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Sociopolitical Instability, Inequality and Consumption Behavior

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Intertemporal utility maximizing behavior by income group under uncertainty due to sociopolitical instability leads to an estimable aggregate consumption function. Estimation from a cross-section of 50 countries indicates a significant positive relation between sociopolitical instability and the aggregate propensity to consume and yields point estimates of income-group consumption propensities. With the estimation of a relation making sociopolitical instability dependent on the distribution of income, a 2-equation system is obtained which models the effect on the aggregate consumption propensity of income redistribution. An interesting result is the existence of equalizing redistributions that do not reduce the propensity to save.

I. Introduction

Our purpose here is to investigate the effects of income distribution and uncertainty caused by sociopolitical instability (SPI) on the behavior of consumption. The literature has attributed the sources of uncertainty about the future either to natural causes (Boulding), or to general economic circumstances (Keynes), rather than to possible changes in the sociopolitical environment and institutional structure. Yet, such changes can be identified in the modern histories of many countries. Moreover, events that may be viewed as precursors of sociopolitical changes, or that may result in new regimes with new and different pri-

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orities, are observable across countries. If we associate such events with SPI, then it seems reasonable to assume that SPI would be perceived as affecting the likelihood of future changes in the sociopolitical environment and this, in turn, would be taken into account in the decisions of intertemporal utility maximizers.[1]

There also exists a large and continuing literature on the relationship between economic growth and income distribution in which one major concern is the connection between inequality and saving or consumption behavior (see the review-like Lindert and Williamson). Blinder broke, except under very special condition, the theoretical connections between the assumption that as an individual consuming unit's income increases the share consumed declines, and the proposition that a more equitable distribution of a given income will result in greater aggregate consumption. In two cross-sectional studies of this proposition, Musgrove, and Della Valle and Oguchi both find that distributional variables are not significant in explaining the average propensity to consume (APC) unless the sample is restricted to more developed, higher per-capita income countries.

Here we extend the earlier work by bringing together the roles of uncertainty due to SPI and the size distributions of income in a model based on the intertemporal utility maximizing behavior of income-receiving units in different income groups. For our empirical work we have identified three income groups, low, middle and high, as the lowest 40, 40 to 80, and top 20 percentiles, respectively, of the size distribution of gross domestic product (GDP).[2]

We obtain a number of results which include: SPI has considerable explanatory power in the consumption function; APC and SPI are directly related; relative to the consumption propensities (both average and marginal) of the high-income group, those of the low-income group are much higher while those of the middle-income group are slightly lower; the level of SPI is dependent on the income groups' shares of GDP; given the dependence of SPI on income distribution and the role of SPI in the consump-

1 Our earlier research based on the this premise is reported in Venieris and Gupta (1986); Stewart and Venieris.

2 We warn the reader not to think "middle class" upon reading "middle income group." Indeed, a middle class may not exist in some of the sample countries.

tion function, more equal income distributions may be associated with lower aggregate consumption propensities.

In the next section we develop the theory that yields our APC function. In Section III we describe the data for our 50-country sample, and we present estimates of the APC function under a number of coefficient restrictions. In Section IV we present and estimate the SPI function and analyze the comparative-static implications of alternative income-distribution scenarios and in Section V we summarize our findings.

II. Theoretical Development

For each income group, *i*, we assume that the consumers' homogeneous tastes are represented by a utility function defined over present (c_1) and future (c_2) consumption, u (c_1, c_2), which is characterized by all the usual properties. In the present, current income (y_1) and assets (a), representing past accumulation, are known with certainty, but future income (y_2) and the effective rate of return (r) are not. The consumers' views of these unknowns are represented by independent subjective probability density functions $f(y_2)$ and $g(r)$. Consumers are assumed to choose the handle (c_1*, c_2*) that maximizes expected utility subject to the constraint $c_2 = y_2 + (1+r)(y_1 - c_1 + a)$. Excluding corner solutions, the chosen c_1* must satisfy the first-order condition $E\ (u_1-(1+r)u_2)\ = 0$.[3]

Thus, present consumption of the *i*-th group will be a function of its present income, assets, and the parameters of the density functions for its future income and the effective rate of return. It follows that c_1* will be affected by changes in the probability distributions. In particular small changes in c_1* can be expressed as a linear function of changes in the means and dispersions of the random variables r and y_2.[4] However, without assuming more

[3] The utility subscripts denote partial derivatives, and

$$E(\bullet) = \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} (\bullet)\, f(y_2)g(r)dy_2dr.$$

[4] The expression is derived from the total differential of the first-order condition with $dy_1 = 0$ and with dy_2 and dr expressed in terms of differentials of shift (*e* and *f*) and spread (θ and Φ parameters of their respective distributions in the manner of Sandmo. We obtain

than risk aversion, all but one of the coefficients have indeterminant signs. Thus, we have an income group's present consumption depending on its perception of the future, so that a change of perception that affects both the expected values of the random variables and the degrees of uncertainty that relate to these expectations (dispersions) causes an indeterminant change in present consumption. Given our introductory comments, we wish to relate these consumers' perceptions about the future to the current level of SPI. To accomplish this, we assume that the expected values and dispersions of y_2 and r are functions of SPI through the dependence of the shift and spread parameters of their density functions on this variable. This leads to the conclusion that c_{1i} itself depends on SPI. Thus, we write

$$(1) \quad c_{1i} = c^i(y_{1i}, a_i, SPI).$$

Hereafter only present consumption appears explicitly, so we drop the time subscript.

The indeterminacy referred to earlier leaves the sign of $\partial c_i/\partial SPI$ ambiguous regardless of how SPI affects the subjective probability distributions. Nevertheless, because it is at the heart of our thinking, we believe it reasonable to suppose that in each income group an increase in SPI would lower E(r) and increase the dispersions of both r and y_2. The impact on the expected value of future income seems less clear and might differ from one income group to the next.

To obtain an empirically useful expression we assume that the 2nd and higher degree terms of the Taylor series expansion of c_i are negligible. Thus, equation (1) becomes

$$(2) \quad c_i = \alpha_i + \beta_i a_i + \gamma_i y_i + \delta_i SPI.$$

$$-Hdc_1 = Z_e de + Z_\theta d\theta + Z_f df + Z_\Phi d\Phi$$

$$\text{where } H = E\{u_{11} - 2(1+r)u_{12} + (1+r)^2 u_{22}\} < 0$$

$$Z_e = E\{u_{12} - (1+r)u_{22}\}$$

$$Z_\theta = E[(y_2 - \bar{y}_2)\{u_{12} - (1+r)u_{22}\}]$$

$$Z_f = (y_1 - c_1)\, E\{u_{12} - (1+r)u_{22}\} - E(u_2)$$

$$Z_\Phi = (y_1 - c_1)\, E[(r - \bar{r})\{u_{12} - (1+r)u_{22}\}] - E\{(r - \bar{r})u_2\}$$

Assuming $\beta_i > 0$ and $0 < \gamma_i < 1$, equation (2) resembles consumption functions proposed by others (e.g. Houthakker and Taylor). If $y_i = c_i + s_i$ and $s_i = \dot{a}_i$, where s_i is the saving of the i-th income group, then equation (2) implies the differential equation[5]

$$\dot{c}_i + \beta_i c_i = \gamma_i \dot{y}_i + \beta_i y_i + \delta_i \dot{SPI}.$$

If similar to Swamy, we assume $\dot{y}_i = P_i$, a constant, and $\dot{SPI}/SPI = \beta_i/\mu_i$, then

$$(3)\quad c_i = y_i + A_{0i} e^{\beta_i t} - \{(1-\gamma_i)/\beta_i\}\dot{y}_i + \delta_i SPI/(1+\mu_i)$$

solves the differential equation where

$$A_{0i} \equiv \alpha_i + (1-\gamma_i)\ \{(P_i/\beta_i) - y_i(0)\}\ +\ \mu_i \delta_i SPI(0)/(1+\mu_i).$$

Then from equation (3) we have an expression for the i-th income group's APC, i.e.

$$(4)\quad (c/y)_i = 1 + A_{0j} e^{\beta_i t}/(y_i(0) + p_i t)\ (1-\gamma_i)(\dot{y}/y)_i/\beta_i$$
$$+ \delta_i SPI/\{y_i(0) + p_i t\}(1+\mu_i).$$

We would normally think of the long-run APC being defined by this expression in the limit as $t \to \infty$. But in the long-run so defined we would expect all uncertainties associated with SPI to vanish. Indeed, that is what happens here since

$$\lim_{t \to \infty} (c/y)_i = 1 - (1-\gamma_i)(\dot{y}/y)_i/\beta_i,$$

which is equivalent to Swamy's long-run savings function. Moreover, this long-run is not consistent with our underlying uncertain future – certain present 2-period model. Therefore, here we shall be concerned with some finite period of adjustment and evaluate equation (4) at some $t = T$. Doing so yields the linear relation

$$(5)\ (c/y)_i = b_{0i} + b_{1i}(\dot{y}/y)_i + b_{2i} SPI$$

where theoretically $b_{1i} < 0$ while b_{0i} and b_{2i} are of indeterminate

[5] The dot denotes the derivative with respect to time.

signs. Aggregating over the income groups in a country so that $c = \Sigma_i c_i$ and $y = \Sigma_i y_i$, it follows that

$$(6)\ c/y = \Sigma_i g_i\,(c/y)_i = \Sigma_i b_{0i} g_i + \Sigma_i b_{1i} g_i\,(\dot{y}/y)_i + \Sigma_i b_{2i} g_i \mathrm{SPI}$$

where $g_i = y_i/y$ is the share of GDP received by the i-th income group. Because we are aware of no data on income growth by income group, we impose the restriction that $b_{1i} = b_1$ for all i.[6] Then since $\Sigma_i g_i(\dot{y}/y)_i = \dot{y}/y$, equation (6) becomes

$$(7)\ c/y = \Sigma_i b_{0i} g_i + b_1(\dot{y}/y) + \Sigma_i b_{2i} g_i \mathrm{SPI}.$$

Equation (7) is the basis of our empirical work.

III. Estimation of the Consumption Function

Our GDP share data for the three income groups defined above is taken from Fields (Table 1.2). Real GDP growth rates expressed as fractions are calculated from data in the World Bank's *World Tables 1976* except for Italy where the source is the OEEC's *Twelfth Annual Economic Review* (1961). The consumption share of GDP is taken from the Chenery-Syrquin data files (D system tape #F7047) provided to us by the World Bank, except for a half-dozen of our countries not in their sample for which we have calculated c/y from the *World Tables 1976*. To obtain our SPI values we used the discriminant function established by Venieris and Gupta (1986) from a similar country sample. Their function defines an instability discriminant score based on regime type, and the numbers of political demonstrations and deaths due to political violence.[7] We take these political event data from

6 Alternatively, one could assume $(\dot{y}/y)_i = \dot{y}/y$ for all i which implies that group shares are maintained. In this case equation (6) becomes

$$c/y = \Sigma_i b_{0i} g_i + \Sigma_i b_{1i} g_i(\dot{y}/y) + \Sigma_i b_{2i} g_i \mathrm{SPI}$$

which poses colinearity problems avoided in equation (7).

7 Venieris and Gupta's (1986) procedure is similar to that used by Adelman and Morris to construct an index of countries' development potential. They show that over 98% of the discriminable variance can be represented by the function

$$\mathrm{SPI}_{jt} = 65 \times 10^{-5}\,\mathrm{PD}_{jt} + 0.127 \ln(\mathrm{D}_{jt} + 1) + 2.84\,\mathrm{RT}_{jt}$$

where PD_{jt}, D_{jt} and RT_{jt} represent political demonstrations, deaths and regime type in country j at time t. Our SPI values are generated by this equation.

Taylor and Hudson for years through 1967 and from Taylor and Jodice thereafter.[8]

In estimating equation (7) we have used instrumental variables because it can be argued that SPI is endogenous to the development process, e.g., see Venieris and Gupta (1983).[9]

In preliminary regressions the coefficient of the contemporaneous growth rate of GDP was quite insignificant. Yet the variable is required theoretically and is significant in other studies, e.g., Ram; Leff. Thus, in the results reported below $\dot{y}/y$ represents the annual growth rate averaged over a 2- to 6-year period ending with the year contemporaneous with c/y and SPI. This period length is three years for most countries, but in varies from that for the others as dictated by data availability.

Table 1 reports our coefficient estimates for equation (7) under a number of coefficient-restrictions on the three interactive terms. We found coefficient-restriction necessary in the sense that colinearity becomes a problem when more than one interactive term is included. The first seven versions include all the ways of including only one interaction term. The consistent significance of the SPI coefficient, and improvement in $\overline{R}^2$ relative to version 8

8 The sample countries are listed with the year of the economic and SPI data. IF Fields' distribution data is for a different year or years, a second date is given:

Chad (1961, 58)
Niger (1961, 60)
Nigeria (1961, 59)
Sudan (1969)
Tanzania (1964)
Burma (1961, 58)
India (1961, 56-7)
Madagascar (1961, 60)
Morocco (1965)
Senegal (1961, 60)
Sierra Leone (1968)
Tunisia (1971)
Bolivia (1968)
Ceylon (1963)
Pakistan (1964)
S. Korea (1966)
Malaysia (1961, 57-8)
Ivory Coast (1961, 59)
Zambia (1961, 59)
Brazil (1961, 60)
Ecuador (1968)
El Salvador (1965)
Peru (1961)
Philippines (1961)
Colombia (1964)
Gabon (1961, 60)
Costa Rica (1969)
Jamaica (1961, 58)
Lebanon (1961, 55-60)
Chile (1968)
Mexico (1963)
Panama (1969)
S. Africa (1965)
Argentina (1961)
Trinidad & Tobago (1961, 57-8)
Venezuela (1962)
Greece (1961, 57)
Japan (1962)
Israel (1961, 57)
U.K. (1964)
Netherlands (1962)
W. Germany (1964)
France (1962)
Finland (1962)
Italy (1950, 48)
Norway (1963)
Australia (1967)
Denmark (1963)
Sweden (1963)
U.S. (1969)

9 The instruments used are: the GDP shares of exports and government consumption, population, per capita GNP in 1964 U.S. \$s, g_1, g_2, $\dot{y}/y$, $(\dot{y}/y)^2$, a dummy for per capital GNP > \$800, and four regional dummies for Africa, Asia, South America, and Mexico, Central America and the Caribbean.

where SPI is excluded solidly support our hypothesis that SPI is an important factor in the economic actors' intertemporal decision-making.[10] The consistently positive sign on the SPI coefficient is in agreement with the empirical results of Venieris and Gupta (1986), and Stewart and Venieris.[11]

From a comparison of $\bar{R}^2$s in Table 1 it seems that versions 2,3, and 5 do somewhat better than the others. This may imply that variation in c/y is better explained by variation in $(c/y)_1$ and $(c/y)_2$ singly or together due to SPI than by variation in $(c/y)_3$ alone or together with the APCs of one or both other income groups due to SPI. The t-values of the b_{2i} estimates also support this implication. That is, SPI may be perceived or acted upon somewhat differently by decision makers in the top 20 percentile of income than by others. The high-income group literally has more options. Nevertheless, even version 4 supports a role for SPI in this intertemporal choice.

Also of interest are the consumption propensities implied by the coefficient estimates in Table 1. These are presented in Table 2 for versions 2,3, and 5. The numbers are calculated at the sample means and are very similar for versions 1,4,6, and 7 too.[12] These results imply the poor consume a higher fraction of their income and support the early Keynesian view that redistribution from rich to poor would reduce saving. However, the slight upward tick of the propensity to consume as we pass from the middle-income group to the high-income group is contrary to what this view would lead one to expect.

10 The correctness of the coefficient restrictions can be inferred by means of a likelihood-ratio test. The log of the likelihood function for the unconstrained version of equation (7) is 65.0. Then the coefficient restrictions (the null) cannot be rejected at the 90% level for any of the first seven versions, except for version 4 where the null can be rejected at 90% but not at 95%. In contrast, the restrictions in version 8 that cause SPI to be omitted altogether are rejected at the 95% level.

11 Their saving studies are based on data where savings is measured as domestically financed investment spending rather than foregone consumption spending. Thus, close comparisons of estimated magnitudes between these studies and ours here are not meaningful. In the same vein, we should stress that our c/y variable measures the propensity to spend on consumption goods and services and not, as Blinder has noted, the theoretically correct propensity to consume these goods and services.

12 The sample means are as follows by variable: c/y, 0.6852; $\dot{y}/y$, 0.03273; SPI, 1.748; g_1, 0.1427; g_2, 0.3299; g_3, 0.5275.

Table 1

2SLS ESTIMATES OF THE CONSUMPTION FUNCTION COEFFICIENTS

Version	g_1	g_2	g_3	$\dot{y}/y$	$\sum_i g_i SPI$	$\bar{R}^2$	$\ln l$	Restrictions
1	0.9939	0.6094	0.6424	-1.129	0.02311	0.318	63.2	$b_{21} = b_{22} = b_{23}$
	(3.2)	(3.6)	(8.1)	(3.0)	(2.2)			
2	0.7241	0.6456	0.6911	-1.068	0.15949	0.336	63.8	$b_{22} = b_{23} = 0$
	(2.0)	(3.8)	(11.0)	(2.8)	(2.5)			
3	1.0196	0.5298	0.6866	-1.079	0.07192	0.339	63.9	$b_{21} = b_{23} = 0$
	(3.5)	(3.5)	(11.0)	(2.9)	(2.5)			
4	1.0829	0.6198	0.6233	-1.203	0.03780	0.294	62.3	$b_{21} = b_{22} = 0$
	(3.6)	(3.3)	(6.3)	(3.2)	(1.73)			
5	0.9207	0.5684	0.6865	-1.070	0.05052	0.340	64.0	$b_{21} = b_{22},\ b_{23} = 0$
	(3.0)	(3.7)	(11.0)	(2.9)	(2.5)			
6	1.0453	0.5994	0.6371	-1.145	0.02644	0.314	63.0	$b_{21} = 0, b_{22} = b_{23}$
	(3.5)	(3.6)	(7.7)	(3.0)	(2.1)			
7	0.9969	0.6367	0.6284	-1.164	0.03243	0.306	62.7	$b_{22} = 0,\ b_{21} = b_{23}$
	(3.2)	(3.5)	(7.0)	(3.1)	(1.95)			
8	1.2968	0.4302	0.7651	-1.387	—	0.263	60.7	$b_{2i} = 0$ for all i
	(4.6)	(2.8)	(13.0)	(3.7)				

$|t|$ statistics are shown in parentheses while all caveats as to their validity are accepted.

Table 2

PROPENSITY TO CONSUME (MPC AND APC)
BY INCOME GROUP

Version	Percentile 0 to 40	40 to 80	80 to 100
2	0.968	0.611	0.656
3	0.984	0.620	0.651
5	0.974	0.622	0.652

IV. Direct and Indirect Effects of Redistribution

Equation (7) can be used to assess the effects of different income (GDP) distributions among the three income groups on the aggregate APC. Yet, this approach would ignore the speculation that has persisted among social philosophers since Aristotle that attributes sociopolitical instability (and even revolution) to inequality of income distribution (see Bronfenbrenner). If SPI is sensitive to income distribution, then any redistribution will trigger changes in SPI which, in turn, will affect the APC.

To pursue this idea we have specified the equation[13]

$$\text{(8) SPI} = \underset{(3.8)}{\underset{2.46}{a_0}} + \underset{(2.1)}{\underset{1.277}{a_1 \ln(g_1/g_3)}} + \underset{(3.8)}{\underset{-2.917}{a_2 \ln(g_2/g_3)}} + \underset{(1.9)}{\underset{-11.9}{a_3 \dot{y}/y}}.$$

OLS estimation gives $\overline{R}^2 = 0.28$ and the coefficients and related t -statistics shown below equation (8). The equation is statistically strong and, providing it has theoretical plausibility, can be linked with equation (7) and the identity $\Sigma_{i=1}^{3} g_i = 1$ to yield the full (direct and indirect) effects of income redistributions on the APC.[14]

If we use the identity to eliminate g_1 and put equation (8) in

13 Inclusion of $\dot{y}/y$ in equation (8) is rationalized in Venieris and Gupta (1983).

14 Of course what follows are comparative-statics results. We do not model, nor could we test with our cross-section data, the dynamics of redistribution.

differential form with $d(\dot{y}/y) = 0$ we obtain

$$dSPI = (a_2/g_2 - a_1/g_1)dg_2 - \{(a_1 + a_2)/g_3 + a_1/g_1\}dg_3,$$

which when evaluated at the sample means yields

$$(9)\ dSPI = -17.79dg_2 - 5.84dg_3.$$

Now dg_i represents a change in income of group i measured as a fraction of y. Thus, for example, a transfer of 1% of GDP from the low-income to the high-income group would imply dSPI = -0.0584, and a 1% transfer from the high-income to the middle-income group would imply dSPI = -17.79 (0.01) - 5.84 (-0.01) = -0.1195. Equations (8) and (9) imply that SPI declines as the share of the middle-income group increases, regardless of the source of increase. This reflects the importance of a middle group as a source of both sociopolitical stability and instability as historians and political philosophers have long suggested. Moreover, any transfers from the low-income group reduce SPI. This may be due to their relative powerlessness and overriding concern with subsistence problems. It might also reflect Hirschman's "tunnel effect" whereby as the poor see improvements for other groups their expectations of improvement rise.

The differential form of version 2 of equation (7) is

$$(10)\ d(c/y) = (b_{02} - b_{01} - b_{21}SPI)dg_2 + (b_{03} - b_{01} - b_{21}SPI)dg_3 + b_{21}g_1 dSPI$$

where the identity has been used to eliminate dg_1. Substituting from equation (9) and evaluating at the sample means yields

$$(11)\ d(c/y) = (-0.3573 - 0.4049)dg_2 + (-0.3118 - 0.1329)dg_3$$

$$(11a)\ d(c/y) = -0.7622\ dg_2 - 0.4447\ dg_3.$$

In equation (11) the second term in each parenthesis represents the indirect effect on c/y of a change in distribution via equation (9) and the last term in equation (10).

From equations (9) and (11) our model clearly predicts that transfers to the poor from either the high- or middle-income group increases instability and reduces saving regardless of the inclusion or exclusion of the indirect effect. This result can be seen as supporting the early views regarding the opportunity costs of such redistributions (see Lindert and Williamson). However, and more importantly, our model implies that inequality-reducing redistributions that do not reduce saving are possible.

Imposing $d(c/y) \leqslant 0$ in equation (11a) yields $dg_2 \geqslant -0.583\ dg_3$. That is, as long as at least 58.3% of any transfer from the high-income group goes to the middle group, consumption will not rise. Would such a transfer be income-equalizing? There will be an increase in g_1/g_3 and g_2/g_3 would increase, but would g_1/g_2 also increase? There will be an increase in g_1/g_2 as long as $dg_1/g_1 > dg_2/g_2$ or $dg_1/dg_2 > g_1/g_2$. At the sample means $g_1/g_2 = 0.443$ and thus it can be shown that per unit transfer from the high-income group g_1/g_2 will rise as long as $dg_2 < 1/1.433 = 0.698$ — that is, as long as no more than 69.8% of any transfer from the high income group goes to the middle-income group, the redistribution would reduce inequality in the sense that group shares would converge. Thus, as long as the middle-income group's share of a transfer from the rich is between 58.3% and 69.8%, that transfer promotes equality without compromising saving.[15]

Now suppose the indirect effect were ignored. That is, assume redistribution has no effect on SPI and the last term in equation (10) vanishes. Then equation (11) would read

$$d(c/y) = -0.3573\ dg_2 - 0.3118\ dg_3.$$

Imposing the restriction $d(c/y) \leqslant 0$ would then imply $dg_2 \geqslant -0.873\ dg_3$. Thus, to avoid an increase in consumption, the middle group would be allocated no less than 87.3% of any transfer from the rich.[16] But any such allocation would cause g_1 and g_2 to diverge. In other words, with SPI assumed constant any equality-promoting redistribution would necessarily be associated with less saving.

15 The same simulation using any other of the first seven versions of Table 1 yields similar results. For example, using vrsion 1 of Table 1, an equality-promoting, non-APC-decreasing transfer from the rich must go between 61.1% and 69.8% to the middle-income group.

16 This figure would be 91.4% for version 1.

Clearly, taking account of the connection between SPI and income distribution substantially limits the otherwise strong proposition that there is necessarily a savings-equality trade-off.

V. Summary

The preceding analysis points to following conclusions. First, the average propensity to consume and the level of sociopolitical instability are directly related. Second, relative to the consumption propensities of the high-income group, those of the low-income group are much higher while those of the middle-income group are slightly lower. The former relationship between the consumption propensities supports the Keynesian hypothesis but the latter contradicts it. Third, the level of sociopolitical instability depends on income distribution. Given the functional relationship between sociopolitical instability and income distribution a redistribution of income need not result in an increase in the aggregate propensity to consume and in fact, under a number of circumstances, may result in a decrease.

References

Adelman, I. and C.T. Morris, "Performance Criteria for Evaluating Economic Development Potential: An Operational Approach," *Quarterly Journal of Economics,* 82, May 1968, 260-280.

Blinder, A.S., "Distribution Effects and the Aggregate Consumption Function," *Journal of Political Economy,* 83, June 1975, 447-475.

Boulding, K.E., *Economic Analysis Vol. I: Microeconomics,* 4th ed., Harper and Row, New York, 1966.

Bronfenbrenner, M., *Income Distribution Theory,* Aldine-Atherton, Chicago, 1971.

Della Valle, P.A. and N. Oguchi, "Distribution, the Aggregate Consumption Function, and the Level of Economic Development: Some Cross-Country Results," *Journal of Political Economy,* 84, Dec. 1976, 1325-1334.

Fields, G.S., *Poverty, Inequality, and Development,* Cambridge Univ. Press, Cambridge, 1980.

Hirschman, A.O., "The Changing Tolerance for Income Inequality in the Course of Economic Development," *Quarterly Journal of Economics,* 87, Nov. 1973, 544-566.

Houthakker, H.S. and L.D. Taylor,

Consumer Demand in the United States: Analyses and Projections, 2nd ed., Harvard Univ. Press, Cambridge, 1970.

Keynes, J.M., *The General Theory of Employment, Interest, and Money,* Harcourt, Brace & World, New York, 1964.

Leff, N.H., "Dependency Rates and Savings Rates," *American Economic Review,* 59, Dec. 1969, 886-896.

Lindert, P.H. and J.G. Williamson, "Growth Equality, and History," *Explorations in Economic History,* 22, Oct. 1985, 341-377.

Musgrove, P., "Income Distribution and the Aggregate Consumption Function," *Journal of Political Economy,* 88, June 1980, 504-525.

Organ for European Economic Cooperation (OEEC), *Twelfth Annual Economic Review,* OEEC, Paris, Sep. 1961.

Ram, R., "Dependency Rates and Aggregate Savings: A New International Cross-Section Study," *American Economic Review,* 72, June 1982, 537-544.

Sandmo, A., "Capital Risk, Consumption and Portfolio Choice," *Econometrica,* 37, Oct. 1969, 586-599.

———, "The Effect of Uncertainty on Saving Decisions," *Review of Economic Studies,* 37, July 1970, 353-360.

Stewart, D.B. and Y.P. Venieris, "Sociopolitical Instability and the Behavior of Savings in Less-Developed Countries," *Review of Economics and Statistics,* 67, Nov. 1985, 557-563.

Swamy, S., "A Dynamic Personal Savings Function and Its Long-Run Implications," *Review of Economics and Statistics,* 35, Feb. 1968, 111-116.

Taylor, C.L. and M.C. Hudson, *World Handbook of Political and Social Indicators,* 2nd ed., Yale Univ. Press, New Haven, 1972.

Taylor, C.L. and D.A. Jodice, *The World Handbook of Political and Social Indicators, Vol. 2,* 3rd ed., Yale Univ. Press, New Haven, 1983.

Venieris, Y. P. and D. K. Gupta, "Sociopolitical and Economic Dimensions of Development: A Cross-Section Model," *Economic Development and Cultural Change,* 31, July 1983, 727-756.

———, "Income Distribution and Sociopolitical Instability as Determinants of Savings: A Cross-sectional Model," *Journal of Political Economy,* 94, Aug. 1986, 873-883.

World Bank, *World Tables 1976,* The Johns Hopkins Univ. Press, Baltimore, 1976.