	1.005	-2.33
LEBANON	0.168	1.56	0.94	-0.17
LIBYA	0.179	4.29	1.029	-0.21
MORROCCO	0.296	7.78	0.994	-0.91
SAU ARAB	0.524	0.65	0.877	-0.36
SUDAN	0.110	3.26	0.961	-0.14
SYRIA	0.230	0.28	0.934	-0.02
TUNESIA	0.320	6.75	0.969	-0.25
YEMEN	0.114	9.91	0.964	-0.57

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| | ALIGN TRADE | | ALIGN VOTE | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.287	15.64	0.948	-1.22
EGYPT	0.545	3.13	0.773	-0.85
IRAN	0.364	0.03	0.911	-0.01
IRAQ	0.236	4.84	0.955	-0.29
ISRAEL	0.361	45.89	0.926	1.07
JORDAN	0.260	12.97	0.911	-1.17
KUWAIT	0.697	43.43	0.817	-3.89
LEBANON	0.176	0.60	0.936	-0.06
LIBYA	0.223	3.79	1.013	-0.35
MORROCCO	0.439	8.40	0.931	-1.34
SAU ARAB	0.536	0.48	0.869	-0.14
SUDAN	0.132	3.96	0.952	-0.20
SYRIA	0.234	0.02	0.932	-0.02
TUNESIA	0.356	-1.09	0.952	-0.06
YEMEN	0.132	9.79	0.937	-0.65

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.142	4.03	0.	0.
CAMEROUN	0.172	6.55	0.	0.
CEN AFRB	0.191	4.57	0.	0.
CHAD	0.167	8.22	0.090	-59.67
PR CONGO	0.117	1.96	0.	0.
DAHOMEY	0.144	16.20	0.391	-33.27
ETHIOPIA	0.33	-1.98	1.249	-0.94
GAMBIA	0.194	0.72	0.	0.
GHANA	0.155	4.74	0.	0.
GUINEA	0.165	5.00	0.	0.
IVRY CST	0.164	-1.51	.38	100.00
KENYA	0.136	9.62	0.	0.
LIBERIA	0.059	0.60	0.553	-11.77
MALAGASY	0.357	2.60	0.	0.
MALAWI	0.264	7.94	.174	-42.83
MALI	0.133	4.71	0.	0.
NIGER	0.162	0.77	0.446	-12.30
NIGERIA	0.266	2.25	0.	0.
RHODESIA	0.194	12.39	0.	0.
RWANDA	0.169	4.60	0.	0.
SENEGAL	0.132	4.53	0.	0.
SIE LEON	0.071	9.79	0.	0.
SOMALIA	0.177	4.23	0.	0.
S AFRICA	0.214	0.1	0.	0.
TANZANIA	0.101	1.90	0.	0.
UGANDA	0.175	2.72	0.	0.
UP VOLTA	0.024	3.25	1.169	-3.30
ZAIRE	0.130	4.82	0.	-100.00
ZAMBIA	0.052	2.47	0.	0.

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	.218	3.52	0.	0.
CAMEROUN	0.236	6.44	0.	0.
CEN AFRB	0.225	4.37	0.	0.
CHAD	.100	8.13	0.	0.
PR CONGO	.127	1.58	.	0.
DAHOMEY	0.095	13.45	0.	0.
ETHIOPIA	0.29	-2.90	1.220	-0.29
GAMBIA	0.202	1.00	0.	0.
GHANA	0.213	7.25	.	0.
GUINEA	.205	4.17	0.	0.
IVRY CST	0.163	0.47	0.735	-12.46
KENYA	.227	11.15	0.	0.
LIBERIA	0.060	-0.22	0.433	2.77
MALAGASY	.553	5.72	.	0.
MALAWI	0.094	4.47	0.	0.
MALI	0.163	4.05	0.	0.
NIGER	0.167	2.07	0.	-100.00
NIGERIA	.292	1.74	0.	0.
RHODESIA	0.164	10.90	0.	0.
RWANDA	0.204	3.61	0.	0.
SENEGAL	0.171	5.51	0.	0.
SIE LEON	.107	7.71	0.	0.
SOMALIA	0.205	3.55	0.	0.
S AFRICA	0.213	0.58	0.	0.
TANZANIA	0.108	1.19	0.	-100.00
UGANDA	0.213	4.08	0.	0.
UP VOLTA	0.032	7.57	0.863	-7.69
ZAIRE	0.164	4.51	0.	0.
ZAMBIA	0.060	2.90	0.	0.

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.257	3.25	0.	0.
CAMEROUN	.319	6.08	0.	0.
CEN AFRB	0.277	4.27	0.	0.
CHAD	0.145	7.55	0.	0.
PR CONGO	0.133	1.53	0.	0.
DAHOMEY	.156	12.33	.	0.
ETHIOPIA	0.025	-2.91	1.193	-0.33
GAMBIA	0.219	1.06	0.	0.
GHANA	0.303	7.49	0.	0.
GUINEA	0.243	3.63	.	0.
IVRY CST	0.354	-5.17	1.414	0.
KENYA	.398	11.35	0.	0.
LIBERIA	.060	0.33	0.361	-6.46
MALAGASY	0.719	2.60	0.	0.
MALAWI	.109	5.76	0.	0.
MALI	0.204	4.74	0.	0.
NIGER	0.077	2.96	0.	0.
NIGERIA	0.315	1.39	0.	0.
RHODESIA	.253	5.94	0.	0.
RWANDA	0.243	3.42	0.	0.
SENEGAL	0.220	5.00	0.	0.
SIE LEON	0.143	6.37	0.	0.
SOMALIA	.242	3.27	.	0.
S AFRICA	0.221	0.01	0.	0.
TANZANIA	0.111	0.11	0.111	43.59
UGANDA	0.240	2.75	0.	0.
UP VOLTA	.040	9.16	.411	-19.19
ZAIRE	.197	5.43	0.	0.
ZAMBIA	0.069	2.28	0.	0.

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.578	0.03	0.364	0.51
BOLIVIA	0.658	0.	0.274	-14.19
BRAZIL	0.412	2.70	0.403	0.34
CHILE	0.498	0.	0.271	1.63
COLOMBIA	0.045	2.00	0.481	0.14
COS RICA	0.504	0.	0.285	1.65
CUBA	0.809	-15.13	0.786	3.03
DOM REPB	0.574	0.	0.168	0.13
ECUADOR	0.642	0.	0.191	1.11
EL SALVA	0.510	0.	0.304	-5.52
GUATEMBL	0.564	0.	0.500	0.00
HAITI	0.519	-21.76	0.567	0.67
HONDURAS	0.515	0.	0.119	-0.65
JAMAICA	0.520	0.	0.114	1.33
MEXICO	0.593	0.	0.051	-0.60
NICARAGU	0.663	0.	0.291	2.38
PANAMA	0.653	28.33	0.944	3.21
PARAGUAY	0.658	0.	0.189	-2.50
PERU	0.100	-2.47	0.320	0.85
URUGUAY	0.262	1.39	0.489	0.89
VENEZUEL	0.666	0.	0.161	1.80

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.587	0.34	0.395	2.22
BOLIVIA	0.514	0.	0.156	-1.11
BRAZIL	0.445	0.87	0.411	0.38
CHILE	0.498	0.	0.298	1.92
COLOMBIA	0.165	21.23	0.455	-1.05
COS RICA	0.504	0.	0.311	1.85
CUBA	0.809	-15.13	0.583	-11.22
DOM REPB	0.574	0.	0.169	0.13
ECUADOR	0.642	0.	0.200	0.86
EL SALVA	0.510	0.	0.17	-11.18
GUATEMBL	0.564	0.	0.500	-0.00
HAITI	0.663	0.	0.771	7.24
HONDURAS	0.515	0.	0.103	-1.55
JAMAICA	0.520	0.	0.121	0.92
MEXICO	0.593	0.	0.043	-0.52
NICARAGU	0.663	0.	0.256	-4.49
PANAMA	0.653	0.	1.168	5.26
PARAGUAY	0.658	0.	0.174	-1.22
PERU	0.122	5.81	0.343	1.54
URUGUAY	0.276	0.88	0.507	0.62
VENEZUEL	0.666	0.	0.183	3.61

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.590	0.01	0.415	0.39
BOLIVIA	0.658	28.08	0.149	-0.70
BRAZIL	0.453	0.20	0.415	0.09
CHILE	0.498	0.	0.329	1.21
COLOMBIA	0.247	4.77	0.444	-0.29
COS RICA	0.504	0.	0.344	2.10
CUBA	0.953	0.	0.393	-5.37
DOM REPB	0.574	0.	0.208	21.93
ECUADOR	0.642	0.	0.207	0.59
EL SALVA	0.510	0.	0.189	13.63
GUATEMBL	0.564	0.	0.500	-0.10
HAITI	0.663	0.	0.985	4.03
HONDURAS	0.515	0.	0.099	-0.52
JAMAICA	0.520	0.	0.126	0.75
MEXICO	0.593	0.	0.043	-0.47
NICARAGU	0.663	0.	0.304	6.98
PANAMA	0.509	-22.07	1.207	0.
PARAGUAY	0.658	0.	0.163	-1.24
PERU	0.143	2.40	0.363	0.92
URUGUAY	0.292	1.21	0.523	0.94
VENEZUEL	0.666	0.	0.212	1.79

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.130	-19.51	0.562	0.48
EGYPT	0.561	-0.04	0.611	0.87
IRAN	0.836	0.	0.647	-0.39
IRAQ	0.611	-2.66	0.501	-0.08
ISRAEL	0.442	0.34	0.604	0.46
JORDAN	0.096	0.00	0.529	0.14
KUWAIT	0.491	51.42	0.547	2.15
LEBANON	0.607	-0.15	0.548	0.49
LIBYA	0.781	-0.45	0.597	0.04
MORROCCO	0.062	-11.47	0.611	0.76
SAU ARAB	0.823	0.21	0.695	2.96
SUDAN	0.039	-1.64	0.531	0.15
SYRIA	0.750	-0.01	0.586	-0.68
TUNESIA	0.518	-8.73	0.599	-1.74
YEMEN	0.080	100.00	0.553	-2.94

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.144	-19.26	0.573	0.56
EGYPT	0.535	-1.51	0.635	0.73
IRAN	0.836	0.	0.638	-0.06
IRAQ	0.460	-8.23	0.587	-0.11
ISRAEL	0.436	-0.77	0.602	-0.49
JORDAN	0.096	0.00	0.548	0.94
KUWAIT	0.055	-6.65	0.541	-2.33
LEBANON	0.577	-1.69	0.554	0.09
LIBYA	0.764	-0.18	0.613	0.43
MORROCCO	0.031	-13.38	0.640	1.06
SAU ARAB	0.823	-0.02	0.700	0.01
SUDAN	0.037	-0.69	0.535	0.20
SYRIA	0.750	0.04	0.582	0.14
TUNESIA	0.599	0.39	0.645	1.40
YEMEN	0.080	0.00	0.539	0.44

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.010	3866.76	0.617	2.24
EGYPT	0.475	-3.01	0.659	1.75
IRAN	0.836	0.	0.638	0.00
IRAQ	0.187	-22.99	0.595	0.68
ISRAEL	0.432	46.19	0.643	19.60
JORDAN	0.096	0.00	0.586	1.56
KUWAIT	0.080	0.00	0.757	9.51
LEBANON	0.498	-3.96	0.556	0.04
LIBYA	0.761	-0.23	0.617	0.38
MORROCCO	0.014	-14.89	0.685	1.59
SAU ARAB	0.822	-0.03	0.704	0.10
SUDAN	0.033	-3.80	0.542	0.29
SYRIA	0.746	-0.29	0.583	-0.01
TUNESIA	0.589	-0.95	0.654	-0.34
YEMEN	0.080	0.	0.559	1.91

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	.521	0.	0.091	4.30
CAMEROON	0.666	35.24	0.096	6.55
CEN AFRB	0.422	-21.66	0.032	4.57
CHAD	0.666	27.67	0.074	-44.92
PR CONGO	.953	0.	..96	1.96
DAHOMEY	0.594	0.	0.212	-30.15
ETHIOPIA	0.650	0.14	0.641	-0.96
GAMBIA	0.205	5.07	0.037	0.72
GHANA	0.731	0.28	.777	4.74
GUINEA	0.953	0.	0.082	5.30
IVRY CST	0.666	0.	0.222	586.22
KENYA	0.446	0.67	0.965	3.62
LIBERIA	0.349	73.21	0.190	-13.72
MALAGASY	.493	0.	0.179	9.60
MALAWI	0.521	0.	0.121	-34.72
MALI	0.929	0.	0.166	4.71
NIGER	0.665	0.	0.254	-10.89
NIGERIA	.751	0.07	0.133	2.25
RHODESIA	0.666	0.	0.047	12.39
RWANDA	0.400	1.43	0.054	4.60
SENEGAL	0.662	0.	0.066	4.59
SIE LEON	0.305	2.46	0.036	9.79
SOMALIA	0.793	23.12	0.065	4.23
S AFRICA	0.522	0.	0.107	0.10
TANZANIA	0.520	0.26	0.355	1.50
UGANDA	0.353	9.24	.183	7.72
UP VOLTA	0.520	-21.71	0.592	-3.18
ZAIRE	0.469	0.34	0.065	-4.94
ZAMBIA	0.566	0.56	0.026	2.07

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.665	27.71	0.103	3.52
CAMEROON	.438	3.7	0.118	6.44
CEN AFRB	0.666	0.	0.112	4.37
CHAD	0.665	0.	0.050	5.13
PR CONGO	0.953	0.	0.064	1.59
DAHOMEY	.594	0.	.42	13.45
ETHIOPIA	0.416	0.14	0.624	-0.35
GAMBIA	0.104	9.47	0.101	1.30
GHANA	0.794	0.31	0.136	7.25
GUINEA	0.953	17.84	.173	4.17
IVRY CST	0.666	0.	0.424	-11.62
KENYA	0.450	-23.52	0.114	11.15
LIBERIA	0.363	67.89	0.245	2.39
MALAGASY	0.593	0.	0.278	8.72
MALAWI	0.666	0.	0.542	4.47
MALI	0.929	0.	0.062	4.05
NIGER	0.665	0.	0.034	-61.05
NIGERIA	0.753	0.06	0.146	1.74
RHODESIA	.666	0.	0.082	13.90
RWANDA	0.423	-24.90	0.102	3.61
SENEGAL	0.662	0.	0.065	5.51
SIE LEON	0.337	1.72	0.053	7.71
SOMALIA	.823	3.54	.172	3.55
S AFRICA	0.522	0.	0.110	0.56
TANZANIA	0.535	0.21	0.054	-0.24
UGANDA	0.834	0.24	0.106	4.68
UP VOLTA	0.520	0.	.448	-7.25
ZAIRE	0.477	-23.64	0.082	4.51
ZAMBIA	0.582	33.63	0.033	2.93

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.521	0.	0.128	3.20
CAMEROON	0.537	32.66	0.153	6.08
CEN AFRB	0.666	0.	.133	4.27
CHAD	0.521	0.	0.072	7.55
PR CONGO	0.953	0.	0.069	1.53
DAHOMEY	0.594	0.	0.073	12.33
ETHIOPIA	0.421	-25.43	0.612	-1.36
GAMBIA	0.155	7.15	0.110	1.96
GHANA	0.595	0.27	0.152	7.49
GUINEA	0.953	17.84	0.124	3.63
IVRY CST	0.666	27.66	.734	-.28
KENYA	0.472	0.46	0.194	11.35
LIBERIA	0.232	-27.90	0.213	-5.55
MALAGASY	0.593	0.	0.360	2.68
MALAWI	0.666	0.	.54	5.76
MALI	0.929	0.	0.102	4.74
NIGER	0.665	0.	0.039	2.96
NIGERIA	0.755	0.05	0.154	1.36
RHODESIA	0.666	0.	.13	8.94
RWANDA	.545	0.56	0.121	3.42
SENEGAL	0.662	0.	0.113	5.09
SIE LEON	0.362	1.30	0.074	6.37
SOMALIA	0.643	0.43	0.121	3.27
S AFRICA	0.522	0.	0.111	0.01
TANZANIA	0.545	0.15	0.110	19.51
UGANDA	0.433	0.17	0.125	2.74
UP VOLTA	0.520	0.	0.234	-16.92
ZAIRE	.527	33.15	.93	3.41
ZAMBIA	.565	32.67	0.034	2.24

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	5.826	7.78
BOLIVIA	*.	0.	-5.646	-2.57
BRAZIL	0.222	27.45	5.947	-4.11
CHILE	0.	0.	13.033	6.89
COLOMBIA	0.	0.	21.757	18.88
COS RICA	0.	0.	57.586	50.39
CUBA	0.	0.	-8.129	-14.11
DOM REPB	0.	0.	7.899	3.48
ECUADOR	0.	0.	-7.402	-4.54
EL SALVA	0.	0.	-1.373	1.08
GUATEMAL	0.	0.	8.173	-0.46
HAITI	0.	0.	-3.599	-7.91
HONDURAS	0.	0.	-3.681	-3.05
JAMAICA	0.	0.	30.075	1.65
MEXICO	0.300	3.52	1.349	0.97
NICARAGU	0.	0.	-6.843	-9.95
PANAMA	0.	0.	-4.378	-26.37
PARAGUAY	0.	0.	377.734	-39.57
PERU	0.	0.	-8.962	-8.63
URUGUAY	0.	0.	41.315	3.06
VENEZUEL	0.	0.	4.903	7.84

1990

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	5.911	-4.57
BOLIVIA	0.	0.	-5.513	-2.49
BRAZIL	0.338	1.29	4.466	-5.54
CHILE	0.	0.	19.537	10.48
COLOMBIA	0.	0.	1635.781	1704.30
COS RICA	0.	0.	-22.819	-37.36
CUBA	0.	0.	-4.532	-9.51
DOM REPB	0.	0.	8.985	6.55
ECUADOR	0.	0.	-5.867	-4.65
EL SALVA	0.	0.	-1.186	-4.61
GUATEMAL	0.	0.	8.959	3.54
HAITI	0.	0.	-2.166	-10.01
HONDURAS	0.	0.	-2.893	-5.52
JAMAICA	0.	0.	46.480	15.79
MEXICO	0.312	0.35	1.725	7.74
NICARAGU	0.	0.	-4.243	-8.77
PANAMA	0.	0.	-1.377	-16.63
PARAGUAY	0.	0.	-966.397	-185.83
PERU	0.	0.	-6.493	-5.62
URUGUAY	0.	0.	63.817	14.51
VENEZUEL	0.	0.	4.938	-2.71

1995

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	6.309	5.14
BOLIVIA	0.	0.	-4.053	-5.23
BRAZIL	0.497	11.72	3.259	-7.68
CHILE	0.	0.	41.057	20.83
COLOMBIA	0.	0.	-15.808	-22.35
COS RICA	0.	0.	-9.431	-11.50
CUBA	0.	0.	-2.755	-9.55
DOM REPB	0.	0.	14.875	9.30
ECUADOR	0.	0.	-4.343	-6.65
EL SALVA	0.	0.	-0.887	-6.23
GUATEMAL	0.	0.	9.970	0.56
HAITI	0.	0.	-1.186	-12.39
HONDURAS	0.	0.	-2.121	-6.48
JAMAICA	0.	0.	365.199	150.75
MEXICO	0.330	0.51	2.483	7.19
NICARAGU	0.	0.	-2.677	-9.04
PANAMA	0.	0.	-0.669	-12.17
PARAGUAY	0.	0.	-116.562	-13.13
PERU	0.	0.	-4.584	-7.19
URUGUAY	0.	0.	137.972	16.78
VENEZUEL	0.	0.	5.154	1.49

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.411	3.25	-11.943	-13.18
EGYPT	5.532	-0.11	43.684	-1.11
IRAN	1.214	-0.52	6.954	-3.24
IRAQ	2.025	0.49	43.516	10.12
ISRAEL	3.975	0.	-225.402	163.91
JORDAN	3.715	0.	-1.?95	-6.40
KUWAIT	0.507	0.	-0.749	-32.39
LEBANON	2.158	0.	387.347	-42.06
LIBYA	2.287	0.	22.677	0.03
MOROCCO	1.146	1.19	-3.477	-8.?9
SAU ARAB	2.017	-0.35	18.533	-2.67
SUDAN	1.313	0.91	-8.942	2.01
SYRIA	2.111	-1.16	21.267	-6.11
TUNESIA	1.927	-2.94	59.882	9.63
YEMEN	2.028	0.	-0.056	-26.48

1990

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.411	-1.71	-6.861	-10.30
EGYPT	5.516	-0.04	57.372	13.7?
IRAN	1.179	-0.62	6.538	-0.19
IRAQ	2.068	0.40	443.557	228.81
ISRAEL	3.975	0.	-49.461	-51.72
JORDAN	3.715	0.	-0.741	-7.34
KUWAIT	0.507	0.	-0.113	-35.34
LEBANON	2.158	0.	-241.115	-67.06
LIBYA	2.287	0.	24.688	1.64
MOROCCO	1.182	0.39	-5.609	-7.77
SAU ARAB	1.93?	-1.1?	17.313	-0.67
SUDAN	1.301	-0.62	-9.307	-0.07
SYRIA	1.926	-2.99	17.015	-3.44
TUNESIA	2.003	2.83	48.564	-1.94
YEMEN	2.028	0.	-0.013	-25.38

1995

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.471	2.64	-3.672	-12.53
EGYPT	5.492	-0.11	148.803	29.02
IRAN	1.148	-0.47	6.?1?	-2.94
IRAQ	2.109	0.39	-34.959	-24.75
ISRAEL	3.164	-8.16	-2.540	-45.89
JORDAN	3.715	0.	-0.479	-9.18
KUWAIT	0.507	0.	-0.017	-32.32
LEBANON	2.158	0.	-46.544	-18.64
LIBYA	2.287	0.	24.015	-1.75
MOROCCO	1.201	0.26	-3.657	-9.62
SAU ARAB	1.913	-1.31	15.180	-4.11
SUDAN	1.262	-0.65	-8.595	-2.48
SYRIA	1.889	-0.06	15.474	-2.27
TUNESIA	2.028	0.	62.513	13.80
YEMEN	2.028	0.	-0.003	-26.86

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.551	0.36	-4.554	5.65
CAMEROON	0.465	0.19	-2.551	1.43
CEN AFRB	0.629	1.00	-71.934	52.74
CHAD	0.464	0.44	-2.475	1.93
PR CONGO	0.441	0.24	-15.109	-17.50
DAHOMEY	0.453	-3.55	-2.373	-2.62
ETHIOPIA	1.112	-0.29	-3.193	-7.94
GAMBIA	0.660	14.47	-51.317	34.91
GHANA	0.399	-0.07	-1.665	-3.48
GUINEA	1.113	0.03	-4.112	4.23
IVORY CST	1.073	1.46	-5.413	-14.07
KENYA	0.375	-0.01	-0.823	0.70
LIBERIA	0.440	-2.96	-1.771	-17.88
MALAGASY	0.423	-0.42	-5.801	11.21
MALAWI	0.440	-0.53	-0.442	0.40
MALI	0.473	-0.58	-1.020	0.59
NIGER	0.440	0.14	-3.414	-1.03
NIGERIA	4.051	-0.27	-2.903	-7.94
RHODESIA	0.431	-0.61	-1.613	3.65
RWANDA	0.459	-0.56	-2.523	2.54
SENEGAL	0.493	0.77	-4.691	0.56
SIE LEON	0.567	1.10	-1.543	5.05
SOMALI	0.544	0.16	-5.291	4.17
S AFRICA	0.339	-1.22	17.795	53.77
TANZANIA	0.389	0.17	-2.966	-5.46
UGANDA	0.394	-0.02	-1.577	-2.23
JP VOLTA	0.431	0.17	-3.159	-2.46
ZAIRE	0.669	-0.97	-0.593	-3.95
ZAMBIA	0.833	-0.59	-23.575	-10.59

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	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.553	0.24	-5.617	3.66
CAMEROON	0.465	-0.10	-2.961	2.57
CEN AFRB	0.656	0.88	93.976	-22.29
CHAD	0.474	0.39	-2.551	3.21
PR CONGO	0.455	-0.16	-6.849	-13.60
DAHOMEY	0.471	0.71	-1.573	8.94
ETHIOPIA	1.112	0.09	-2.136	-5.94
GAMBIA	0.715	0.96	-39.133	-5.94
GHANA	0.591	-1.24	-1.521	-0.76
GUINEA	1.112	-0.03	-4.752	1.79
IVORY CST	1.041	-1.95	-1.405	-26.10
KENYA	0.353	-1.54	-0.911	2.74
LIBERIA	0.473	0.79	-1.267	-5.91
MALAGASY	0.409	-0.52	-13.613	12.76
MALAWI	0.448	0.53	-0.493	3.18
MALI	0.474	0.46	-1.193	4.04
NIGER	0.442	0.04	-3.432	1.82
NIGERIA	4.039	-0.17	-2.633	-6.64
RHODESIA	0.412	-6.88	-2.051	4.87
RWANDA	0.459	-0.36	-2.699	1.32
SENEGAL	0.493	-0.22	-4.282	1.25
SIE LEON	0.593	0.67	-1.872	3.35
SOMALI	0.555	3.24	-5.021	1.39
S AFRICA	0.334	-0.42	-6.958	-31.98
TANZANIA	0.389	-0.07	-2.649	-5.74
UGANDA	0.378	-1.25	-1.422	-2.09
JP VOLTA	0.435	0.16	-0.164	2.11
ZAIRE	0.634	-1.03	-0.515	-3.35
ZAMBIA	0.788	-3.30	-24.833	-7.58

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	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.564	0.12	-6.204	1.75
CAMEROON	0.460	-0.29	-2.294	3.32
CEN AFRB	0.664	0.76	23.061	-13.15
CHAD	0.481	0.24	-2.632	3.71
PR CONGO	0.651	0.03	-3.946	-3.12
DAHOMEY	0.477	0.17	-2.773	4.94
ETHIOPIA	1.111	-0.05	-2.094	-7.93
GAMBIA	0.776	3.59	-53.396	20.58
GHANA	0.356	-1.48	-1.537	0.98
GUINEA	1.133	-0.19	-4.923	0.32
IVORY CST	1.033	1.29	-5.515	-14.12
KENYA	0.324	-1.92	-1.347	2.39
LIBERIA	0.466	-0.26	-0.796	-3.52
MALAGASY	0.391	-0.93	-32.544	45.74
MALAWI	0.442	-1.25	-0.495	-2.21
MALI	0.473	-0.29	-1.166	2.17
NIGER	0.441	-0.17	-3.463	1.89
NIGERIA	3.941	-0.12	-2.433	-7.91
RHODESIA	0.372	-1.09	-2.492	3.75
RWANDA	0.456	-0.71	-2.554	-1.86
SENEGAL	0.493	-0.04	-4.773	3.06
SIE LEON	0.613	0.67	-2.063	0.98
SOMALI	0.552	-0.01	-6.179	3.26
S AFRICA	0.331	-0.09	-2.233	-15.76
TANZANIA	0.389	0.12	-2.455	-7.66
UGANDA	0.363	-0.67	-1.219	-1.69
JP VOLTA	0.436	0.01	-0.177	2.98
ZAIRE	0.616	-0.05	-3.607	-5.44
ZAMBIA	0.771	-0.14	-19.347	-7.03

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	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVI'	13.119	4.12	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	8.109	2.2.91	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	1.366	-6.22	0.	0.
CUBA	7.746	3.06	1.000	0.
DOM REPB	1.975	50.26	1.	1.
ECUADOR	6.620	0.87	0.	0.
EL SALVA	0.	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	14.173	4.21	1.000	0.
HONDURAS	5.970	31.83	0.	0.
JAMAICA	14.992	-0.90	0.	0.
MEXICO	0.	0.	0.	0.
NICARAGU	2.395	10.62	0.181	100.00
PANAMA	16.771	-2.82	1.000	0.
PARAGUAY	14.993	1.99	0.	0.
PERU	2.776	-4.36	0.	0.
URUGUAY	13.831	-1.09	0.	0.
VENEZUEL	0.	0.	0.	0.

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	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVI'	14.412	0.88	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	9.496	16.92	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	0.959	-6.34	0.	0.
CUBA	7.938	-0.69	1.000	0.
DOM REPB	2.226	9.34	0.	0.
ECUADOR	6.724	0.01	0.	0.
EL SALVA	0.	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	14.925	-0.24	1.000	0.
HONDURAS	1.772	6.61	1.	1.
JAMAICA	14.030	-1.50	0.	0.
MEXICO	0.	0.	0.	0.
NICARAGU	4.439	7.68	0.520	-5.95
PANAMA	12.962	-5.73	1.00.	1.
PARAGUAY	15.513	0.12	0.	0.
PERU	2.092	-6.65	0.	0.
URUGUAY	18.764	-0.70	0.	0.
VENEZUEL	0.	0.	0.	0.

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	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVIA	14.575	-0.10	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	6.803	6.75	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	0.737	-4.41	0.	0.
CUBA	7.315	-2.44	0.887	20.77
DOM REPB	2.867	3.36	0.384	100.00
ECUADOR	6.500	-1.08	0.	0.
EL SALVA	..	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	14.000	-1.76	1.000	0.
HONDURAS	2.193	3.15	0.	0.
JAMAICA	12.918	-1.69	0.	0.
MEXICO	0.	0.	0.	0.
NICARAGU	6.349	6.85	1.000	0.
PANAMA	9.865	-4.63	1.000	0.
PARAGUAY	15.283	-0.50	0.	0.
PERU	1.291	-11.64	0.	0.
URUGUAY	19.355	-0.32	0.	0.
VENEZUEL	0.	0.	0.	0.

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	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.	0.
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.	0.	0.	0.
ISRAEL	0.088	-82.70	0.	0.
JORDAN	0.695	-24.89	0.292	-29.74
KUWAIT	1.465	2.33	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MORROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.972	-2.83
YEMEN	1.410	-2.05	0.896	-4.11

1990

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.	0.
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.	0.	0.	0.
ISRAEL	0.	0.	0.	0.
JORDAN	0.	0.	0.	0.
KUWAIT	1.538	0.51	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MORROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.	0.
YEMEN	0.996	-11.48	0.557	-14.64

1995

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.052	100.00
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.	0.	0.	0.
ISRAEL	0.129	100.00	1.000	0.
JORDAN	0.	0.	0.	0.
KUWAIT	1.552	0.12	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MORROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.	0.
YEMEN	0.	-100.00	0.	0.

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	36.155	33.25	1.000	0.
CAMEROON	22.639	28.05	1.003	0.
CEN AFRB	12.494	37.03	1.000	25.71
CHAD	287.641	43.56	1.000	0.
PR CONGO	352.313	41.37	1.000	0.
DAHOMEY	0.	0.	0.590	-10.54
ETHIOPIA	355.046	40.96	1.000	0.
GAMBIA	660.294	41.29	1.000	0.
GHANA	0.	0.	0.157	-9.12
GUINEA	7.797	34.65	0.473	61.10
IVRY CST	0.	0.	0.237	645.14
KENYA	126.623	35.94	1.000	0.
LIBERIA	553.718	41.11	1.000	0.
MALAGASY	0.	0.	1.	0.
MALAWI	2.361	-35.31	1.000	0.
MALI	0.	0.	0.	0.
NIGER	0.	0.	.452	-1.29
NIGERIA	0.	0.	0.695	-3.20
RHODESIA	0.	0.	0.144	-34.05
RWANDA	423.528	40.92	1.000	0.
SENEGAL	0.57	99.72	1.	0.
SIE LEON	0.	0.	0.	0.
SOMALIA	13.538	27.80	1.001	0.
S AFRICA	0.	0.	0.	0.
TANZANIA	0.	0.	0.159	18.43
UGANDA	0.	0.	0.324	-9.15
UP VOLTA	0.	0.	0.843	-2.28
ZAIRE	325.327	40.63	1.000	0.
ZAMBIA	33.445	32.35	1.000	0.

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	180.791	39.06	1.000	0.
CAMEROON	102.126	38.45	1.000	0.
CEN AFRB	57.455	36.61	1.000	0.
CHAD	1614.283	41.52	1.000	0.
PR CONGO	9134.233	41.67	1.000	0.
DAHOMEY	0.	0.	.317	-15.73
ETHIOPIA	2.069.432	41.59	1.000	0.
GAMBIA	3752.779	41.65	1.000	0.
GHANA	0.	0.	0.	0.
GUINEA	23.586	31.2	1.	0.
IVRY CST	0.	0.	0.439	-12.31
KENYA	695.250	41.21	1.000	0.
LIBERIA	3133.526	41.62	1.000	0.
MALAGASY	1.	0.	0.	0.
MALAWI	0.	0.	0.643	-5.46
MALI	0.	0.	0.	0.
NIGER	0.	0.	0.371	-5.64
NIGERIA	0.	0.	0.52	-2.32
RHODESIA	1.	0.	0.	0.
RWANDA	2394.572	41.59	1.000	0.
SENEGAL	0.461	45.34	0.	0.
SIE LEON	0.712	79.45	0.	0.
SOMALIA	53.675	35.9	1.000	0.
S AFRICA	0.	0.	0.004	-87.72
TANZANIA	0.	0.	0.251	7.17
UGANDA	0.	0.	0.	-100.00
UP VOLTA	0.	0.	.735	-3.29
ZAIRE	1831.326	41.53	1.000	0.
ZAMBIA	164.314	39.70	1.000	0.

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1004.564	41.41	1.000	0.
CAMEROON	556.649	41.11	1.000	0.
CEN AFRB	304.422	40.75	1.000	0.
CHAD	9204.733	41.69	1.000	0.
PR CONGO	29335.336	41.72	1.000	0.
DAHOMEY	0.	0.	0.	-100.00
ETHIOPIA	11403.857	41.71	1.000	0.
GAMBIA	21433.503	41.72	1.000	0.
GHANA	0.	0.	0.	0.
GUINEA	136.832	39.33	1.000	0.
IVRY CST	0.	0.	1.000	13.33
KENYA	3046.753	41.64	1.000	0.
LIBERIA	17327.129	41.71	1.000	0.
MALAGASY	0.	0.	0.	0.
MALAWI	0.	0.	0.346	-13.80
MALI	0.	0.	0.	0.
NIGER	0.	0.	0.202	-17.11
NIGERIA	0.	0.	0.477	-1.22
RHODESIA	0.	0.	0.	0.
RWANDA	13666.497	41.70	1.000	0.
SENEGAL	2.752	42.30	0.	0.
SIE LEON	5.443	43.15	0.517	284.5
SOMALIA	283.933	43.58	1.00	0.
S AFRICA	0.	0.	0.096	53.64
TANZANIA	0.	0.	0.361	7.06
UGANDA	0.	0.	0.	0.
UP VOLTA	0.	0.	0.593	-4.92
ZAIRE	10443.467	41.69	1.000	0.
ZAMBIA	912.641	41.16	1.000	0.

1985

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	3	3
CUBA	1	1
HAITI	1	3
PANAMA	3	1
KUWAIT	3	3
TUNESIA	1	3
YEMEN	1	1
BURUNDI	1	1
CAMEROON	3	1
CEN AFRB	1	3
CHAD	3	1
PR CONGO	3	1
ETHIOPIA	3	1
GAMBIA	3	1
GUINEA	3	3
KENYA	1	3
LIBERIA	3	1
MALAWI	1	3
RWANDA	1	1
SOMALIA	3	3
UP VOLTA	1	2
ZAIRE	1	3
ZAMBIA	3	3

1990

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	1	3
CUBA	1	1
HAITI	3	1
PANAMA	3	3
KUWAIT	1	1
BURUNDI	3	1
CAMEROON	1	3
CEN AFRB	3	1
CHAD	3	3
PR CONGO	3	1
ETHIOPIA	1	1
GAMBIA	1	3
GUINEA	3	1
KENYA	1	1
LIBERIA	3	1
RWANDA	1	3
SOMALIA	3	1
ZAIRE	1	1
ZAMBIA	3	1

1995

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	3	3
CUBA	3	1
HAITI	3	1
NICARAGU	3	1
PANAMA	1	3
ISRAEL	3	1
KUWAIT	1	3
BURUNDI	3	1
CAMEROON	3	3
CEN AFRB	3	3
CHAD	1	1
PR CONGO	3	1
ETHIOPIA	1	3
GAMBIA	1	1
GUINEA	3	1
IVRY CST	3	1
KENYA	1	3
LIBERIA	1	3
RWANDA	3	3
SOMALIA	3	1
ZAIRE	3	3
ZAMBIA	3	1

ANNEX VII
Simulations

For the simulations the values of U.S. and Soviet policy variables were altered at various points in the forecast period, as described in Chapter 4 of this Technical Appendix. The alternative forecasts based on these policy changes cover the same years as the forecasts shown in Annex VI: 1985, 1990, and 1995.

1985

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	29.	1.50	39853.	-0.13
BOLIVIA	7.	2.60	695.	-0.74
BRAZIL	143.	2.90	169301.	7.15
CHILE	13.	2.40	10732.	2.32
COLOMBIA	34.	3.20	21923.	4.79
COS RICA	3.	3.20	1660.	3.61
CUBA	12.	2.00	3568.	-0.65
DOM REPB	6.	2.90	11326.	1.12
ECUADOR	10.	3.40	2229.	4.39
EL SALVA	6.	3.70	1188.	4.00
GUATEMAL	8.	2.90	8269.	6.84
HAITI	6.	2.10	689.	2.04
HONDURAS	4.	3.10	912.	1.25
JAMAICA	3.	2.40	2755.	2.54
MEXICO	81.	3.50	92874.	5.56
NICARAGU	3.	3.70	1018.	1.22
PANAMA	2.	3.00	423.	-6.65
PARAGUAY	4.	3.40	1156.	7.20
PERU	21.	3.10	6413.	3.93
URUGUAY	3.	1.20	3234.	2.56
VENEZUEL	17.	3.40	26149.	3.24

1990

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	34.	1.50	59867.	-0.39
BOLIVIA	9.	2.60	832.	1.60
BRAZIL	199.	2.90	247074.	8.11
CHILE	16.	2.40	14270.	2.22
COLOMBIA	46.	3.20	36272.	4.32
COS RICA	4.	3.20	2508.	4.54
CUBA	14.	2.00	4015.	1.27
DOM REPB	8.	2.90	12221.	0.02
ECUADOR	14.	3.40	3476.	4.53
EL SALVA	9.	3.70	1830.	2.04
GUATEMAL	11.	2.90	14585.	4.94
HAITI	7.	2.10	618.	-1.94
HONDURAS	6.	3.10	1189.	1.46
JAMAICA	3.	2.40	3202.	0.94
MEXICO	114.	3.50	145084.	4.10
NICARAGU	5.	3.70	1201.	0.89
PANAMA	3.	3.00	304.	-1.48
PARAGUAY	6.	3.40	1864.	7.30
PERU	29.	3.10	10820.	5.08
URUGUAY	4.	1.20	4012.	2.88
VENEZUEL	24.	3.40	36310.	4.88

1995

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	32.	1.50	50527.	8.45
BOLIVIA	8.	2.60	755.	2.87
BRAZIL	165.	2.90	165308.	9.16
CHILE	14.	2.40	12538.	3.48
COLOMBIA	40.	3.20	28711.	5.78
COS RICA	3.	3.20	2025.	3.99
CUBA	13.	2.00	3743.	1.89
DOM REPB	7.	2.90	12026.	1.07
ECUADOR	12.	3.40	2782.	4.59
EL SALVA	7.	3.70	1527.	6.22
GUATEMAL	9.	2.90	11266.	5.96
HAITI	6.	2.10	674.	-1.46
HONDURAS	5.	3.10	1160.	3.96
JAMAICA	3.	2.40	3025.	1.44
MEXICO	96.	3.50	117364.	4.53
NICARAGU	4.	3.70	1122.	2.30
PANAMA	3.	3.00	337.	-3.06
PARAGUAY	5.	3.40	1445.	2.69
PERU	25.	3.10	8331.	6.34
URUGUAY	4.	1.20	567.	1.62
VENEZUEL	20.	3.40	28531.	8.85

| | POPULATION(MILLIONS) | | GDP(MILLIONS US $) | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	24.	3.50	8824.	0.96
EGYPT	48.	2.50	32021.	5.25
IRAN	46.	3.00	103342.	8.88
IRAQ	15.	3.30	9939.	0.36
ISRAEL	4.	2.90	2219.	20.00
JORDAN	4.	3.40	115.	9.90
KUWAIT	3.	9.80	856.	-2.45
LEBANON	4.	3.00	2617.	9.52
LIBYA	3.	3.70	7337.	3.94
MOROCCO	24.	2.90	6784.	2.67
SAU ARAB	12.	2.60	68612.	16.14
SUDAN	23.	2.70	5918.	7.68
SYRIA	10.	3.40	25945.	20.00
TUNESIA	8.	2.90	6089.	1.50
YEMEN	9.	2.70	16.	-20.00

1990

| | POPULATION(MILLIONS) | | GDP(MILLIONS US $) | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	28.	3.50	10584.	5.18
EGYPT	55.	2.50	36980.	3.36
IRAN	53.	3.00	147607.	.6.55
IRAQ	19.	3.30	9651.	-0.95
ISRAEL	5.	2.90	2766.	-6.09
JORDAN	4.	3.40	131.	1.07
KUWAIT	5.	9.80	471.	-20.00
LEBANON	5.	3.00	3473.	3.83
LIBYA	4.	3.70	9442.	8.22
MOROCCO	27.	2.90	7649.	2.25
SAU ARAB	13.	2.60	135154.	13.65
SUDAN	27.	2.70	8627.	7.79
SYRIA	12.	3.40	64561.	20.00
TUNESIA	9.	2.90	10170.	12.34
YEMEN	10.	2.70	5.	-20.00

1995

| | POPULATION(MILLIONS) | | GDP(MILLIONS US $) | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	34.	3.50	10636.	-3.67
EGYPT	62.	2.50	45834.	3.24
IRAN	61.	3.00	192775.	4.84
IRAQ	21.	3.30	9140.	-1.13
ISRAEL	6.	2.90	1040.	-20.00
JORDAN	5.	3.40	136.	0.58
KUWAIT	7.	9.80	164.	-20.00
LEBANON	6.	3.00	4028.	2.58
LIBYA	5.	3.70	14128.	7.06
MOROCCO	31.	2.90	8415.	1.77
SAU ARAB	15.	2.80	244338.	11.92
SUDAN	31.	2.70	12246.	6.99
SYRIA	15.	3.40	111964.	6.03
TUNESIA	10.	2.90	13193.	0.92
YEMEN	11.	2.70	2.	-20.00

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	5.	2.00	1080.	9.26
CAMEROON	8.	2.10	2307.	7.92
CEN AFR	2.	2.50	1265.	9.66
CHAD	5.	2.00	486.	9.09
PR CONGO	1.	2.20	601.	3.76
DAHOMEY	4.	2.70	346.	16.79
ETHIOPIA	33.	1.90	818.	0.61
GAMBIA	1.	2.10	290.	7.41
GHANA	13.	2.90	3523.	5.72
GUINEA	5.	2.30	1911.	9.19
IVRY CST	6.	2.40	2046.	-3.07
KENYA	17.	2.90	3121.	9.66
LIBERIA	2.	1.90	419.	1.47
MALAGASY	11.	2.50	4507.	10.64
MALAWI	6.	2.50	628.	11.04
MALI	7.	2.00	1243.	9.82
NIGER	6.	2.60	544.	7.24
NIGERIA	80.	2.50	13038.	3.94
RHODESIA	8.	3.30	1965.	11.76
RWANDA	6.	3.20	1795.	10.47
SENEGAL	6.	2.40	1977.	6.72
SIE LEON	3.	1.50	629.	9.39
SOMALIA	4.	2.00	1692.	8.03
S AFRICA	32.	2.70	19901.	1.44
TANZANIA	20.	2.60	3637.	3.73
UGANDA	14.	2.80	3811.	6.13
UP VOLTA	7.	2.10	238.	5.42
ZAIRE	38.	3.90	5897.	7.65
ZAMBIA	6.	2.60	3176.	6.42

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	5.	2.00	2419.	8.25
CAMEROON	9.	2.10	3552.	8.55
CEN AFR	3.	2.50	2000.	9.59
CHAD	5.	2.00	750.	8.95
PR CONGO	1.	2.20	714.	3.29
DAHOMEY	5.	2.70	651.	13.39
ETHIOPIA	36.	1.90	824.	-0.03
GAMBIA	1.	2.10	392.	6.52
GHANA	15.	2.90	5147.	8.89
GUINEA	6.	2.30	2856.	8.26
IVRY CST	7.	2.40	2046.	2.22
KENYA	19.	2.90	5248.	11.47
LIBERIA	2.	1.90	441.	0.64
MALAGASY	12.	2.50	7429.	10.36
MALAWI	7.	2.50	953.	7.25
MALI	8.	2.00	1988.	9.65
NIGER	7.	2.60	839.	8.87
NIGERIA	90.	2.50	15561.	3.40
RHODESIA	9.	3.30	3449.	11.71
RWANDA	7.	3.20	2794.	8.66
SENEGAL	6.	2.40	2931.	8.47
SIE LEON	4.	1.50	947.	8.07
SOMALIA	4.	2.30	2552.	8.43
S AFRICA	36.	2.70	22132.	2.37
TANZANIA	22.	2.60	4294.	3.67
UGANDA	17.	2.80	5476.	6.23
UP VOLTA	8.	2.10	426.	6.44
ZAIRE	46.	3.90	8944.	8.55
ZAMBIA	7.	2.60	4563.	7.52

	POPULATION(MILLIONS)		GDP(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	6.	2.00	3529.	7.65
CAMEROON	10.	2.10	5419.	8.99
CEN AFR	3.	2.50	3167.	9.66
CHAD	6.	2.00	1139.	8.53
PR CONGO	2.	2.20	839.	3.28
DAHOMEY	5.	2.70	1208.	12.51
ETHIOPIA	40.	1.90	833.	0.21
GAMBIA	1.	2.10	571.	8.15
GHANA	17.	2.90	8124.	10.15
GUINEA	7.	2.30	4216.	7.64
IVRY CST	8.	2.40	1419.	-13.76
KENYA	22.	2.90	9233.	12.37
LIBERIA	2.	1.90	464.	1.21
MALAGASY	14.	2.50	11947.	9.77
MALAWI	8.	2.50	1465.	10.33
MALI	9.	2.00	3003.	9.93
NIGER	8.	2.60	1273.	9.81
NIGERIA	102.	2.50	18190.	3.03
RHODESIA	11.	3.30	5894.	11.11
RWANDA	8.	3.20	4417.	8.26
SENEGAL	7.	2.40	4352.	8.59
SIE LEON	4.	1.50	1344.	7.39
SOMALIA	5.	2.30	3681.	7.26
S AFRICA	42.	2.70	23961.	1.29
TANZANIA	25.	2.60	4814.	1.90
UGANDA	19.	2.80	7674.	6.32
UP VOLTA	9.	2.10	664.	9.57
ZAIRE	56.	3.90	13169.	7.65
ZAMBIA	8.	2.60	6269.	6.30

1985

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	34765.	3.72	1860.	-43.04
BOLIVIA	527.	-0.45	22.	-28.35
BRAZIL	97719.	8.70	3117.	-21.27
CHILE	8140.	3.07	331.	-20.29
COLOMBIA	18165.	5.83	904.	-15.26
COS RICA	1229.	3.05	99.	4.42
CUBA	2827.	-0.43	56.	-35.56
DOM REPB	10058.	2.51	176.	-47.96
ECUADOR	1601.	3.91	C.	0.
EL SALVA	942.	5.31	41.	-27.10
GUATEMAL	4802.	6.54	218.	-5.10
HAITI	418.	3.06	62.	-0.01
HONDURAS	755.	2.53	16.	-48.16
JAMAICA	1597.	2.22	180.	2.52
MEXICO	67524.	5.40	3294.	18.24
NICARAGU	835.	1.55	10.	-48.54
PANAMA	471.	-3.27	0.	0.
PARAGUAY	736.	4.76	44.	40.34
PERU	4884.	4.27	290.	-24.78
URUGUAY	1829.	2.01	58.	18.70
VENEZUEL	8143.	2.78	1454.	-21.71

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	43275.	4.99	3689.	100.12
BOLIVIA	545.	1.28	34.	30.50
BRAZIL	149474.	8.91	5569.	29.15
CHILE	9460.	2.97	411.	19.35
COLOMBIA	23830.	5.40	1140.	16.47
COS RICA	1457.	3.73	105.	0.05
CUBA	2868.	0.74	92.	44.16
DOM REPB	16754.	0.89	125.	31.77
ECUADOR	1973.	4.43	0.	0.
EL SALVA	1220.	5.58	56.	51.47
GUATEMAL	6417.	5.61	262.	6.93
HAITI	435.	-0.31	47.	-7.55
HONDURAS	866.	2.89	32.	74.93
JAMAICA	1741.	1.46	168.	-2.58
MEXICO	85928.	4.70	3291.	-4.74
NICARAGU	900.	1.45	17.	72.04
PANAMA	415.	-1.79	0.	0.
PARAGUAY	903.	3.71	31.	-37.80
PERU	6375.	5.99	417.	25.34
URUGUAY	2018.	1.96	46.	-20.78
VENEZUEL	11060.	7.88	1989.	25.34

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	53132.	3.67	1803.	-55.35
BOLIVIA	589.	1.75	31.	-14.32
BRAZIL	227092.	8.66	6959.	-3.25
CHILE	10809.	2.56	360.	-12.01
COLOMBIA	30423.	4.79	1099.	-8.31
COS RICA	1780.	4.29	117.	3.02
CUBA	3033.	1.38	83.	-17.19
DOM REPB	16996.	0.24	60.	-30.21
ECUADOR	2460.	4.52	1.	100.00
EL SALVA	1485.	3.02	35.	-40.05
GUATEMAL	8240.	4.84	282.	-0.47
HAITI	411.	-1.65	46.	3.60
HONDURAS	983.	2.36	20.	-37.35
JAMAICA	1842.	0.92	164.	0.16
MEXICO	106669.	4.23	3750.	1.77
NICARAGU	957.	1.14	9.	-40.47
PANAMA	392.	-0.80	0.	0.
PARAGUAY	1110.	4.71	61.	94.72
PERU	8393.	5.59	412.	-9.35
URUGUAY	2253.	2.38	69.	35.88
VENEZUEL	14464.	4.48	1780.	-14.03

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	6803.	4.09	418.	-32.97
EGYPT	19748.	5.16	1104.	7.28
IRAN	37659.	8.44	4225.	1.82
IRAO	4579.	0.38	305.	-5.04
ISRAEL	1391.	15.69	614.	3.00
JORDAN	187.	1.97	9.	79.15
KUWAIT	182.	-3.31	71.	47.82
LEBANON	1629.	6.70	192.	5.63
LIBYA	2241.	5.10	289.	-5.16
MORROCCO	4935.	2.77	250.	-5.46
SAU ARAB	22428.	16.94	2429.	9.53
SUDAN	2459.	5.77	261.	-3.43
SYRIA	8734.	18.83	1261.	18.87
TUNESIA	3154.	1.37	117.	-24.53
YEMEN	42.	-14.88	33.	1.96

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	8222.	3.66	613.	50.41
EGYPT	23966.	3.31	1015.	-6.58
IRAN	53090.	6.34	4641.	2.08
IRAO	4454.	-0.91	250.	-2.65
ISRAEL	1680.	-5.20	588.	-4.92
JORDAN	199.	0.67	5.	-12.93
KUWAIT	70.	-32.76	43.	-51.42
LEBANON	2421.	4.57	190.	-3.75
LIBYA	2853.	7.15	277.	10.54
MORROCCO	5603.	2.13	247.	1.66
SAU ARAB	45714.	14.38	4046.	11.29
SUDAN	3320.	6.35	357.	8.69
SYRIA	21090.	19.51	3049.	19.53
TUNESIA	5090.	11.62	551.	21.65
YEMEN	18.	-16.83	34.	0.60

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	9518.	2.42	304.	-45.63
EGYPT	28121.	3.20	1060.	5.71
IRAN	69002.	4.80	4690.	-1.42
IRAO	4226.	-1.09	241.	0.05
ISRAEL	790.	-14.38	449.	0.49
JORDAN	203.	0.26	4.	-0.08
KUWAIT	0.	0.	71.	9.94
LEBANON	2856.	2.80	176.	-0.45
LIBYA	4272.	7.59	430.	1.04
MORROCCO	6144.	1.72	236.	-1.74
SAU ARAB	85198.	12.56	6596.	9.72
SUDAN	4471.	6.04	419.	1.02
SYRIA	38851.	7.78	4060.	-10.59
TUNESIA	6524.	0.89	434.	-21.66
YEMEN	6.	-21.68	35.	0.19

1985

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1035.	9.79	116.	2.27
CAMEROON	1111.	8.07	139.	3.18
CEN AFRB	829.	9.51	118.	2.27
CHAD	304.	8.04	14.	12.43
FR CONGO	464.	3.72	87.	1.08
DAHOMEY	165.	15.10	25.	40.25
ETHIOPIA	522.	0.48	58.	3.01
GAMBIA	136.	4.62	82.	1.66
GHANA	2177.	4.55	141.	-8.42
GUINEA	1230.	9.60	136.	2.95
IVRY CST	1140.	-2.71	38.	-59.15
KENYA	2027.	9.47	148.	0.48
LIBERIA	273.	0.42	81.	5.76
MALAGASY	3201.	11.12	188.	2.81
MALAWI	457.	10.11	23.	31.78
MALI	836.	8.65	127.	11.20
NIGER	313.	3.46	32.	1.63
NIGERIA	9769.	3.71	0.	0.
RHODESIA	477.	15.86	183.	0.05
RWANDA	1105.	10.53	153.	7.66
SENEGAL	1356.	6.74	123.	-7.73
SIE LEON	160.	10.78	54.	1.78
SOMALIA	1085.	9.54	131.	-5.36
S AFRICA	13565.	1.62	648.	-14.73
TANZANIA	2795.	4.14	129.	-9.09
UGANDA	2573.	7.19	174.	-16.47
UP VOLTA	241.	2.65	13.	12.36
ZAIRE	1950.	5.67	193.	-17.58
ZAMBIA	1094.	6.05	157.	-2.67

1990

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1579.	5.62	129.	2.26
CAMEROON	1662.	5.62	173.	5.29
CEN AFRB	1290.	9.22	138.	3.93
CHAD	457.	5.62	22.	7.92
FR CONGO	554.	3.51	89.	-0.11
DAHOMEY	319.	13.74	30.	1.59
ETHIOPIA	524.	-0.03	56.	-1.63
GAMBIA	173.	4.97	85.	-0.07
GHANA	2956.	7.53	181.	13.01
GUINEA	1575.	5.61	157.	2.99
IVRY CST	1140.	1.94	73.	232.97
KENYA	3325.	11.20	179.	5.07
LIBERIA	262.	0.73	81.	-2.22
MALAGASY	5334.	13.51	279.	10.15
MALAWI	675.	6.85	26.	-13.64
MALI	1263.	8.56	142.	-2.42
NIGER	393.	5.12	36.	2.45
NIGERIA	11553.	3.24	0.	0.
RHODESIA	940.	13.68	232.	5.78
RWANDA	1775.	9.35	177.	0.66
SENEGAL	1959.	7.44	156.	10.66
SIE LEON	253.	8.91	59.	1.59
SOMALIA	1665.	8.54	169.	8.19
S AFRICA	15045.	2.26	722.	10.65
TANZANIA	3318.	3.05	130.	4.66
UGANDA	3664.	7.32	264.	27.11
UP VOLTA	309.	6.12	21.	8.99
ZAIRE	3000.	8.49	386.	17.38
ZAMBIA	1545.	7.18	204.	7.25

1995

	CONSUMPTION		INVESTMENT	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	2335.	7.87	146.	2.75
CAMEROON	2543.	9.04	225.	6.05
CEN AFRB	2006.	9.30	172.	4.98
CHAD	699.	8.42	32.	7.71
FR CONGO	654.	3.33	90.	0.43
DAHOMEY	596.	12.94	46.	9.65
ETHIOPIA	525.	0.17	57.	0.72
GAMBIA	232.	6.68	91.	1.24
GHANA	4465.	9.12	229.	4.00
GUINEA	2774.	7.91	186.	3.57
IVRY CST	933.	-11.75	0.	-100.00
KENYA	5795.	12.09	234.	6.11
LIBERIA	294.	8.45	82.	1.14
MALAGASY	8662.	9.99	402.	6.81
MALAWI	1019.	9.94	44.	39.12
MALI	1924.	9.02	192.	11.25
NIGER	523.	6.70	42.	3.49
NIGERIA	13412.	2.90	0.	0.
RHODESIA	1736.	12.15	307.	6.17
RWANDA	2707.	8.49	221.	6.73
SENEGAL	2851.	8.96	193.	2.58
SIE LEON	376.	7.81	64.	1.92
SOMALIA	2453.	7.69	189.	-0.19
S AFRICA	16795.	1.35	657.	-6.75
TANZANIA	3757.	2.15	115.	-5.78
UGANDA	5169.	7.01	278.	-11.61
UP VOLTA	441.	8.03	32.	8.54
ZAIRE	4452.	7.97	335.	-0.66
ZAMBIA	2117.	6.22	214.	-2.65

1985

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2001.	1.37	1108.	7.42
BOLIVIA	65.	2.47	92.	5.55
BRAZIL	5753.	4.59	1508.	2.80
CHILE	1752.	3.98	413.	4.68
COLOMBIA	1807.	6.17	822.	6.50
COS RICA	309.	5.68	98.	1.98
CUBA	638.	2.49	356.	1.13
DOM REPB	1000.	3.13	879.	3.09
ECUADOR	554.	4.70	190.	5.91
EL SALVA	106.	5.98	48.	13.46
GUATEMAL	2896.	8.26	433.	7.29
HAITI	73.	2.99	128.	0.12
HONDURAS	113.	3.68	42.	11.51
JAMAICA	613.	4.65	544.	0.59
MEXICO	6835.	1.98	929.	5.56
NICARAGU	120.	3.06	83.	6.92
PANAMA	0.	-100.00	93.	-6.66
PARAGUAY	154.	7.14	191.	10.62
PERU	712.	9.36	340.	3.46
URUGUAY	534.	2.81	808.	2.58
VENEZUEL	8372.	9.98	563.	8.80

1990

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2162.	1.69	1300.	0.63
BOLIVIA	69.	0.49	112.	3.63
BRAZIL	7273.	4.90	1675.	1.71
CHILE	2096.	3.46	485.	2.65
COLOMBIA	2392.	5.53	1078.	5.05
COS RICA	496.	5.52	115.	4.17
CUBA	730.	2.54	358.	-0.12
DOM REPB	1069.	0.83	951.	1.13
ECUADOR	698.	4.69	246.	4.94
EL SALVA	127.	2.96	69.	4.55
GUATEMAL	4089.	6.53	575.	5.15
HAITI	76.	-0.11	113.	-3.29
HONDURAS	127.	1.70	54.	2.34
JAMAICA	735.	3.10	555.	0.24
MEXICO	9968.	6.83	1174.	4.53
NICARAGU	134.	1.83	102.	2.82
PANAMA	0.	0.	69.	-4.09
PARAGUAY	218.	7.22	252.	3.13
PERU	1126.	9.72	361.	1.99
URUGUAY	608.	2.47	892.	1.62
VENEZUEL	12985.	8.69	755.	3.97

1995

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2369.	1.94	1695.	8.57
BOLIVIA	78.	3.53	132.	3.30
BRAZIL	9260.	4.96	2471.	8.11
CHILE	2458.	3.10	557.	2.83
COLOMBIA	3089.	5.07	1337.	4.01
COS RICA	529.	5.39	143.	4.41
CUBA	845.	3.06	361.	0.31
DOM REPB	1099.	0.38	999.	0.99
ECUADOR	875.	4.56	304.	3.92
EL SALVA	150.	3.67	88.	5.33
GUATEMAL	5444.	5.51	715.	4.03
HAITI	72.	-1.62	91.	-4.90
HONDURAS	144.	2.95	66.	4.64
JAMAICA	827.	1.97	551.	-0.38
MEXICO	11055.	3.81	1451.	4.10
NICARAGU	147.	1.95	118.	3.00
PANAMA	0.	0.	60.	-2.09
PARAGUAY	289.	5.08	348.	8.84
PERU	1798.	9.81	431.	2.65
URUGUAY	681.	2.22	1003.	2.88
VENEZUEL	19152.	7.72	962.	5.22

1985

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	996.	2.41	737.	9.73
EGYPT	7739.	6.16	4716.	3.64
IRAN	31492.	10.70	7306.	7.89
IRAQ	1260.	1.78	1959.	1.02
ISRAEL	0.	0.	555.	30.17
JORDAN	0.	0.	29.	9.90
KUWAIT	245.	-4.58	9.	-2.45
LEBANON	429.	9.64	654.	9.52
LIBYA	1549.	8.51	1834.	3.94
MOROCCO	1217.	3.43	637.	4.25
SAU ARAB	20231.	17.59	16753.	15.91
SUDAN	2792.	19.24	679.	9.72
SYRIA	3969.	5.88	6002.	17.53
TUNESIA	1580.	6.28	1425.	-2.35
YEMEN	481.	7.26	0.	-20.00

1990

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1002.	-1.71	873.	0.36
EGYPT	9934.	4.55	5545.	3.06
IRAN	47664.	7.52	9644.	5.23
IRAQ	1274.	-0.49	1963.	-0.31
ISRAEL	0.	0.	696.	-6.09
JORDAN	0.	0.	33.	1.07
KUWAIT	196.	-4.27	5.	-20.00
LEBANON	527.	5.69	868.	3.83
LIBYA	2364.	9.02	2360.	6.22
MOROCCO	1414.	2.85	739.	2.47
SAU ARAB	42157.	14.80	31274.	12.11
SUDAN	4383.	8.98	996.	7.12
SYRIA	5072.	4.59	13135.	16.66
TUNESIA	2281.	7.25	2503.	16.46
YEMEN	653.	5.74	0.	-20.00

1995

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	558.	-22.10	964.	2.56
EGYPT	11996.	3.46	6262.	2.24
IRAN	64724.	5.60	12123.	3.69
IRAQ	1217.	-1.07	1925.	-0.38
ISRAEL	0.	0.	10.	-84.60
JORDAN	0.	0.	34.	0.58
KUWAIT	154.	-4.76	2.	-20.00
LEBANON	756.	3.12	1007.	2.58
LIBYA	3677.	9.37	3532.	7.06
MOROCCO	1615.	2.60	820.	1.85
SAU ARAB	79820.	12.91	52282.	10.06
SUDAN	6587.	8.19	1375.	6.34
SYRIA	6226.	3.97	22990.	7.01
TUNESIA	3176.	6.61	3298.	6.92
YEMEN	838.	4.76	0.	-20.00

1985

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	539.	10.16	69.	9.69
CAMEROON	1664.	9.47	83.	8.17
CEN AFRB	367.	13.10	64.	11.32
CHAD	174.	9.92	17.	9.51
FR CONGO	73.	3.43	25.	5.69
DAHOMEY	172.	13.40	11.	4.38
ETHIOPIA	256.	1.62	77.	0.21
GAMBIA	73.	12.90	17.	33.42
GHANA	1149.	9.68	97.	6.69
GUINEA	478.	10.05	74.	9.20
IVRY CST	662.	4.17	74.	8.50
KENYA	1136.	13.77	79.	8.58
LIBERIA	84.	1.39	13.	-7.74
MALAGASY	1566.	10.30	135.	16.21
MALAWI	177.	10.41	23.	8.11
MALI	232.	13.70	42.	7.27
NIGER	246.	13.90	17.	7.45
NIGERIA	2935.	5.26	392.	0.44
RHODESIA	1246.	12.47	60.	10.30
RWANDA	453.	10.88	66.	9.06
SENEGAL	419.	13.61	73.	9.36
SIE LEON	389.	9.67	28.	11.09
SOMALIA	326.	9.96	165.	6.39
S AFRICA	6211.	2.63	431.	2.31
TANZANIA	674.	5.24	97.	4.32
UGANDA	822.	9.39	103.	7.45
UP VOLTA	76.	11.24	9.	5.59
ZAIRE	3551.	9.45	135.	5.85
ZAMBIA	756.	8.53	120.	5.54

1990

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	605.	4.72	106.	8.58
CAMEROON	1623.	8.90	123.	8.33
CEN AFRB	680.	12.04	107.	10.76
CHAD	271.	9.07	26.	9.56
FR CONGO	86.	3.68	31.	2.70
DAHOMEY	317.	12.77	23.	15.54
ETHIOPIA	278.	1.59	78.	0.29
GAMBIA	131.	11.95	23.	9.67
GHANA	1938.	13.93	131.	6.33
GUINEA	741.	9.66	111.	8.18
IVRY CST	654.	-3.31	82.	-11.18
KENYA	1945.	11.74	119.	8.69
LIBERIA	96.	1.64	15.	3.55
MALAGASY	1715.	9.78	210.	8.39
MALAWI	256.	9.82	31.	10.55
MALI	432.	12.57	67.	10.30
NIGER	459.	12.90	26.	8.91
NIGERIA	3665.	4.26	435.	0.58
RHODESIA	2195.	11.71	89.	10.29
RWANDA	726.	9.32	91.	8.37
SENEGAL	700.	10.88	106.	7.55
SIE LEON	606.	8.24	44.	8.95
SOMALIA	533.	8.64	233.	6.81
S AFRICA	6875.	1.75	465.	1.26
TANZANIA	820.	3.33	114.	2.79
UGANDA	1262.	5.69	138.	5.25
UP VOLTA	132.	11.76	13.	8.75
ZAIRE	4742.	8.73	176.	5.13
ZAMBIA	1156.	7.74	186.	6.16

1995

	DOMESTIC GOVT SPENDING		DEFENSE SPENDING	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	895.	7.43	156.	7.74
CAMEROON	2513.	9.28	182.	8.52
CEN AFRB	832.	11.38	179.	10.65
CHAD	411.	8.37	41.	8.53
FR CONGO	103.	3.81	36.	3.40
DAHOMEY	569.	12.14	43.	12.58
ETHIOPIA	300.	1.55	79.	0.09
GAMBIA	227.	11.33	44.	12.04
GHANA	3360.	12.09	107.	7.75
GUINEA	1095.	7.80	161.	7.32
IVRY CST	511.	-6.11	46.	-0.58
KENYA	3456.	12.46	192.	8.94
LIBERIA	104.	1.63	16.	-0.11
MALAGASY	2711.	9.48	317.	8.31
MALAWI	448.	9.12	46.	5.95
MALI	775.	12.14	104.	8.90
NIGER	828.	12.22	40.	9.61
NIGERIA	4433.	3.63	424.	1.00
RHODESIA	3765.	11.22	157.	9.31
RWANDA	1102.	8.16	135.	6.95
SENEGAL	1174.	10.47	159.	8.72
SIE LEON	474.	7.37	67.	8.19
SOMALIA	750.	7.90	323.	6.67
S AFRICA	7638.	1.46	499.	1.42
TANZANIA	919.	2.35	129.	2.39
UGANDA	1899.	8.11	183.	6.06
UP VOLTA	225.	10.96	21.	9.51
ZAIRE	7393.	8.17	225.	4.45
ZAMBIA	1652.	7.19	223.	6.22

1985

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	1864.	0.16	1983.	0.19
BOLIVIA	139.	-0.63	128.	-1.05
BRAZIL	3063.	6.15	4268.	5.03
CHILE	881.	1.00	969.	0.90
COLOMBIA	821.	3.13	1044.	3.34
COS RICA	212.	1.41	158.	1.58
CUBA	701.	0.24	391.	0.54
DOM REPB	1846.	1.29	1060.	0.73
ECUADOR	421.	2.67	394.	2.91
EL SALVA	199.	3.57	248.	3.97
GUATEMAL	399.	3.19	340.	2.78
HAITI	71.	2.28	78.	0.84
HONDURAS	285.	1.48	269.	1.41
JAMAICA	778.	1.02	689.	1.10
MEXICO	19078.	5.35	33398.	5.44
NICARAGU	230.	0.82	200.	0.92
PANAMA	96.	-11.81	0.	0.
PARAGUAY	143.	8.83	174.	9.14
PERU	651.	-0.85	638.	0.81
URUGUAY	223.	1.06	214.	1.05
VENEZUEL	1633.	1.39	3231.	0.97

1990

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2140.	4.82	2241.	4.22
BOLIVIA	149.	2.46	144.	4.00
BRAZIL	4418.	8.20	5736.	6.58
CHILE	939.	1.44	1026.	1.28
COLOMBIA	988.	4.06	1258.	3.96
COS RICA	229.	1.59	171.	1.74
CUBA	717.	0.58	409.	1.08
DOM REPB	1977.	1.24	1104.	0.66
ECUADOR	487.	3.15	352.	3.00
EL SALVA	269.	8.58	323.	6.78
GUATEMAL	468.	3.20	391.	2.83
HAITI	69.	-1.64	72.	-2.83
HONDURAS	344.	4.95	324.	4.90
JAMAICA	807.	0.61	633.	0.58
MEXICO	24054.	4.52	42086.	4.49
NICARAGU	246.	1.58	215.	1.77
PANAMA	55.	-7.53	0.	0.
PARAGUAY	186.	3.03	227.	2.87
PERU	891.	9.61	922.	2.52
URUGUAY	233.	0.77	224.	0.78
VENEZUEL	1901.	3.98	3663.	3.40

1995

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2367.	0.03	2454.	0.08
BOLIVIA	162.	1.39	164.	2.14
BRAZIL	6389.	7.51	7801.	6.32
CHILE	998.	1.12	1084.	1.02
COLOMBIA	1174.	3.27	1499.	3.38
COS RICA	249.	1.80	188.	1.93
CUBA	736.	0.53	430.	1.00
DOM REPB	2030.	0.25	1097.	-0.46
ECUADOR	572.	3.37	409.	3.07
EL SALVA	314.	-0.33	386.	1.56
GUATEMAL	545.	3.06	448.	2.77
HAITI	62.	-2.19	61.	-3.84
HONDURAS	394.	1.65	370.	1.59
JAMAICA	828.	0.41	647.	0.33
MEXICO	29759.	4.16	51955.	4.09
NICARAGU	258.	0.63	227.	0.70
PANAMA	43.	-5.04	0.	0.
PARAGUAY	249.	8.25	305.	8.54
PERU	1247.	6.32	1034.	2.32
URUGUAY	245.	1.29	236.	1.27
VENEZUEL	2214.	2.68	4166.	2.24

1985

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1772.	1.81	1652.	-2.10
EGYPT	3578.	4.71	2294.	4.63
IRAN	17985.	9.01	46647.	8.94
IRAQ	413.	3.42	2248.	0.30
ISRAEL	474.	25.09	276.	26.20
JORDAN	85.	2.57	0.	0.
KUWAIT	247.	-3.01	599.	-5.27
LEBANON	762.	6.17	212.	5.05
LIBYA	1324.	3.77	2550.	2.99
MORROCCO	1154.	2.45	849.	2.12
SAU ARAB	18204.	16.59	24976.	15.42
SUDAN	1569.	8.77	1287.	8.95
SYRIA	1577.	13.15	10144.	20.77
TUNESIA	2002.	1.38	614.	1.51
YEMEN	366.	1.57	0.	0.

1990

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	2092.	4.21	1966.	6.74
EGYPT	4192.	2.42	2712.	2.76
IRAN	25783.	6.61	58149.	6.57
IRAQ	484.	3.17	2194.	-0.83
ISRAEL	591.	-9.04	364.	-7.14
JORDAN	88.	0.32	0.	0.
KUWAIT	153.	-15.10	279.	-23.77
LEBANON	928.	2.76	238.	0.64
LIBYA	1690.	8.06	3133.	7.01
MORROCCO	1289.	2.08	935.	1.81
SAU ARAB	36393.	13.86	48266.	13.34
SUDAN	2402.	8.57	1974.	6.75
SYRIA	3119.	15.54	25721.	20.30
TUNESIA	1621.	11.68	1366.	12.42
YEMEN	397.	1.75	0.	0.

1995

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	2243.	-0.63	1536.	-14.29
EGYPT	4730.	2.44	3106.	2.73
IRAN	33725.	4.86	75960.	4.83
IRAQ	566.	3.20	2097.	-0.93
ISRAEL	59.	-58.02	93.	-30.16
JORDAN	90.	0.18	0.	0.
KUWAIT	57.	-23.03	0.	0.
LEBANON	1036.	1.94	235.	-0.77
LIBYA	2516.	6.98	4481.	6.35
MORROCCO	1409.	1.65	1009.	1.41
SAU ARAB	66038.	12.03	66480.	11.77
SUDAN	3506.	7.49	2906.	7.62
SYRIA	5005.	5.65	44843.	6.08
TUNESIA	2080.	0.89	1774.	0.93
YEMEN	435.	1.85	0.	0.

1985

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	148.	8.90	151.	8.42
CAMEROON	264.	4.44	249.	3.96
CEN AFRB	127.	8.44	116.	8.94
CHAD	85.	4.14	63.	4.20
PR CONGO	95.	2.11	49.	4.54
DAHOMEY	47.	4.69	54.	5.61
ETHIOPIA	269.	2.43	165.	2.28
GAMBIA	33.	5.97	13.	15.27
GHANA	492.	7.76	419.	7.86
GUINEA	235.	7.57	207.	7.52
IVRY CST	512.	-2.76	644.	-3.69
KENYA	542.	3.92	294.	3.45
LIBERIA	107.	0.61	71.	1.49
MALAGASY	331.	5.92	248.	4.87
MALAWI	131.	6.99	83.	6.97
MALI	131.	8.49	135.	8.96
NIGER	123.	9.11	58.	9.19
NIGERIA	1326.	3.13	1272.	3.05
RHODESIA	355.	3.99	354.	3.39
RWANDA	175.	9.72	195.	9.15
SENEGAL	250.	4.21	260.	4.51
SIE LEON	118.	3.92	105.	2.85
SOMALIA	176.	6.86	156.	7.77
S AFRICA	3799.	1.17	2355.	1.93
TANZANIA	717.	3.27	655.	2.76
UGANDA	369.	5.94	503.	5.07
UP VOLTA	119.	3.69	75.	4.46
ZAIRE	681.	4.90	1216.	5.43
ZAMBIA	832.	5.71	1851.	6.33

1990

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	221.	8.90	222.	7.68
CAMEROON	338.	5.46	311.	4.93
CEN AFRB	192.	8.74	177.	8.57
CHAD	103.	4.10	77.	4.20
PR CONGO	106.	2.02	61.	3.94
DAHOMEY	109.	4.56	76.	5.43
ETHIOPIA	297.	2.71	185.	2.24
GAMBIA	41.	5.46	20.	10.39
GHANA	599.	4.75	510.	4.72
GUINEA	293.	7.21	294.	7.02
IVRY CST	517.	2.15	635.	2.23
KENYA	673.	4.74	353.	3.95
LIBERIA	109.	0.36	76.	1.14
MALAGASY	428.	5.45	319.	5.40
MALAWI	176.	5.30	111.	5.29
MALI	191.	7.78	260.	7.50
NIGER	195.	9.91	94.	10.35
NIGERIA	1534.	2.87	1472.	2.78
RHODESIA	450.	5.37	434.	4.65
RWANDA	265.	8.23	290.	7.79
SENEGAL	363.	5.90	343.	6.16
SIE LEON	134.	3.34	122.	3.16
SOMALIA	253.	7.48	236.	7.91
S AFRICA	4180.	2.24	3205.	2.47
TANZANIA	935.	2.94	746.	2.51
UGANDA	522.	7.44	673.	6.37
UP VOLTA	142.	3.67	93.	4.29
ZAIRE	943.	7.32	1683.	7.05
ZAMBIA	1157.	6.91	2649.	7.45

1995

	IMPORTS		EXPORTS	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	328.	7.42	315.	7.09
CAMEROON	457.	6.44	406.	5.91
CEN AFRB	295.	9.06	271.	8.99
CHAD	126.	4.08	94.	4.16
PR CONGO	117.	2.13	73.	3.77
DAHOMEY	137.	4.94	92.	5.66
ETHIOPIA	339.	2.61	206.	2.20
GAMBIA	57.	7.12	35.	10.83
GHANA	787.	6.34	668.	6.22
G INIA	411.	6.92	408.	6.67
IVRY CST	373.	-12.48	402.	-17.00
KENYA	971.	5.71	436.	4.67
LIBERIA	112.	0.56	81.	1.41
MALAGASY	565.	5.82	420.	5.78
MALAWI	246.	8.28	155.	8.27
MALI	290.	9.10	298.	8.62
NIGER	316.	10.27	155.	10.80
NIGERIA	1757.	2.60	1680.	2.62
RHODESIA	603.	6.47	562.	5.74
RWANDA	391.	7.94	418.	7.44
SENEGAL	492.	6.60	464.	6.63
SIE LEON	164.	3.65	143.	3.47
SOMALIA	351.	6.61	325.	6.92
S AFRICA	4464.	0.97	3546.	1.48
TANZANIA	948.	2.78	829.	1.93
UGANDA	722.	6.13	644.	5.30
UP VOLTA	170.	3.67	114.	4.18
ZAIRE	1317.	6.94	2322.	6.55
ZAMBIA	1561.	5.84	3646.	6.16

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2.475	6.21	0.600	0.
BOLIVIA	0.276	2.69	1.380	-1.43
BRAZIL	4.401	1.89	0.800	0.
CHILE	1.193	3.43	0.600	0.
COLOMBIA	0.577	2.09	6.600	0.
COS RICA	0.273	3.20	0.	0.
CUBA	1.157	2.00	0.	0.
DOM REPB	0.614	2.90	2.000	0.
ECUADOR	0.289	3.55	1.900	0.
EL SALVA	0.285	7.58	0.600	0.
GUATEMAL	0.799	2.90	1.200	0.
HAITI	0.574	2.10	0.	0.
HONDURAS	0.330	6.64	0.400	0.
JAMAICA	0.271	2.40	0.	0.
MEXICO	1.746	3.50	0.100	0.
NICARAGU	0.253	5.72	1.000	0.
PANAMA	0.022	3.00	0.980	-2.00
PARAGUAY	0.396	3.40	1.100	0.
PERU	1.098	2.59	0.760	-5.30
URUGUAY	0.317	16.57	2.100	0.
VENEZUEL	1.193	8.17	0.800	0.

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	2.362	0.86	0.600	0.
BOLIVIA	0.311	2.23	1.300	0.
BRAZIL	4.749	1.31	0.800	0.
CHILE	1.356	2.20	0.800	0.
COLOMBIA	0.645	2.32	6.600	0.
COS RICA	0.319	3.20	0.	0.
CUBA	1.254	1.45	0.	0.
DOM REPB	0.688	1.24	2.000	0.
ECUADOR	0.344	3.51	1.900	0.
EL SALVA	0.370	4.29	0.600	0.
GUATEMAL	0.921	2.90	1.200	0.
HAITI	0.635	1.91	0.	0.
HONDURAS	0.415	3.76	0.400	0.
JAMAICA	0.305	2.40	0.	0.
MEXICO	2.048	3.03	0.100	0.
NICARAGU	0.307	3.07	1.000	0.
PANAMA	0.025	3.00	0.900	0.
PARAGUAY	0.468	3.40	1.100	0.
PERU	1.220	1.92	0.600	0.
URUGUAY	0.368	1.20	2.100	0.
VENEZUEL	1.532	3.93	0.800	0.

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	3.395	1.50	0.600	0.
BOLIVIA	0.347	2.16	1.300	0.
BRAZIL	5.266	2.61	0.800	0.
CHILE	1.519	2.29	0.800	0.
COLOMBIA	0.717	2.02	6.600	0.
COS RICA	0.374	3.20	0.	0.
CUBA	1.352	1.54	0.	0.
DOM REPB	0.721	0.70	2.000	0.
ECUADOR	0.401	2.92	1.900	0.
EL SALVA	0.454	4.08	0.600	0.
GUATEMAL	1.063	2.90	1.200	0.
HAITI	0.690	1.53	0.	0.
HONDURAS	0.500	3.73	0.400	0.
JAMAICA	0.344	2.40	0.	0.
MEXICO	2.342	2.96	0.100	0.
NICARAGU	0.357	2.96	1.000	0.
PANAMA	0.037	9.99	0.900	0.
PARAGUAY	0.554	3.40	1.100	0.
PERU	1.357	2.23	0.600	0.
URUGUAY	0.391	1.20	2.100	0.
VENEZUEL	1.931	4.95	0.800	0.

1985

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.767	-0.13	0.	0.
EGYPT	4.923	2.50	50.000	0.
IRAN	1.997	-2.41	2.600	0.
IRAQ	1.082	2.12	0.	0.
ISRAEL	0.445	2.90	7.500	0.
JORDAN	0.380	3.40	0.	0.
KUWAIT	0.028	9.80	0.	0.
LEBANON	0.217	7.51	0.	0.
LIBYA	0.042	24.24	0.	0.
MOROCCO	0.506	-0.96	0.800	0.
SAU ARAB	0.117	2.80	0.500	0.
SUDAN	0.234	2.70	0.	0.
SYRIA	0.450	-12.00	0.	0.
TUNESIA	0.329	11.06	3.200	0.
YEMEN	0.089	2.70	0.	.

1990

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.787	0.91	0.	0.
EGYPT	5.457	2.50	50.000	0.
IRAN	1.759	-2.55	2.600	0.
IRAQ	1.207	2.22	0.	0.
ISRAEL	0.514	2.90	7.500	0.
JORDAN	0.449	3.40	0.	0.
KUWAIT	0.045	9.80	0.	0.
LEBANON	0.309	7.63	0.	0.
LIBYA	0.105	1.91	0.	0.
MOROCCO	0.487	-0.68	0.800	0.
SAU ARAB	0.134	2.80	0.500	0.
SUDAN	0.267	2.70	0.	0.
SYRIA	0.123	3.40	0.	0.
TUNESIA	0.355	-1.98	3.200	0.
YEMEN	0.097	2.70	0.	0.

1995

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.814	0.59	0.	0.
EGYPT	6.174	2.50	50.000	0.
IRAN	1.543	-2.59	2.600	0.
IRAQ	1.343	2.10	0.	0.
ISRAEL	0.593	2.90	7.500	0.
JORDAN	0.531	3.40	0.	0.
KUWAIT	0.072	9.80	0.	0.
LEBANON	0.430	6.16	0.	0.
LIBYA	0.047	-1.33	0.	0.
MOROCCO	0.472	-0.60	0.800	0.
SAU ARAB	0.154	2.80	0.500	0.
SUDAN	0.306	2.70	0.	0.
SYRIA	0.145	3.40	0.	0.
TUNESIA	0.380	5.84	3.200	0.
YEMEN	0.111	2.70	0.	0.

1985

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.454	2.00	0.	0.
CAMEROON	0.724	8.3?	0.	0.
CEN AFR	0.233	2.50	0.	0.
CHAD	0.494	2.00	0.	0.
PR CONGO	0.125	2.20	0.	0.
DAHOMEY	0.403	2.70	22.200	0.
ETHIOPIA	3.316	1.90	0.	0.
GAMBIA	0.055	2.10	0.	0.
GHANA	0.840	1.67	0.	0.
GUINEA	0.549	2.10	0.	0.
IVRY CST	0.614	2.40	0.	0.
KENYA	0.449	4.94	0.500	0.
LIBERIA	0.159	1.90	0.	0.
MALAGASY	0.414	3.35	0.	0.
MALAWI	0.637	2.50	0.	0.
MALI	0.713	2.00	0.	0.
NIGER	0.544	2.60	0.	0.
NIGERIA	7.980	2.50	0.	0.
RHODESIA	0.594	8.73	0.	0.
RWANDA	0.503	3.20	0.	0.
SENEGAL	0.557	2.40	0.	0.
SIE LEON	0.325	1.50	0.	0.
SOMALIA	0.334	2.30	22.200	0.
S AFRICA	0.463	-2.78	0.	0.
TANZANIA	0.724	4.83	0.	0.
UGANDA	0.481	5.00	0.	0.
UP VOLTA	0.773	2.10	1.800	0.
ZAIRE	3.361	5.05	0.	0.
ZAMBIA	0.603	2.60		

1990

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.505	2.00	0.	0.
CAMEROON	0.379	2.10	0.	0.
CEN AFR	0.262	2.50	0.	0.
CHAD	0.550	2.00	0.	0.
FR CONGO	0.136	2.20	0.	0.
DAHOMEY	0.460	2.70	22.200	0.
ETHIOPIA	3.643	1.90	0.	0.
GAMBIA	0.061	2.10	0.	0.
GHANA	0.969	1.75	0.	0.
GUINEA	0.615	2.30	0.	0.
IVRY CST	0.691	2.40	0.	0.
KENYA	0.485	-0.64	0.500	0.
LIBERIA	0.175	1.90	0.	0.
MALAGASY	0.418	-2.39	0.	0.
MALAWI	0.721	2.50	0.	0.
MALI	0.788	2.00	0.	0.
NIGER	0.668	2.60	0.	0.
NIGERIA	9.029	2.50	0.	0.
RHODESIA	0.765	3.31	0.	0.
RWANDA	0.695	3.20	0.	0.
SENEGAL	0.627	2.40	0.	0.
SIE LEON	0.353	1.50	22.200	0.
SOMALIA	0.441	2.30	0.	0.
S AFRICA	0.447	0.34	0.	0.
TANZANIA	0.905	4.32	0.	0.
UGANDA	0.546	3.32	0.	0.
UP VOLTA	0.519	2.10	1.800	0.
ZAIRE	4.111	3.58	0.	0.
ZAMBIA	0.685	2.60		

1995

	MILITARY MANPOWER(MILLIONS)		MILITARY AID(MILLIONS US $)	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.558	2.00	0.	0.
CAMEROON	0.975	2.10	0.	0.
CEN AFR	0.297	2.50	0.	0.
CHAD	0.607	2.00	0.	0.
PR CONGO	0.155	2.20	0.	0.
DAHOMEY	0.526	2.70	22.200	0.
ETHIOPIA	4.002	1.90	0.	0.
GAMBIA	0.067	2.10	0.	0.
GHANA	0.952	-1.85	0.	0.
GUINEA	0.685	2.30	0.	0.
IVRY CST	0.778	2.40	0.	0.
KENYA	0.366	-9.57	0.	0.
LIBERIA	0.192	1.90	0.500	0.
MALAGASY	0.257	-15.76	0.	0.
MALAWI	0.916	2.50	0.	0.
MALI	0.876	2.00	0.	0.
NIGER	0.760	2.60	0.	0.
NIGERIA	10.215	2.50	0.	0.
RHODESIA	0.812	-0.21	0.	0.
RWANDA	0.813	3.20	0.	0.
SENEGAL	0.706	2.40	0.	0.
SIE LEON	0.377	1.50	22.200	0.
SOMALIA	0.494	2.30	0.	0.
S AFRICA	0.429	-1.25	0.	0.
TANZANIA	1.095	3.69	0.	0.
UGANDA	0.612	-0.66	0.	0.
UP VOLTA	0.904	2.10	0.	0.
ZAIRE	4.754	2.62	1.800	0.
ZAMBIA	0.779	2.60	0.	0.

1985

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.032	5.06	0.600	0.06
BOLIVIA	0.	0.	0.658	20.08
BRAZIL	0.380	-17.57	0.475	-0.91
CHILE	0.	0.	0.498	0.
COLOMBIA	0.459	-0.25	0.594	-0.05
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.859	0.
DOM REFB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.497	0.
EL SALVA	0.	0.	0.510	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.663	0.
HONDURAS	0.	0.	0.659	0.
JAMAICA	0.	0.	0.520	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.518	0.
PANAMA	0.	0.	0.653	0.
PARAGUAY	0.	0.	0.658	0.
PERU	0.726	-1.64	0.667	-0.40
URUGUAY	0.528	-5.93	0.755	-0.14
VENEZUEL	0.	0.	0.666	0.

1990

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.015	-25.07	0.596	-0.19
BOLIVIA	0.	0.	0.514	0.
BRAZIL	0.023	-23.87	0.461	-0.35
CHILE	0.	0.	0.498	0.
COLOMBIA	0.321	-10.68	0.472	-1.82
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.953	17.83
DOM REFB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.497	0.
EL SALVA	0.	0.	0.510	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.519	-21.76
HONDURAS	0.	0.	0.659	0.
JAMAICA	0.	0.	0.520	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.518	0.
PANAMA	0.	0.	0.653	28.33
PARAGUAY	0.	0.	0.658	0.
PERU	0.754	1.71	0.693	0.42
URUGUAY	0.509	-0.62	0.781	-0.09
VENEZUEL	0.	0.	0.666	0.

1995

	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.010	5.77	0.595	0.02
BOLIVIA	0.	0.	0.514	0.
BRAZIL	0.007	-20.88	0.458	-0.09
CHILE	0.	0.	0.498	0.
COLOMBIA	0.211	-6.68	0.447	-0.76
COS RICA	0.	0.	0.504	0.
CUBA	0.	0.	0.859	-15.13
DOM REFB	0.	0.	0.574	0.
ECUADOR	0.	0.	0.497	0.
EL SALVA	0.	0.	0.510	0.
GUATEMAL	0.	0.	0.564	0.
HAITI	0.	0.	0.663	0.
HONDURAS	0.	0.	0.659	0.
JAMAICA	0.	0.	0.520	0.
MEXICO	0.	0.	0.593	0.
NICARAGU	0.	0.	0.518	-21.77
PANAMA	0.	0.	0.653	28.33
PARAGUAY	0.	0.	0.658	0.
PERU	0.780	0.69	0.701	0.18
URUGUAY	0.488	-1.00	0.776	-0.14
VENEZUEL	0.	0.	0.666	0.

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.814	4.85	0.934	0.72
EGYPT	0.396	3.38	0.660	0.27
IRAN	0.	0.	0.836	0.
IRAQ	0.336	14.48	0.849	0.89
ISRAEL	0.037	-10.51	0.553	-0.14
JORDAN	1.000	0.00	0.996	0.09
KUWAIT	0.308	33.70	0.891	13.51
LEBANON	0.124	0.97	0.731	0.03
LIBYA	0.035	7.14	0.747	0.05
MOROCCO	0.946	0.98	1.000	0.10
SAU ARAB	0.014	-12.46	0.837	-0.04
SUDAN	0.892	0.31	0.901	0.05
SYRIA	0.049	0.24	0.798	0.00
TUNESIA	0.042	10.83	0.561	-7.50
YEMEN	1.000	-0.00	1.000	8.64

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.915	1.31	0.951	0.22
EGYPT	0.508	5.93	0.880	0.57
IRAN	0.	0.	0.836	0.
IRAQ	0.690	13.42	0.910	1.58
ISRAEL	0.051	22.45	0.555	0.30
JORDAN	1.000	0.00	0.904	-9.27
KUWAIT	0.988	7.71	0.919	-8.00
LEBANON	0.161	8.11	0.738	0.29
LIBYA	0.039	1.85	0.749	0.02
MOROCCO	0.974	0.44	1.000	0.
SAU ARAB	0.014	1.46	0.837	0.00
SUDAN	0.902	0.20	0.903	0.03
SYRIA	0.048	-0.81	0.798	-0.01
TUNESIA	0.056	-4.88	0.655	-0.05
YEMEN	1.000	0.	1.000	8.64

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.975	1.08	0.962	0.19
EGYPT	0.668	5.18	0.908	0.64
IRAN	0.	0.	0.836	0.
IRAQ	0.925	2.81	0.953	0.47
ISRAEL	0.368	71.04	0.519	-11.19
JORDAN	1.000	-0.00	0.996	10.22
KUWAIT	1.000	0.00	1.000	8.64
LEBANON	0.256	10.75	0.755	0.59
LIBYA	0.041	2.55	0.749	0.02
MOROCCO	0.989	0.21	1.000	0.
SAU ARAB	0.015	2.43	0.837	0.01
SUDAN	0.913	0.26	0.905	0.05
SYRIA	0.056	6.52	0.800	0.08
TUNESIA	0.068	11.13	0.657	0.18
YEMEN	1.000	0.	0.920	-7.95

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.521	0.
CAMEROON	0.124	-3.32	0.551	-0.18
CEN AFRB	0.	0.	0.666	0.
CHAD	0.	0.	0.521	0.
FR CONGO	0.	0.	0.809	-15.14
DAHOMEY	0.	0.	0.522	0.
ETHIOPIA	0.102	-0.49	0.636	29.27
GAMBIA	0.597	-2.10	0.692	-0.16
GHANA	0.091	-2.94	0.874	-0.07
GUINEA	0.	0.	0.453	0.
IVRY CST	0.	0.	0.666	0.
KENYA	0.044	-4.17	0.534	-21.36
LIBERIA	0.401	-1.02	0.750	23.62
MALAGASY	0.	0.	0.593	0.
MALAWI	0.	0.	0.521	0.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.665	0.
NIGERIA	0.029	-2.25	0.924	-0.02
RHODESIA	0.	0.	0.522	0.
RWANDA	0.158	-4.42	0.702	-0.24
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.278	-3.31	0.727	-0.30
SOMALIA	0.157	-1.40	0.996	-0.15
S AFRICA	0.	0.	0.666	0.
TANZANIA	0.078	-2.21	0.668	-0.07
UGANDA	0.687	-3.04	0.970	-0.06
UP VOLTA	0.	0.	0.520	0.
ZAIRE	0.051	-3.90	0.523	-0.09
ZAMBIA	0.129	-3.05	0.551	-0.17

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.521	-21.70
CAMEROON	0.089	-3.70	0.686	26.44
CEN AFRB	0.	0.	0.522	-21.66
CHAD	0.	0.	0.521	0.
FR CONGO	0.	0.	0.809	0.
DAHOMEY	0.	0.	0.522	0.
ETHIOPIA	0.093	-0.87	0.634	-0.03
GAMBIA	.475	-2.73	0.774	-0.39
GHANA	0.062	-4.34	0.567	-0.07
GUINEA	0.	0.	0.953	17.84
IVRY CST	0.	0.	0.521	0.
KENYA	0.054	-4.95	0.671	-0.13
LIBERIA	0.366	-0.95	0.599	-19.53
MALAGASY	0.	0.	0.593	0.
MALAWI	0.	0.	0.521	0.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.665	0.
NIGERIA	0.024	-1.97	0.923	-0.01
RHODESIA	0.	0.	0.522	0.
RWANDA	0.105	-3.85	0.669	-0.14
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.204	-2.55	0.711	-0.19
SOMALIA	0.132	-3.21	0.839	-14.76
S AFRICA	0.	0.	0.666	0.
TANZANIA	0.064	-1.64	0.664	-0.04
UGANDA	0.662	-3.12	0.964	-0.05
UP VOLTA	0.	0.	0.520	0.
ZAIRE	0.034	-3.91	0.516	-21.87
ZAMBIA	0.092	-3.02	0.687	26.42

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	ALIGN THETA TRADE		ALIGN THETA VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.	0.	0.665	0.
CAMEROON	0.108	-3.54	0.690	26.21
CEN AFRB	0.	0.	0.522	0.
CHAD	0.	0.	0.665	27.67
FR CONGO	0.	0.	0.809	-15.14
DAHOMEY	0.	0.	0.522	0.
ETHIOPIA	0.097	-0.60	0.491	-22.73
GAMBIA	0.541	-2.11	0.789	21.86
GHANA	0.077	-3.93	0.871	-0.38
GUINEA	0.	0.	0.808	-15.14
IVRY CST	0.	0.	0.666	0.
KENYA	0.076	-4.68	0.674	27.02
LIBERIA	0.393	-0.90	0.662	-19.41
MALAGASY	0.	0.	0.593	0.
MALAWI	0.	0.	0.521	0.
MALI	0.	0.	0.929	0.
NIGER	0.	0.	0.665	0.
NIGERIA	0.026	-2.08	0.923	-0.01
RHODESIA	0.	0.	0.522	0.
RWANDA	0.138	-3.94	0.551	-20.90
SENEGAL	0.	0.	0.662	0.
SIE LEON	0.237	-3.02	0.718	-0.23
SOMALIA	0.156	-3.55	0.989	-0.13
S AFRICA	0.	0.	0.666	0.
TANZANIA	0.070	-2.61	0.666	-0.05
UGANDA	0.073	-3.69	0.967	-0.07
UP VOLTA	0.	0.	0.520	0.
ZAIRE	0.041	-4.25	0.518	-0.08
ZAMBIA	0.108	-3.42	0.546	-20.90

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.699	0.04	0.180	100.00
BOLIVIA	0.391	0.55	1.309	0.15
BRAZIL	0.798	0.25	0.	0.
CHILE	0.507	1.23	0.	0.
COLOMBIA	0.959	0.13	0.	0.
COS RICA	0.572	1.70	1.239	4.39
CUBA	0.355	-0.55	0.	0.
DOM REPB	0.337	0.13	0.308	-21.10
ECUADOR	0.367	1.02	0.229	-13.74
EL SALVA	0.359	-0.26	0.	0.
GUATEMAL	1.000	0.32	0.530	2.09
HAITI	0.696	0.42	0.343	6.92
HONDURAS	0.234	-0.12	0.	0.
JAMAICA	0.228	1.29	0.	0.
MEXICO	0.101	-0.60	0.343	4.30
NICARAGU	0.330	0.43	1.414	0.
PANAMA	0.386	7.90	0.	0.
PARAGUAY	0.494	-2.69	0.	0.
PERU	0.606	0.73	0.	0.
URUGUAY	0.965	0.94	0.	0.
VENEZUEL	0.320	1.79	0.	0.

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.755	2.44	0.	-100.00
BOLIVIA	0.387	-0.56	1.102	-5.12
BRAZIL	0.814	0.42	0.	0.
CHILE	0.549	1.74	0.	0.
COLOMBIA	0.913	-1.18	0.	0.
COS RICA	0.625	1.83	0.	0.
CUBA	0.363	1.07	0.644	-14.82
DOM REPB	0.339	0.14	0.	0.
ECUADOR	0.384	0.88	0.	-100.00
EL SALVA	0.337	-2.13	0.	-100.00
GUATEMAL	1.000	0.	0.	0.
HAITI	0.734	1.40	0.913	11.65
HONDURAS	0.223	-1.37	0.145	-32.95
JAMAICA	0.239	0.87	0.	0.
MEXICO	0.098	-0.52	0.	0.
NICARAGU	0.338	0.49	0.277	-7.89
PANAMA	0.543	6.09	1.414	0.
PARAGUAY	0.401	-0.52	0.	0.
PERU	0.653	1.70	0.	0.
URUGUAY	1.002	0.62	0.	0.
VENEZUEL	0.375	3.66	0.	0.

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.790	0.03	0.310	100.00
BOLIVIA	0.382	-0.15	0.950	-1.67
BRAZIL	0.824	0.15	0.	0.
CHILE	0.585	1.03	0.	0.
COLOMBIA	0.889	-0.33	0.	0.
COS RICA	0.690	2.07	0.	0.
CUBA	0.377	0.64	0.441	-16.07
DOM REPB	0.344	0.35	0.193	669.57
ECUADOR	0.399	0.69	0.	0.
EL SALVA	0.335	1.25	0.040	100.00
GUATEMAL	1.000	-0.00	0.	0.
HAITI	0.796	1.82	1.291	5.16
HONDURAS	0.217	-0.12	0.153	34.61
JAMAICA	0.249	0.70	0.	0.
MEXICO	0.096	-0.47	0.	0.
NICARAGU	0.345	0.38	0.365	11.32
PANAMA	0.699	4.66	1.414	0.
PARAGUAY	0.429	-2.07	0.	0.
PERU	0.695	1.05	0.	0.
URUGUAY	1.046	1.02	0.	0.
VENEZUEL	0.422	1.81	0.	0.

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.120	7.53	1.007	-0.26
EGYPT	0.341	3.93	0.905	-0.54
IRAN	0.349	7.56	0.966	-1.01
IRAQ	0.177	-1.73	0.979	0.09
ISRAEL	0.246	1.94	0.991	0.43
JORDAN	0.093	26.94	1.042	1.47
KUWAIT	0.039	-4.13	1.032	4.18
LEBANON	0.144	6.17	0.952	-0.32
LIBYA	0.200	1.11	0.928	-0.21
MORROCCO	0.210	7.98	1.019	-0.55
SAU ARAB	0.458	15.10	0.937	-2.29
SUDAN	0.103	2.98	0.967	-0.10
SYRIA	0.235	-1.54	0.962	-0.45
TUNESIA	0.286	-9.90	0.912	-1.99
YEMEN	0.071	-2.41	1.035	2.83

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.173	7.03	0.988	-0.47
EGYPT	0.407	3.62	0.879	-0.63
IRAN	0.360	0.07	0.951	-0.08
IRAQ	0.176	2.75	0.982	-0.08
ISRAEL	5.248	-2.17	0.993	0.12
JORDAN	0.165	12.68	0.987	-3.84
KUWAIT	0.193	88.53	1.006	-3.23
LEBANON	0.168	1.55	0.940	-0.16
LIBYA	0.220	4.21	0.920	-0.29
MORROCCO	0.308	8.11	0.982	-0.87
SAU ARAB	0.523	9.65	0.887	-0.36
SUDAN	0.120	3.44	0.960	-0.16
SYRIA	0.230	0.28	0.959	-0.02
TUNESIA	0.320	6.75	0.989	-0.25
YEMEN	0.114	-2.58	1.020	2.64

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	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.302	16.56	0.944	-1.34
EGYPT	0.506	5.09	0.843	-1.04
IRAN	0.360	-0.00	0.950	-0.01
IRAQ	0.257	9.46	0.957	-0.80
ISRAEL	0.349	25.88	0.920	-4.96
JORDAN	0.262	-2.04	0.965	2.32
KUWAIT	0.697	61.85	0.852	-3.73
LEBANON	0.176	0.59	0.936	-0.06
LIBYA	0.275	3.68	0.903	-0.47
MORROCCO	0.462	8.71	0.925	-1.46
SAU ARAB	0.537	0.48	0.879	-0.14
SUDAN	0.146	4.17	0.950	-0.23
SYRIA	0.232	-0.19	0.958	-0.00
TUNESIA	0.356	-1.09	0.952	-0.06
YEMEN	0.205	23.87	0.964	-3.37

	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.143	4.00	0.	0.
CAMEROON	0.172	6.55	0.	0.
CEN AFRB	0.181	4.57	0.	0.
CHAD	0.067	8.22	0.690	-59.67
PR CONGO	0.117	1.96	0.	0.
DAHOMEY	0.344	13.20	0.381	-33.27
ETHIOPIA	0.037	-1.96	1.196	-0.66
GAMBIA	0.104	0.72	0.	0.
GHANA	0.155	4.74	0.	0.
GUINEA	0.165	5.00	0.	0.
IVRY CST	0.084	-1.51	0.380	100.00
KENYA	0.116	9.66	0.	0.
LIBERIA	0.059	0.61	0.560	-11.50
MALAGASY	0.357	9.66	0.	0.
MALAWI	0.064	7.90	0.175	-42.83
MALI	0.113	4.71	0.	0.
NIGER	0.062	0.77	0.446	-12.30
NIGERIA	0.259	2.06	0.011	-73.58
RHODESIA	0.094	12.19	0.	0.
RWANDA	0.168	4.60	0.	0.
SENEGAL	0.132	4.58	0.	0.
SIE LEON	0.071	9.79	0.	0.
SOMALIA	0.155	3.62	0.	0.
S AFRICA	0.214	0.16	0.	0.
TANZANIA	0.131	1.80	0.	0.
UGANDA	0.177	2.72	0.	0.
UP VOLTA	0.024	3.25	1.160	-3.30
ZAIRE	0.130	4.82	0.	-100.00
ZAMBIA	0.052	2.47	0.	0.

	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.219	3.52	0.	0.
CAMEROON	0.236	6.44	0.	0.
CEN AFRB	0.225	4.37	0.	0.
CHAD	0.10	8.13	0.	0.
PR CONGO	0.127	1.58	0.	0.
DAHOMEY	0.085	13.45	0.	0.
ETHIOPIA	0.033	-2.74	1.183	-0.07
GAMBIA	0.202	1.00	0.	0.
GHANA	0.213	7.25	0.	0.
GUINEA	0.205	4.17	0.	0.
IVRY CST	0.063	0.47	0.785	-12.46
KENYA	0.227	11.15	0.	0.
LIBERIA	0.060	-0.22	0.433	2.75
MALAGASY	0.553	8.72	0.	0.
MALAWI	0.094	4.47	0.	0.
MALI	0.163	4.05	0.	0.
NIGER	0.067	2.07	0.	-100.00
NIGERIA	0.293	1.58	0.	0.
RHODESIA	0.164	13.90	0.	0.
RWANDA	0.204	3.61	0.	0.
SENEGAL	0.171	5.51	0.	0.
SIE LEON	0.107	7.71	0.	0.
SOMALIA	0.224	3.77	0.	0.
S AFRICA	0.219	0.58	0.	0.
TANZANIA	0.198	1.18	0.	-100.00
UGANDA	0.213	4.38	0.	0.
UP VOLTA	0.032	7.57	0.863	-7.68
ZAIRE	0.164	4.52	0.	0.
ZAMBIA	0.060	2.90	0.	0.

	ALIGN TRADE		ALIGN VOTE	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.257	3.20	0.	0.
CAMEROON	0.319	6.08	0.	0.
CEN AFRB	0.277	4.27	0.	0.
CHAD	0.145	7.55	0.	0.
PR CONGO	0.138	1.53	0.	0.
DAHOMEY	0.155	12.33	0.	0.
ETHIOPIA	0.029	-2.34	1.175	-0.15
GAMBIA	0.219	1.96	0.	0.
GHANA	0.303	7.49	0.	0.
GUINEA	0.247	3.63	0.	0.
IVRY CST	0.054	-5.17	1.414	0.
KENYA	0.338	11.35	0.	0.
LIBERIA	0.060	0.33	0.363	-6.45
MALAGASY	0.715	2.60	0.	0.
MALAWI	0.109	5.76	0.	0.
MALI	0.204	4.74	0.	0.
NIGER	0.077	2.96	0.	0.
NIGERIA	0.303	1.23	0.	0.
RHODESIA	0.250	8.94	0.	0.
RWANDA	0.242	3.42	0.	0.
SENEGAL	0.222	5.09	0.	0.
SIE LEON	0.149	6.37	0.	0.
SOMALIA	0.263	3.06	0.	0.
S AFRICA	0.221	0.01	0.	0.
TANZANIA	0.111	0.11	0.110	49.50
UGANDA	0.249	2.78	0.	0.
UP VOLTA	0.049	9.16	0.419	-19.19
ZAIRE	0.197	3.62	0.	0.
ZAMBIA	0.048	2.28	0.	0.

1985

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.560	-0.21	0.440	25.89
BOLIVIA	0.658	28.08	0.850	0.24
BRAZIL	0.394	3.45	0.399	0.25
CHILE	0.498	0.	0.254	1.23
COLOMBIA	0.045	2.01	0.480	0.13
COS RICA	0.504	0.	0.286	1.70
CUBA	0.809	0.	0.797	3.25
DOM REPB	0.574	0.	0.168	0.13
ECUADOR	0.497	0.	0.337	-10.44
EL SALVA	0.515	0.	0.294	-5.99
GUATEMAL	0.564	0.	0.500	0.32
HAITI	0.663	0.	0.613	1.14
HONDURAS	0.659	0.	0.289	5.06
JAMAICA	0.520	0.	0.114	1.29
MEXICO	0.593	0.	0.051	-0.00
NICARAGU	0.515	0.	0.337	2.37
PANAMA	0.653	0.	0.900	1.59
PARAGUAY	0.658	0.	0.247	-2.69
PERU	0.039	-19.20	0.303	0.73
URUGUAY	0.257	1.52	0.483	0.94
VENEZUEL	0.666	0.	0.160	1.79

1990

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.581	0.67	0.377	-23.52
BOLIVIA	0.514	0.	0.744	-3.98
BRAZIL	0.439	1.27	0.407	0.42
CHILE	0.498	0.	0.275	1.74
COLOMBIA	0.152	24.29	0.456	-1.19
COS RICA	0.504	0.	0.312	1.83
CUBA	0.953	17.83	0.604	-10.59
DOM REPB	0.574	0.	0.169	0.14
ECUADOR	0.497	0.	0.192	-1.58
EL SALVA	0.510	0.	0.168	-8.84
GUATEMAL	0.564	0.	0.500	0.
HAITI	0.519	-21.76	0.823	6.81
HONDURAS	0.659	0.	0.184	-16.82
JAMAICA	0.520	0.	0.120	0.87
MEXICO	0.593	0.	0.049	-0.52
NICARAGU	0.518	0.	0.307	-3.47
PANAMA	0.653	28.33	0.978	1.82
PARAGUAY	0.658	0.	0.230	-0.52
PERU	0.061	19.15	0.327	1.73
URUGUAY	0.272	0.91	0.501	0.62
VENEZUEL	0.666	0.	0.188	3.66

1995

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.585	-0.07	0.550	39.34
BOLIVIA	0.514	0.	0.666	-1.24
BRAZIL	0.451	0.31	0.412	0.15
CHILE	0.498	0.	0.292	1.03
COLOMBIA	0.237	5.19	0.444	-0.33
COS RICA	0.504	0.	0.345	2.07
CUBA	0.809	-15.13	0.409	-5.44
DOM REPB	0.574	0.	0.223	25.49
ECUADOR	0.497	0.	0.200	0.69
EL SALVA	0.510	0.	0.187	13.35
GUATEMAL	0.564	0.	0.500	-0.00
HAITI	0.663	0.	1.043	3.86
HONDURAS	0.659	0.	0.185	11.84
JAMAICA	0.520	0.	0.124	0.70
MEXICO	0.593	0.	0.048	-0.47
NICARAGU	0.518	-21.77	0.355	5.72
PANAMA	0.653	28.33	1.056	1.49
PARAGUAY	0.658	0.	0.214	-2.07
PERU	0.087	5.03	0.347	1.05
URUGUAY	0.288	1.34	0.523	1.02
VENEZUEL	0.666	0.	0.211	1.81

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	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.119	-20.63	0.564	0.52
EGYPT	0.464	-2.25	0.623	0.65
IRAN	0.836	0.	0.658	1.11
IRAQ	0.514	-6.38	0.578	-0.19
ISRAEL	0.516	0.70	0.618	0.71
JORDAN	0.004	0.09	0.567	3.17
KUWAIT	0.503	5.14	0.536	3.85
LEBANON	0.607	-0.16	0.548	0.48
LIBYA	0.718	-0.23	0.564	0.02
MORROCCO	0.054	-13.07	0.614	0.81
SAU ARAB	0.822	0.20	0.697	2.81
SUDAN	0.009	-19.28	0.535	0.18
SYRIA	0.750	-0.01	0.596	-0.66
TUNESIA	0.516	-8.73	0.599	-1.74
YEMEN	0.000	-100.00	0.553	2.46

1990

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.037	-20.95	0.580	0.58
ESYPT	0.372	-5.94	0.643	0.68
IRAN	0.836	0.	0.655	-0.04
IRAQ	0.230	-22.35	0.579	0.34
ISRAEL	0.505	-1.49	0.621	-0.35
JORDAN	0.096	2358.49	0.576	-1.77
KUWAIT	0.070	-13.35	0.554	1.35
LEBANON	0.577	-1.69	0.554	0.09
LIBYA	0.710	-0.08	0.570	0.56
MORROCCO	0.026	-14.38	0.645	1.14
SAU ARAB	0.923	-0.02	0.705	0.01
SUDAN	0.001	-54.03	0.540	0.23
SYRIA	0.750	0.04	0.594	0.04
TUNESIA	0.599	0.39	0.645	1.40
YEMEN	0.000	-100.00	0.567	2.09

1995

	ALIGNMENT INSTABILITY		ALIGNR	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.013	207.97	0.623	2.47
EGYPT	0.240	-10.16	0.674	1.17
IRAN	0.636	0.	0.655	-0.00
IRAQ	0.029	-42.08	0.607	1.21
ISRAEL	0.151	-59.13	0.635	1.91
JORDAN	0.004	-95.93	0.613	1.36
KUWAIT	0.000	-100.00	0.775	17.75
LEBANON	0.498	-3.95	0.556	0.04
LIBYA	0.708	-0.12	0.587	0.47
MORROCCO	0.011	-15.79	0.694	1.71
SAU ARAB	0.822	-0.04	0.708	0.10
SUDAN	0.008	32.66	0.548	0.33
SYRIA	0.743	-0.38	0.595	-0.04
TUNESIA	0.589	-0.95	0.654	-0.34
YEMEN	0.080	100.00	0.584	0.51

| | ALIGNMENT INSTABILITY | | ALIGNR | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	6.521	0.	6.091	4.00
CAMEROON	6.432	0.81	0.046	6.55
CEN AFRB	0.666	0.	6.093	4.57
CHAD	6.521	0.	0.074	-44.92
PR CONGO	0.809	-15.14	0.059	1.96
DAHOMEY	0.522	0.	0.212	-30.15
ETHIOPIA	0.534	37.25	0.617	-0.65
GAMBIA	0.235	5.07	0.097	0.72
GHANA	0.791	0.26	0.077	4.74
GUINEA	0.953	0.	0.062	5.00
IVRY CST	0.666	0.	0.222	596.22
KENYA	0.446	-24.04	0.065	9.60
LIBERIA	0.349	73.25	0.316	-10.75
MALAGASY	0.593	0.	0.179	9.62
MALAWI	0.521	0.	0.121	-34.72
MALI	0.929	0.	0.066	4.71
NIGER	0.665	0.	0.254	-16.69
NIGERIA	0.895	0.06	0.135	-8.52
RHODESIA	0.522	0.	0.047	12.39
FRANCA	0.544	1.05	0.084	4.60
SENEGAL	0.662	0.	0.066	4.56
SIE LEON	0.449	1.66	0.336	9.79
SOMALIA	0.863	0.63	0.093	3.62
S AFRICA	0.666	0.	0.117	0.15
TANZANIA	0.529	0.26	0.050	1.65
UGANDA	0.883	0.24	0.069	2.72
UP VOLTA	0.520	0.	0.592	-3.16
ZAIRE	0.489	0.34	0.065	-10.99
ZAMBIA	0.422	0.75	0.028	2.47

| | ALIGNMENT INSTABILITY | | ALIGNR | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.665	0.	0.109	3.52
CAMEROON	0.582	33.84	0.115	6.44
CEN AFRB	0.522	0.	0.112	4.37
CHAD	0.665	27.67	0.052	8.13
PR CONGO	0.809	-15.14	0.064	1.54
DAHOMEY	0.522	0.	0.042	13.45
ETHIOPIA	0.393	-26.75	0.635	-0.14
GAMBIA	0.245	161.32	0.101	1.00
GHANA	0.794	0.31	0.106	7.25
GUINEA	0.808	-15.14	0.103	4.17
IVRY CST	0.666	0.	0.424	-11.62
KENYA	0.605	32.08	0.114	11.15
LIBERIA	0.218	-39.39	0.246	2.49
MALAGASY	0.593	0.	0.276	8.72
MALAWI	0.521	0.	0.042	4.47
MALI	0.929	0.	0.052	4.05
NIGER	0.665	0.	0.034	-61.05
NIGERIA	0.897	0.05	0.141	1.58
RHODESIA	0.522	0.	0.052	10.90
RWANDA	0.423	-24.90	0.102	3.61
SENEGAL	0.662	0.	0.085	5.51
SIE LEON	0.451	1.20	0.053	7.71
SOMALIA	0.533	0.54	0.112	3.77
S AFRICA	0.666	0.	0.110	0.55
TANZANIA	0.535	3.21	0.054	-0.24
UGANDA	0.894	0.24	0.106	4.03
UP VOLTA	0.520	0.	0.448	-7.20
ZAIRE	0.477	0.30	0.062	4.52
ZAMBIA	0.438	-24.38	0.030	2.90

| | ALIGNMENT INSTABILITY | | ALIGNR | |
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.521	-21.70	0.126	3.2.
CAMEROON	0.597	32.66	0.159	6.05
CEN AFRB	0.522	-21.66	0.139	4.27
CHAD	0.521	0.	0.072	7.55
PR CONGO	0.809	0.	0.069	1.53
DAHOMEY	0.522	0.	0.078	12.33
ETHIOPIA	0.541	0.12	0.602	-0.26
GAMBIA	0.299	3.57	0.110	1.96
GHANA	0.935	0.27	0.152	7.49
GUINEA	0.953	17.54	0.124	3.63
IVRY CST	0.521	0.	0.734	-0.22
KENYA	0.616	0.36	0.194	11.35
LIBERIA	0.232	-37.91	0.211	-5.54
MALAGASY	0.593	0.	0.360	2.60
MALAWI	0.521	0.	0.054	5.76
MALI	0.929	0.	0.102	4.74
NIGER	0.665	0.	0.039	2.96
NIGERIA	0.899	0.04	0.151	1.23
RHODESIA	0.522	0.	0.130	8.94
RWANDA	0.545	0.56	0.121	3.42
SENEGAL	0.662	0.	0.110	5.03
SIE LEON	0.506	0.92	0.074	6.17
SOMALIA	0.737	-16.61	0.132	3.06
S AFRICA	0.666	0.	0.111	0.01
TANZANIA	0.540	0.15	0.110	19.81
UGANDA	0.903	0.17	0.125	2.76
UP VOLTA	0.520	0.	0.234	-16.97
ZAIRE	0.493	-22.97	0.099	3.42
ZAMBIA	0.595	32.67	0.034	2.34

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	3.180	9.78
BOLIVIA	0.	0.	-1.918	-4.32
BRAZIL	0.168	37.01	3.357	-5.66
CHILE	0.	0.	7.356	7.96
COLOMBIA	0.	0.	16.893	13.42
COS RICA	0.	0.	36.734	25.29
CUBA	0.	0.	-8.704	-14.53
DOM REPB	0.	0.	7.541	2.71
ECUADOR	0.	0.	-3.924	-5.22
EL SALVA	0.	0.	-1.553	1.18
GUATEMAL	0.	0.	7.568	-0.88
HAITI	0.	0.	-3.531	-8.38
HONDURAS	0.	0.	-2.142	-1.91
JAMAICA	0.	0.	29.129	0.85
MEXICO	0.300	3.52	1.312	0.25
NICARAGU	0.	0.	-6.475	-10.05
PANAMA	0.	0.	-8.199	-21.29
PARAGUAY	0.	0.	-12.745	0.66
PERU	0.	0.	-4.297	-9.84
URUGUAY	0.	0.	41.555	2.13
VENEZUEL	0.	0.	3.713	7.45

1990

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	-100.00	3.173	-7.35
BOLIVIA	0.	0.	-1.567	-3.72
BRAZIL	0.248	-1.91	2.334	-7.06
CHILE	0.	0.	12.707	15.87
COLOMBIA	0.	0.	73.523	75.71
COS RICA	0.	0.	-39.055	-47.54
CUBA	0.	0.	-4.797	-9.66
DOM REPB	0.	0.	9.357	6.16
ECUADOR	0.	0.	-3.695	-4.56
EL SALVA	0.	0.	-1.354	-4.36
GUATEMAL	0.	0.	8.290	3.58
HAITI	0.	0.	-2.078	-10.50
HONDURAS	0.	0.	-1.641	-6.65
JAMAICA	0.	0.	43.383	14.49
MEXICO	0.312	0.35	1.631	6.96
NICARAGU	0.	0.	-3.999	-8.88
PANAMA	0.	0.	-3.374	-13.07
PARAGUAY	0.	0.	-9.598	-8.89
PERU	0.	0.	-2.891	-6.57
URUGUAY	0.	0.	62.435	13.67
VENEZUEL	0.	0.	3.663	-3.16

1995

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.076	100.00	3.787	11.98
BOLIVIA	0.	0.	-1.196	-5.97
BRAZIL	0.679	4.07	2.011	-4.83
CHILE	0.	0.	97.699	138.76
COLOMBIA	0.	0.	-20.941	-27.63
COS RICA	0.	0.	-12.474	-12.92
CUBA	0.	0.	-2.860	-9.73
DOM REPB	0.	0.	12.920	7.17
ECUADOR	0.	0.	-2.270	-6.63
EL SALVA	0.	0.	-1.004	-6.29
GUATEMAL	0.	0.	8.663	-0.30
HAITI	0.	0.	-1.077	-13.31
HONDURAS	0.	0.	-1.173	-6.39
JAMAICA	0.	0.	179.270	68.74
MEXICO	0.329	0.50	2.109	4.28
NICARAGU	0.	0.	-2.482	-9.13
PANAMA	0.	0.	-1.756	-11.76
PARAGUAY	0.	0.	-7.728	-1.18
PERU	0.	0.	-1.936	-7.79
URUGUAY	0.	0.	109.697	9.15
VENEZUEL	0.	0.	3.645	0.58

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.362	3.21	-11.584	-13.48
EGYPT	5.401	-0.27	58.347	3.24
IRAN	1.151	-0.39	6.371	-3.05
IRAQ	1.953	0.42	87.331	35.34
ISRAEL	3.975	3.22	-166.266	144.65
JORDAN	3.715	0.	-0.997	0.59
KUWAIT	0.507	0.	-0.826	-33.47
LEBANON	2.158	0.	263.169	-24.53
LIBYA	2.287	0.	22.610	-0.40
MOROCCO	1.039	0.87	-6.999	-8.77
SAU ARAB	1.991	-0.15	18.378	-2.64
SUDAN	1.171	1.17	-6.670	1.61
SYRIA	2.039	-1.49	26.250	-6.74
TUNESIA	1.927	-2.94	54.475	6.67
YEMEN	0.507	0.	-0.002	-26.45

1990

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.356	-1.82	-6.531	-10.79
EGYPT	5.369	-0.05	458.638	199.30
IRAN	1.126	-0.47	6.192	0.62
IRAQ	1.992	0.42	-46.665	-37.64
ISRAEL	3.975	0.	-60.202	-59.32
JORDAN	3.715	0.	-0.759	-6.42
KUWAIT	0.507	0.	-0.121	-35.46
LEBANON	2.158	0.	-982.440	-252.35
LIBYA	2.287	0.	24.529	1.67
MORROCCO	1.056	0.12	-4.505	-8.23
SAU ARAB	1.910	-1.04	17.296	-0.47
SUDAN	1.175	-0.39	-6.879	-0.16
SYRIA	1.863	-1.93	16.329	-3.07
TUNESIA	2.003	2.83	45.161	-1.19
YEMEN	0.507	0.	-0.001	-25.19

1995

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	1.408	2.55	-3.365	-13.01
EGYPT	5.336	-0.16	-51.396	-22.86
IRAN	1.102	-0.40	5.730	-2.81
IRAQ	2.038	0.49	-13.571	-16.97
ISRAEL	2.454	-9.77	-0.166	-87.13
JORDAN	3.715	0.	-0.499	-8.83
KUWAIT	0.507	0.	-0.018	-32.35
LEBANON	2.158	0.	-60.896	-21.24
LIBYA	2.287	0.	23.207	-2.24
MORROCCO	1.061	0.05	-2.832	-9.09
SAU ARAB	1.800	-1.26	14.898	-4.37
SUDAN	1.155	-0.38	-6.273	-2.49
SYRIA	1.875	0.64	15.238	-1.42
TUNESIA	2.028	0.	52.974	9.54
YEMEN	0.507	0.	-0.000	-26.85

1985

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.551	0.36	-5.127	6.67
CAMEROON	0.465	0.19	-2.823	1.99
CEN AFR	0.627	1.00	-522.335	414.56
CHAD	0.464	0.44	-0.554	2.07
FR CONGO	0.441	0.24	-20.417	-20.33
DAHOMEY	0.451	-3.55	-0.392	-2.45
ETHIOPIA	1.661	0.22	-0.302	-7.27
GAMBIA	0.640	14.47	-113.677	59.49
GHANA	0.399	-0.07	-1.823	-9.25
GUINEA	1.109	7.03	-4.555	5.21
IVRY CST	1.270	1.46	-3.813	-15.01
KENYA	0.378	-0.91	-0.884	0.97
LIBERIA	0.436	-2.55	-1.907	-17.99
MALAGASY	0.423	-0.42	-7.055	14.12
MALAWI	0.440	-0.53	-0.470	0.56
MALI	0.466	-0.58	-1.080	0.95
NIGER	0.440	0.14	-0.439	-0.92
NIGERIA	4.028	-0.28	-0.667	-8.42
RHODESIA	0.431	-0.61	-1.760	4.17
RWANDA	0.459	-0.66	-2.782	3.22
SENEGAL	0.489	0.77	-4.596	1.16
SIE LEON	0.567	1.10	-1.669	5.38
SOMALIA	1.742	-3.21	-23.779	3.17
S AFRICA	2.339	-0.02	12.442	30.99
TANZANIA	0.389	0.17	-0.935	-5.34
UGANDA	0.394	-0.02	-1.721	-1.97
UP VOLTA	0.431	0.17	-0.167	-2.39
ZAIRE	0.657	-0.96	-0.669	-3.78
ZAMBIA	0.803	-0.59	-60.086	-11.22

1990

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.559	0.24	-6.809	3.79
CAMEROON	0.465	-0.16	-3.254	3.13
CEN AFR	0.658	0.88	44.594	-13.74
CHAD	0.474	0.39	-0.594	3.53
FR CONGO	0.455	-0.16	-6.282	-14.91
DAHOMEY	0.471	0.71	-0.619	9.33
ETHIOPIA	1.671	0.09	-0.220	-5.66
GAMBIA	0.715	0.86	-51.533	-10.06
GHANA	0.381	-1.24	-1.697	-0.05
GUINEA	1.108	-0.02	-5.488	2.42
IVRY CST	1.041	-1.95	-1.552	-20.09
KENYA	0.353	-1.54	-1.001	3.22
LIBERIA	0.459	0.80	-1.371	-5.61
MALAGASY	0.409	-0.92	-15.699	19.14
MALAWI	0.448	0.83	-0.532	3.47
MALI	0.471	0.48	-1.290	4.46
NIGER	0.442	0.24	-0.466	2.12
NIGERIA	3.984	-0.18	-0.593	-6.91
RHODESIA	0.412	-0.88	-2.315	5.53
RWANDA	0.450	-0.36	-3.068	0.73
SENEGAL	0.489	-0.22	-4.978	1.98
SIE LEON	0.599	0.67	-2.058	3.78
SOMALIA	1.637	-0.74	-30.131	2.96
S AFRICA	0.334	-0.40	-9.654	-41.20
TANZANIA	0.389	-0.07	-0.705	-5.56
UGANDA	0.378	-1.26	-1.582	-1.74
UP VOLTA	0.435	0.16	-0.175	2.39
ZAIRE	0.624	-1.00	-0.521	-3.04
ZAMBIA	0.788	-0.30	-51.135	-12.14

1995

	CONFLICT		TENSION RATIO	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	0.564	0.12	-7.649	3.29
CAMEROON	0.460	-0.29	-3.872	4.57
CEN AFR	0.694	0.76	20.321	-14.94
CHAD	0.481	0.24	-0.647	0.87
FR CONGO	0.451	0.03	-4.594	-9.26
DAHOMEY	0.477	0.17	-0.834	5.24
ETHIOPIA	1.672	-0.02	-0.152	-7.88
GAMBIA	0.876	3.59	-185.938	76.97
GHANA	0.356	-1.48	-1.745	1.76
GUINEA	1.104	-0.09	-5.896	1.56
IVRY CST	1.033	1.29	-6.558	-14.49
KENYA	0.324	-1.82	-1.171	3.76
LIBERIA	0.463	-0.26	-3.853	-9.54
MALAGASY	0.391	-2.93	153.946	-266.21
MALAWI	0.440	-1.25	-0.533	-2.04
MALI	0.473	-0.27	-1.490	2.65
NIGER	0.441	-0.10	-6.497	1.04
NIGERIA	3.956	-0.13	-0.394	-8.24
RHODESIA	0.392	-1.09	-2.912	5.11
RWANDA	0.436	-0.71	-2.946	-1.23
SENEGAL	0.488	-0.04	-5.786	4.67
SIE LEON	0.610	0.67	-2.277	1.35
SOMALIA	1.599	-0.40	-33.214	3.08
S AFRICA	0.331	-0.09	-2.643	-16.73
TANZANIA	0.389	0.12	-0.691	-7.64
UGANDA	0.363	-0.62	-1.359	-3.44
UP VOLTA	0.436	0.01	-0.169	1.05
ZAIRE	0.597	-0.82	-0.611	-5.31
ZAMBIA	0.779	-0.10	-28.462	-6.96

1985

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVIA	8.781	6.75	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	0.	0.	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	1.490	-4.59	0.	0.
CUBA	7.581	2.98	1.000	0.
DOM REPB	0.901	51.04	0.	0.
ECUADOR	3.842	-2.17	0.	-100.00
EL SALVA	0.	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	13.619	4.25	1.000	0.
HONDURAS	0.	0.	0.	0.
JAMAICA	14.838	-0.99	0.	0.
MEXICO	0.	0.	0.	0.
NICARAGU	2.351	11.86	0.189	100.00
PANAMA	19.975	0.30	1.000	0.
PARAGUAY	8.984	5.25	0.	0.
PERU	0.956	-23.05	0.	0.
URUGUAY	19.885	-1.06	0.	0.
VENEZUEL	0.	0.	0.	0.

1990

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVIA	10.728	2.75	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	0.	0.	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	1.129	-5.40	0.	0.
CUBA	7.732	-0.81	1.000	0.
DOM REPB	2.073	9.36	0.	0.
ECUADOR	3.159	-3.81	0.	0.
EL SALVA	0.	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	14.203	-0.55	1.000	0.
HONDURAS	0.004	-76.51	0.	0.
JAMAICA	13.834	-1.56	0.	0.
MEXICO	0.	0.	0.	0.
NICARAGU	3.662	8.67	0.506	-6.35
PANAMA	19.113	-1.45	1.000	0.
PARAGUAY	10.517	2.28	0.194	100.00
PERU	0.	-100.00	0.	0.
URUGUAY	18.841	-0.68	0.	0.
VENEZUEL	0.	0.	0.	0.

1995

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ARGENTIN	0.	0.	0.	0.
BOLIVIA	11.792	1.46	1.000	0.
BRAZIL	0.	0.	0.	0.
CHILE	0.	0.	0.	0.
COLOMBIA	0.	0.	0.	0.
COS RICA	0.865	-5.06	0.	0.
CUBA	7.084	-2.53	0.918	19.53
DOM REPB	2.643	3.06	0.497	100.00
ECUADOR	2.729	-2.68	0.	0.
EL SALVA	0.	0.	0.	0.
GUATEMAL	0.	0.	0.	0.
HAITI	13.014	-2.34	1.000	0.
HONDURAS	0.109	39.95	0.	0.
JAMAICA	12.694	-1.71	0.232	261.64
MEXICO	0.	0.	0.	0.
NICARAGU	5.437	7.61	1.000	0.
PANAMA	17.664	-1.50	1.000	0.
PARAGUAY	11.840	2.59	0.	-100.00
PERU	0.	0.	0.	0.
URUGUAY	18.441	-0.32	0.	0.
VENEZUEL	0.	0.	0.	0.

1985

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.	0.
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.	0.	0.	0.
ISRAEL	0.311	-56.74	0.	0.
JORDAN	1.285	-1.16	0.853	-6.94
KUWAIT	1.465	2.33	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MOROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.974	-2.61
YEMEN	1.539	0.50	1.000	0.

1990

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.	0.
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.	0.	0.484	28.45
ISRAEL	0.	0.	0.	0.
JORDAN	1.065	-3.80	0.935	0.62
KUWAIT	1.538	0.51	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MOROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.	0.
YEMEN	1.555	0.10	1.000	0.

1995

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
ALGERIA	0.	0.	0.297	100.00
EGYPT	0.	0.	0.	0.
IRAN	0.	0.	0.	0.
IRAQ	0.025	100.00	0.733	4.03
ISRAEL	0.176	100.00	1.000	0.
JORDAN	1.103	1.82	0.998	1.70
KUWAIT	1.552	0.12	1.000	0.
LEBANON	0.	0.	0.	0.
LIBYA	0.	0.	0.	0.
MOROCCO	0.	0.	0.	0.
SAU ARAB	0.	0.	0.	0.
SUDAN	0.	0.	0.	0.
SYRIA	0.	0.	0.	0.
TUNESIA	0.	0.	0.	0.
YEMEN	1.558	0.02	1.000	0.

1985

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	96.192	35.39	1.000	0.
CAMEROON	25.049	25.35	1.000	0.
CEN AFRB	12.894	37.33	1.000	25.71
CHAD	787.041	40.55	1.000	0.
PR CONGO	962.313	41.37	1.000	0.
DAHOMEY	0.	0.	0.590	-10.04
ETHIOPIA	348.424	41.08	1.000	0.
GAMBIA	663.244	41.29	1.000	0.
GHANA	0.	0.	0.189	-8.12
GUINEA	6.176	37.26	0.574	78.69
IVRY CST	0.	0.	0.237	645.14
KENYA	126.628	35.94	1.000	0.
LIBERIA	552.267	41.10	1.000	0.
MALAGASY	0.	0.	0.	0.
MALAWI	7.061	-35.91	1.000	0.
MALI	0.	0.	0.	0.
NIGER	0.	0.	0.452	-1.29
NIGERIA	0.	0.	0.613	-2.57
RHODESIA	0.	0.	0.144	-34.05
RWANDA	423.528	40.92	1.000	0.
SENEGAL	0.049	103.08	0.	0.
SIE LEON	0.	0.	0.	0.
SOMALIA	46.377	37.66	1.000	0.
S AFRICA	0.	0.	0.	0.
TANZANIA	0.	0.	0.156	18.43
UGANDA	0.	0.	0.324	-9.15
UP VOLTA	0.	0.	0.649	-2.26
ZAIRE	321.857	40.61	1.000	0.
ZAMBIA	33.445	32.35	1.000	0.

1990

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	185.791	39.96	1.000	0.
CAMEROON	192.128	35.45	1.000	0.
CEN AFRB	57.455	36.61	1.000	0.
CHAD	1614.253	41.52	1.000	0.
PR CONGO	5134.233	41.67	1.000	0.
DAHOMEY	0.	0.	0.317	-15.73
ETHIOPIA	1974.512	41.62	1.000	0.
GAMBIA	3752.779	41.65	1.000	0.
GHANA	0.	0.	0.	0.
GUINEA	23.344	29.93	1.000	0.
IVRY CST	0.	0.	0.438	-12.31
KENYA	695.263	41.21	1.000	0.
LIBERIA	3131.037	41.62	1.000	0.
MALAGASY	0.	0.	0.	0.
MALAWI	0.	0.	0.648	-5.48
MALI	0.	0.	0.	0.
NIGER	0.	0.	0.371	-5.84
NIGERIA	0.	0.	0.539	-1.95
RHODESIA	0.	0.	0.	0.
RWANDA	2394.572	41.59	1.000	0.
SENEGAL	0.393	45.34	0.	0.
SIE LEON	0.712	79.55	0.	0.
SOMALIA	246.929	40.79	1.000	0.
S AFRICA	0.	0.	0.004	-87.72
TANZANIA	0.	0.	0.251	7.17
UGANDA	0.	0.	0.	-100.00
UP VOLTA	0.	0.	0.735	-3.29
ZAIRE	1511.317	41.53	1.000	0.
ZAMBIA	164.314	39.76	1.000	0.

1995

	TURMOIL		COUP PROBABILITY	
	CURRENT	% CHANGE	CURRENT	% CHANGE
BURUNDI	1008.364	41.41	1.000	0.
CAMEROON	556.649	41.11	1.000	0.
CEN AFRB	304.422	40.75	1.000	0.
CHAD	9204.733	41.69	1.000	0.
PR CONGO	29335.696	41.72	0.	-100.00
DAHOMEY	0.	0.	1.000	0.
ETHIOPIA	11273.559	41.71	1.000	0.
GAMBIA	21439.503	41.72	0.	0.
GHANA	0.	0.	1.000	0.
GUINEA	106.935	35.66	1.000	13.33
IVRY CST	0.	0.	1.000	0.
KENYA	3946.753	41.64	1.000	0.
LIBERIA	17579.512	41.71	0.	0.
MALAGASY	0.	0.	0.346	-18.80
MALAWI	0.	0.	0.	0.
MALI	0.	0.	0.202	-12.11
NIGER	0.	0.	0.505	-0.88
NIGERIA	0.	0.	0.	0.
RHODESIA	0.	0.	1.000	0.
RWANDA	13666.497	41.70	0.	0.
SENEGAL	2.374	42.31	0.317	284.53
SIE LEON	5.543	45.15	1.000	0.
SOMALIA	1393.193	41.56	0.096	94.64
S AFRICA	0.	0.	0.361	7.06
TANZANIA	0.	0.	0.	0.
UGANDA	0.	0.	0.593	-4.92
UP VOLTA	0.	0.	1.000	0.
ZAIRE	18379.497	41.69	1.000	0.
ZAMBIA	912.633	41.36	1.000	0.

1985

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	3	3
CUBA	1	1
HAITI	3	1
PANAMA	3	1
JORDAN	3	1
KUWAIT	3	3
TUNESIA	1	3
YEMEN	3	1
BURUNDI	1	3
CAMEROON	1	1
CEN AFR	3	3
CHAD	1	2
FR CONGO	1	3
ETHIOPIA	3	3
GAMBIA	3	1
KENYA	1	1
LIBERIA	3	1
MALAWI	1	3
RWANDA	3	3
SOMALIA	3	1
UP VOLTA	1	3
ZAIRE	1	3
ZAMBIA	1	2

END OF REPORT FOR 1985

1990

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	1	3
CUBA	3	1
HAITI	1	1
PANAMA	3	1
JORDAN	1	1
KUWAIT	1	1
YEMEN	3	3
BURUNDI	3	1
CAMEROON	3	3
CEN AFR	1	3
CHAD	3	3
FR CONGO	1	3
ETHIOPIA	1	1
GAMBIA	3	1
GUINEA	1	3
KENYA	3	3
LIBERIA	1	3
RWANDA	1	3
SOMALIA	3	3
ZAIRE	1	3
ZAMBIA	1	3

END OF REPORT FOR 1990

1995

	OLD GOV TYPE	NEW GOV TYPE
BOLIVIA	1	1
CUBA	1	3
HAITI	3	1
NICARAGU	1	1
PANAMA	3	1
ISRAEL	1	1
JORDAN	3	1
KUWAIT	3	1
YEMEN	1	1
BURUNDI	1	3
CAMEROON	3	3
CEN AFRB	1	1
CHAD	1	3
FR CONGO	1	3
ETHIOPIA	1	1
GAMBIA	3	1
GUINEA	3	1
IVRY CST	1	3
KENYA	3	3
LIBERIA	1	1
RWANDA	3	3
SOMALIA	1	1
ZAIRE	1	3
ZAMBIA	3	3

END OF REPORT FOR 1995

MATERIAL INSPECTION AND RECEIVING REPORT	1. PROC. INSTRUMENT IDEN(CONTRACT) MDA903-75-C-0179	(ORDER) NO. 2936	6. INVOICE NO. DATE	7. PAGE 1 / OF 2 8. ACCEPTANCE POINT D			

2. SHIPMENT NO. CA 0022	3. DATE SHIPPED Oct.31 1975 CN	4. B/L	5. DISCOUNT TERMS N/A

9. PRIME CONTRACTOR CODE 2D166	10. ADMINISTERED BY CODE S2101A
CACI, Inc. 1815 North Fort Myer Dr. Arlington, Va. 22209	DCASD, Baltimore Room 200 300 E. Joppa Rd. Towson, Md. 21204

11. SHIPPED FROM (If other than 9) CODE FOB:	12. PAYMENT WILL BE MADE BY CODE S3910A
CACI, Inc. 1815 North Fort Myer Dr. Arlington, Va. 22209	DCASR, Philadelphia P.O. Box 7730 Philadelphia, Pa. 19101

13. SHIPPED TO CODE	14. MARKED FOR CODE
SEE PAGE 2	SAME AS BLOCK 13

15. ITEM NO.	16. STOCK/PART NO. DESCRIPTION (Indicate number of shipping containers - type of container - container number.)	17. QUANTITY SHIP/REC'D *	18. UNIT	19. UNIT PRICE	20. AMOUNT
000	2B FINAL TECHNICAL REPORT "Stochastic Simulations of Long-Range Forecasting Models," consisting of: Volume 1, Executive Summary, Volume II, Research Findings, Volume III, Technical Appendix	2	ea.	included in total contract price	

21. PROCUREMENT QUALITY ASSURANCE		22. RECEIVER'S USE
A. ORIGIN ☐ PQA ☐ ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.	B. DESTINATION ☐ PQA ☐ ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.	Quantities shown in column 17 were received in apparent good condition except as noted. DATE RECEIVED SIGNATURE OF AUTH GOVT REP TYPED NAME AND OFFICE
DATE SIGNATURE OF AUTH GOVT REP TYPED NAME AND OFFICE	DATE SIGNATURE OF AUTH GOVT REP TYPED NAME AND TITLE	* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.

23. CONTRACTOR USE ONLY

Item No. 13.   Two sets shipped to:

Director
Defense Advanced Research Projects Agency
ATTN: Program Management
1400 Wilson Boulevard
Arlington, Virginia   22209

Twelve sets shipped to:

Defense Documentation Center
Cameron Station
Alexandria, Virginia

Washington, D.C. Offices: 1815 North Fort Myer Dr., Arlington, Virginia 22209, Telephone (703) 841-7800

Los Angeles Offices: 12011 San Vicente Boulevard, Los Angeles, California 90049, Telephone (213) 476-6511

New York Offices: 75 Rockefeller Plaza, New York, New York 10019, Telephone (212) 541-6240

Santa Barbara Offices: 800 Garden Street, Santa Barbara, California 93101, Telephone (805) 965-0076

Harrisburg Area Offices: 5000 Lenker Street, Mechanicsburg, Pa. 17055, Telephone (717) 761-6122

The Hague Offices: 2 Kettingstraat, The Hague, Netherlands 2001, Telephone 070-468908

Bermuda Offices: P.O. Box 279, Commerce Building, Reid St., Hamilton 5, Bermuda, Telephone 20276

London Offices: 23 Grosvenor Street, London W1X-9FE, England, Telephone 01 499-5418/9