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# INCOME DISTRIBUTION IN THE UNITED STATES

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*Political action has affected postwar income distribution in the United States mainly through policy-induced variations in macroeconomic activity and government transfer benefits in proportion to total income. We present a small dynamic model of the connections among the partisan balance of power, macroeconomic fluctuations, transfer spending trends, and income distribution outcomes. The model is based on the premise that the parties have different distributional goals, and it is designed to identify how shifts in party control of the presidency and the strength of the parties in Congress have affected the distribution of after-tax, after-transfer income by influencing cyclical economic performance and the flow of resources to transfer programs. We therefore extend the "partisan theory" of macroeconomic policy to the domain of income distribution outcomes.*

Economic bases of party affiliation must be sought in [the] area of income distribution.

—George J. Stigler

Conventional democratic political action can affect significantly the distribution of economic well-being, and politically induced changes in distribution affect in turn the level of living standards experienced by individuals and classes. For these reasons political life revolves to a great degree around short-run distributional struggles.

The main empirical indicator of the distribution of economic well-being is the distribution of (measured) income. At any given time and place the observed income distribution depends on the distribution of chance events (luck), the distribution of

skills and ability (individual endowments of human capital, innate and acquired), the distribution of motivation and effort (ambition), the degree to which structural and institutional arrangements permit the transmission from generation to generation of earlier distributions (the rigidity of the class system), the macroeconomic environment (business cycles and the degree of economic "slack"), and government social and economic policies (see Becker 1967; Bowles 1972; Jencks et al. 1972; and Mincer 1974). Government policy influences distributional outcomes in at least three ways.

First, government regulations (tariffs, quotas, legislated barriers to market entry and market competition, etc.) and targeted tax and credit policies may profoundly advantage those engaged in the favored activities. Aside from tax prefer-

ences geared to and exploited by high-income classes, however, such micro-economic policies generally do not affect inequality by systematically conferring benefits on some income classes at the expense of others. Redistributions from this quarter are largely arbitrary and not related to the preexisting size distribution of income. (For many examples, see Tullock 1983.)

Second, government macroeconomic policy (aggregate fiscal thrust and the aggregate supply of money and credit) affects distributional outcomes indirectly by influencing cyclical macroeconomic activity. Empirical work shows that lower unemployment and higher growth rates, in addition to raising aggregate national income, reduce both inequality and outright poverty. Empirical evidence also indicates that increased inflation, which often accompanies cyclical expansions, is largely neutral with respect to inequality of income distribution and erodes the wealth position of (the highest) income classes holding financial capital (Blank and Blinder 1986; Blinder and Esaki 1978; Hibbs 1987, chaps. 2, 3).

Finally, government directly affects income distribution through income- and employment-contingent taxes and transfers. Throughout the postwar period effective federal tax rates on personal incomes have been only mildly progressive (somewhat less so after the changes achieved by President Reagan than before); so the federal tax system has made, at most, a modest contribution to after-tax equality. The personal tax system as a whole is essentially proportional (see Pechman 1985).

Most of the government's direct influence on income inequality is exerted by federal transfer spending programs, notably social security (OSADHI), unemployment insurance (UI), Aid to Families with Dependent Children (AFDC), housing assistance, supplementary security income (SSI), food stamps, medicaid and

medicare. During the last 30 years the resources devoted to these programs have grown substantially, though at varying rates. In fact, in the United States as well as in other developed democracies, transfers account for nearly all of the growth of government expenditure in relation to aggregate income during the past quarter century. Spending on transfers to persons (inclusive of spending for in-kind transfer programs) grew from around 5% of total personal income in the early 1950s to just over 16% by the early 1980s. To be sure, several of the important transfer programs are not targeted on low-income households alone. But with the exception of UI, two-thirds or more of the benefits of the programs listed above flow to the bottom quintile of the income distribution, and all are important to the economic well-being of lower-income classes (Danziger, Haveman, and Plotnick 1981).

Politics and policy, then, systematically affect inequality of income distribution in the United States by influencing the flow of transfer spending and cyclical macroeconomic activity. We analyze how shifts in the balance of power between the parties have affected distributional outcomes during the postwar period in the United States. Specifically, we examine the response of the size distribution of after-tax, after-transfer family income to changes in unemployment and transfer spending generated by shifts in party control of the presidency and variations in the strength of the parties in Congress.

### **Party Constituencies, Voter Interests, and Party Goals**

The Democratic and Republican parties have more heterogeneous social bases and are less distant ideologically than the major parties in most advanced industrial democracies. Nonetheless, in U.S. national politics the Democratic party is indisputably the party of the "Left," with

## Income Distribution in the U.S.

differential appeal to lower-income classes; and the Republican party is just as clearly the party of the "Right," with relatively great attractiveness to upper-income classes. This is essentially as true today as it was during the late New Deal, at which time the displacement of traditional sectional politics by modern class politics was consolidated,<sup>1</sup> although, as Edsall argues, the Republicans in recent years may have become more effective in representing the interests of their upper-income constituencies (Edsall 1984).

The down-scale classes, which make up the core constituency of the Democratic party, hold human capital (their economic well-being depends primarily on earnings from labor) and tend to occupy unsheltered, lower-status jobs. Democratic supporters therefore have greater exposure to rising unemployment than Republican supporters and they normally bear a disproportionate share of the economic and broader social costs of cyclical contractions. Consequently, their relative position in the income distribution as well as their absolute level of economic well-being is typically improved by falling unemployment and tight labor markets. The Democratic constituency is also advantaged by a generous system of income- and employment-contingent transfer spending, even if such spending is financed by proportional tax levies.

Up-scale groups, which form the core constituency of the Republican party, hold the lion's share of financial capital in the household sector; and they tend to occupy higher-status, sheltered jobs. So Republican supporters absorb greater losses from extra inflation than Democratic supporters and they experience the greatest gains from disinflation. On average, the Republican constituency also loses (or benefits less than Democratic supporters) from growth-of-income transfers.

These differences in the interests of the parties' core constituencies are reflected in

the pattern of policies and outcomes observed under Democratic and Republican administrations. On the side of the macroeconomy, Democratic administrations have been more likely than Republican ones to pursue expansive policies yielding lower unemployment and extra growth but running the risk (frequently realized) of higher inflation. Republican administrations usually weight the problem of inflation more heavily. As a result they have more readily and more vigorously pursued disinflationary policies, and they have been more cautious about stimulating aggregate demand and employment.

Similarly, the parties have contrasting income distribution goals that are consistent with the locations of their core constituencies in the hierarchy of income classes. (For some opinion data on the views of party leaders and followers on income equality and redistribution see Verba and Orren 1985.) The general course of income security and redistribution spending policies during the postwar period is one of Democratic initiatives that successfully (though rather modestly) helped improve the relative position of the lower quintiles of the income distribution, followed by periods of Republican inaction or retrenchment, followed in turn by new Democratic efforts to improve equality, and so on (see Page 1983).

### **Income Distribution Measurement**

Empirical analysis of trends and fluctuations in distributional outcomes requires choice of an income distribution measure. Measurement of income inequality is a complicated matter and has been the subject of an enormous literature. (See Cowell 1977 for a good overview.) Fortunately, our purposes are well served by a very straightforward measure that follows naturally from what we

know about the incidence of government taxes and transfers and the distributional consequences of cyclical economic activity.

Income-contingent transfers, which are the main fiscal engine of government-induced redistribution, flow almost entirely to the bottom two quintiles of the pretax, pretransfer distribution. Computations by Musgrave and Musgrave (1984) and others show that the tax system is nearly proportional and that net benefits of all taxes and transfers are unambiguously positive (and progressively sloped) for the bottom two quintiles of the distribution, are quite flat or proportional over the next two quintiles, and turn progressively more negative over the top quintile. The principal redistribution achieved by the tax and transfer system is from the top 20% of the distribution to the bottom 40%.

The very same distributive effects accompany cyclical fluctuations of the macroeconomy. Empirical work shows that variations in the inflation rate are only weakly connected to fluctuations of the size distribution of income. And the associations that do exist suggest that inflation adversely affects the income share of the upper quintile relative to the shares of the bottom two quintiles. On the other hand, cyclical declines in unemployment unambiguously raise the share of the bottom two quintiles, almost exclusively at the expense of the top one. (See the sources cited previously.)

Hence, income distribution movements induced by the business cycle and the tax-transfer system consist largely of flows between the top 20% and the bottom 40% of income classes. A natural income distribution measure for our purposes, therefore, is the ratio of the posttax, post-transfer share of the top 20% of the family distribution to the posttax, post-transfer share of the bottom 40% of the family distribution.<sup>2</sup> The natural logarithm of this ratio (multiplied by 100),

which we use in the empirical analyses ahead, gives the percentage gap between the net (after taxes and transfers) income shares of the top fifth and bottom two-fifths of the family distribution. We shall frequently refer to this inequality measure as the *equality gap*.

During the period 1950–83 the average share of net income going to the top quintile was about 40% of the total family income, whereas the average net share of the bottom two quintiles was about 20%. The postwar mean of the 20-to-40 ratio is 1.97, with standard deviation .15; and the mean for the natural log of the ratio (times 100) is 67.6 (an average equality gap of 67.6%), with standard deviation 1.3. The 20-to-40 ratio of net income shares essentially contrasts the relative experience of the upper middle class and the rich to the lower middle class and the poor. It registers most of the distributional action in the underlying data on all quintile shares and at the same time corresponds nicely to the parties' core constituencies insofar as they are income-related. The "omitted quintiles," the middle 40% of the net income distribution (the broad middle classes), though tilted toward the Republicans at the upper range, are the critical battlegrounds of party competition for marginal votes.

## A Small Dynamic System for the Politics and Economics of Income Inequality

### The Proximate Determinants of Inequality

It is easy to show that the political strength of the Democrats has a significant negative statistical association with income inequality over the postwar period. This much is clear from the first two columns of Table 1, which report simple regressions (for annual data, 1950–83) of the equality gap variable just

## Income Distribution in the U.S.

**Table 1. Estimates for Income Inequality Equations, Annual 1950-83**

Variables	Regression Models				Means
	(1)	(2)	(3)	(4)	
Constant	6.42* (3.49)	16.3** (6.36)	27.7** (9.78)	24.1** (7.48)	
logI <sub>t-1</sub> (equality gap)	.912** (.05)	.868** (.05)	.624** (.11)	.640** (.09)	68.2
U <sub>t</sub> (unemployment rate)			1.90** (.49)	1.85** (.37)	5.56
Trans <sub>t</sub> (share of transfers in personal income)			-1.03** (.33)	-1.01** (.27)	10.3
Dempres <sub>t-1</sub> (Democratic presidents = 1)	-2.09** (.83)		.438 (1.02)		.47
Demcong <sub>t-1</sub> (% share of Democrats in Congress)		-.135* (.08)	-.048 (.07)		58.3
Adjusted R <sup>2</sup>	.904	.894	.931	.935	
Standard error of regression	2.36	2.47	1.99	1.94	
Method	OLS	OLS	OLS	OLS	

Note: Base model:

$$\log I_t = \alpha_0 + \alpha_1 \log I_{t-1} + \alpha_2 U_t + \alpha_3 \text{trans}_t + \alpha_4 \text{Dempres}_{t-1} + \alpha_5 \text{Demcong}_{t-1}.$$

Estimated standard errors are shown in parentheses.

\*p < .05.

\*\*p < .01.

described (denoted  $\log I$ ) on its own lagged value ( $\log I_{t-1}$ ) and a binary variable for Democratic presidential administrations (Dempres) and the average percentage share of Democrats in the Congress (Demcong),<sup>3</sup> both lagged one period. The third regression in Table 1, however, shows that these results are not structural; they merely establish statistical correlations. In the presence of unemployment ( $U$ ) and spending on transfers to persons as a percentage of gross personal income (trans), which are the two main channels by which government policy systematically affects the size distribution of income, the coefficients of Dempres and Demcong are indistinguishable from zero. Hence, the best model in Table 1 for the time path of the equality gap ( $\log I$ ) is the first-order dynamic equation in the last column

(Model 4), where fluctuations in inequality are driven by changes in unemployment and transfer spending:

$$\log I_t = \alpha_0 + \alpha_1 \log I_{t-1} + \alpha_2 U_t + \alpha_3 \text{trans}_t \quad (1)$$

The results for this equation indicate that each extra percentage point of unemployment initially raises inequality by 1.85 percentage points. Sustained indefinitely, an extra point of unemployment adds just over five points to the equality gap ( $1.85/[1 - .64] = 5.1$ ). Transfer spending also has powerful effects on income inequality. A rise of one percentage point in the transfer share of personal income closes the equality gap by about one percentage point during the first year; after all lags of adjustment the

same increase in transfer spending lowers inequality by 2.8%  $(-1.01/[1 - .64] = -2.8)$ .

Movements in unemployment<sup>4</sup> and transfer spending, with allowance for first-order dynamic adjustment, are, then, the principal proximate determinants of postwar fluctuations in the inequality of disposable personal incomes. It follows that political influence on the size distribution of income must operate through at least one of these channels. We develop first a political analysis of the unemployment channel.

### Modeling Unemployment and Inflation Time Paths

As we noted previously, the Democratic and Republican parties have different unemployment targets, denoted ahead by  $U^T$ , which are constrained by and tend to vary about a "normal" or benchmark unemployment rate, denoted  $U^N$ . Although the Democrats' constituency weights unemployment more heavily and inflation less heavily than the Republicans' constituency, few voters of any political orientation are happy with high rates of inflation (Hibbs 1987, chaps. 4, 6). Consequently, the unemployment targets of both parties become more conservative (less ambitious) as the inflation rate observed by the actors,  $P_{t-1}$ , rises. Conditional on the received inflation rate ( $P_{t-1}$ ), the unemployment target prevailing during Democratic presidential administrations typically is lower than the corresponding target during Republican administrations, which leads to the  $U^T$  equation

$$U_t^T = \beta_0 + U_t^N + \beta_1 \text{Dempres}_{t-1} + \beta_2 P_{t-1} \quad (2)$$

where, as before, Dempres is a binary variable equal to one during Democratic presidential administrations and zero during Republican administrations;  $U^N$ ,

which trends upward from 5% in the late 1950s to 6% in the late 1970s, is set equal to Robert J. Gordon's calculation of the natural unemployment rate (Gordon 1984b, Appendix B);  $P$  is the year-on-year percentage rate of change of the GNP deflator; and we anticipate that  $\beta_2 > 0$ ; and the party hypothesis requires  $\beta_1 < 0$ .

Because the macroeconomic policy machinery is largely directed by the administration rather than Congress, the party controlling the White House (Dempres), rather than the strength of the parties in Congress (Demcong), is the relevant variable for political analysis of unemployment outcomes. (This presumption is supported by empirical analysis not reported here.) The Dempres term appears with a one-period lag because the unemployment target reflected in current policies is based on the party in power during the previous period.<sup>5</sup> Hence by Equation 2 the unemployment target underlying policy during a typical Democratic administration is  $\beta_0 + U_t^N + \beta_1 + \beta_2 P_{t-1}$ , and the target during a typical Republican administration is  $\beta_0 + U_t^N + \beta_2 P_{t-1}$ . Given the behavioral lags in policy formulation, institutional lags in policy implementation and, most important, structural lags in the response of the economy to policy actions, economic goals cannot be realized immediately. Administrations are able to adjust the observed unemployment rate,  $U$ , to their preferred rate,  $U^T$ , only partially each period. The adjustment mechanism is

$$U_t - U_{t-1} = \phi(U_t^T - U_{t-1}) + \beta_3 \text{shock}_{t-1} + v_t \quad (3)$$

where  $0 < \phi < 1$ , and  $v$  is a well-behaved disturbance.

Equation 3 implies that policy-induced changes in unemployment from one year to the next are capable of closing only a fraction ( $\phi$ ) of the gap between the current target and the actual unemployment rate

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## Income Distribution in the U.S.

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observed for the previous period. Fluctuations in unemployment due to shocks exogenous to the domestic political economy, notably the energy price hikes of 1973-74 and 1979-80, are represented by the variable *shock*, which is equal to the percentage point change in the price of imported oil less the inflation rate of the GNP deflator, weighted by the net share of energy imports (imports less exports) in GNP.

Substituting Equation 2 into Equation 3 and solving for  $U_t$  yields the following nonlinear equation for the time path of unemployment:

$$\begin{aligned} U_t = & \phi\beta_0 + (1 - \phi)U_{t-1} + \phi U^N_t \\ & + \phi\beta_1 \text{Dempres}_{t-1} + \phi\beta_2 P_{t-1} \\ & + \beta_3 \text{shock}_{t-1} + v_t \end{aligned} \quad (4)$$

Equation 4 specifies the way in which political and economic forces influence income inequality via the unemployment channel of Equation 1. Estimates for this equation, which appear in the first column of Table 2 (Regression Model 5), give strong support to the party cleavage approach to modeling unemployment outcomes. (The constant  $\beta_0$  in Equation 4 was statistically insignificant and nearly zero, so it is omitted from the estimation equation in Table 2.) The rate of adjustment of unemployment to party targets ( $\phi$ ) is on the order of 38% per year (.38), which means that adjustment is almost fully realized after four to five years.

Unemployment also was affected by exogenous supply shocks. The estimate of  $\beta_3$  indicates that the OPEC supply shocks initially raised unemployment, after a one-period lag, by .8 percentage points for each GNP-weighted percentage point increase in energy prices above the domestic inflation rate. The shock variable takes peak values of 2.3 in 1974, .5 in 1979, and 1.4 in 1980 (in other periods shock is negligible); and dynamic calculations imply that the energy price hikes raised unemployment directly by about

1.8% in 1975, .9% in 1976, .4% in 1980, and 1.3% in 1981. (After 1982 declining energy prices were a source of downward pressure on unemployment.) Once allowance is made for the rises in inflation caused by the oil price increases, calculations of the shock-induced effects on unemployment would be even greater because extra inflation tends to raise the unemployment targets of administrations of either party.

Political analysis of the unemployment dynamics implied by Equation 4 requires joint consideration of the parameter for, and time path of, party control of the presidency ( $\beta_1$ ,  $\text{Dempres}_{t-1}$ ) and the parameter for, and time path of, inflation ( $\beta_2$ ,  $P_{t-1}$ ).  $\beta_1$  estimates the magnitude of the cross-party difference in unemployment targets and hence the typical impact of sustained changes in party control of the presidency on unemployment performance, *assuming everything else is held equal*. Hence, for benchmark unemployment ( $U^N$ ), external supply shocks (shock), and lagged inflation ( $P_{t-1}$ ) held fixed the results in Table 2 imply that a shift from a Republican to a Democratic administration typically would yield a decline in unemployment of about .97 percentage points ( $\phi\beta_1$ ) after the first year and about 2.6 percentage points ( $\beta_1$ ) after all adjustment lags.

For the reasons noted earlier, however, inflation prompts the parties to raise their unemployment targets, which eventually results in higher unemployment rates. The estimates in Table 2 indicate that each extra point on the inflation rate leads to a rise in unemployment of about .11 percentage points ( $\phi\beta_2$ ) after one year and, if sustained long enough, to a rise of .30 percentage points of unemployment ( $\beta_2$ ) per extra point of inflation after all lags of adjustment to party goals. Moreover, the U.S. Phillips curve tells us that higher unemployment yields lower future inflation; a connection that Robert J. Gordon aptly described as "one of the most stable



empirical macroeconomic relationships of the postwar era" (Gordon 1984a, 42). These feedback relationships—from rising inflation to higher unemployment via the implementation of party targets, and from higher unemployment to lower future inflation via the Phillips curve—mean that although  $U^N$  and shock may realistically be viewed as exogenous and held fixed when evaluating the impact of shifts in party control of the White House, the inflation rate may not. So interpreting  $\beta_1$  in isolation (by holding inflation "fixed") may give an exaggerated idea of the interparty difference in unemployment goals and performance.

Accurate evaluation of the impact of the parties on income distribution through party differences in unemployment performance requires bringing the response of inflation to unemployment (the Phillips curve) explicitly into the analysis. The standard rule-of-thumb for the U.S. macroeconomy is that each extra percentage point of unemployment, sustained a year, produces a decline in the annual inflation rate, exogenous shocks aside, of about one-half a percentage point. (By *extra unemployment*, we mean deviations of the actual rate,  $U$ , from the "natural" or nonaccelerating inflation rate,  $U^N$ .) This standard rule implies the relation

$$P_t = \alpha_1 P_{t-1} + \alpha_2 (U_t - U^N_t) + \alpha_3 \text{shock}_t \quad (5)$$

with  $\alpha_1 = 1.0$ ,  $\alpha_2 = -.5$  and  $\alpha_3 > 0$ . The regression estimates reported in the second column of Table 2 (Regression Model 6) conform almost perfectly to this stylized Phillips curve.<sup>6</sup>

Joint analysis of Equations 4 and 5 will yield appropriate estimates of the magnitudes and duration of the effects of changes in party control of the White House on the time path of unemployment and, through the unemployment channel, the effects of partisan change on the time

path of income distribution. Before pursuing this further, we first complete the system by analyzing the transfer spending channel of political influence on inequality.

### Modeling the Flow of Transfers in Personal Income

We pointed out previously that cash and in-kind transfer programs have been the government's main fiscal instruments for influencing income inequality and poverty. So the parties' transfer spending targets ( $\text{trans}^T$ ) are intimately related to their income distribution goals ( $\log I^T$ ). Indeed, in contrast to unemployment and inflation, which influence income distribution (directly in the case of unemployment, indirectly in the case of inflation because extra inflation raises party unemployment targets) but are independent objects of policy, transfer spending goals are based primarily on the distributional effects of income security programs.<sup>7</sup> At each period party spending targets are also constrained by the existing fiscal landscape, as reflected in actual transfer spending during the previous period ( $\text{trans}_{t-1}$ ). As "incrementalist" theories of budgeting have correctly emphasized (the seminal contribution being Davis, Dempster, and Wildavsky 1966), spending goals are not formed *de novo* each period; any given stock of spending tends to get "locked in"—or at least to exhibit considerable inertia—which imparts an upward bias to spending in relation to gross income. Accordingly, the transfer spending target embodied in current policy is

$$\text{trans}^T_t = \delta_0 + \delta_1 \log I^T_t + \delta_2 \text{trans}_{t-1} \quad (6)$$

where  $\log I^T$  denotes the prevailing target for the equality gap variable introduced previously and, as before,  $\text{trans}$  (actual transfer spending) and  $\text{trans}^T$  (transfer

## Income Distribution in the U.S.

spending targets) are expressed as percentage shares of aggregate personal income, inclusive of in-kind benefits.

By Equation 6, transfer spending goals, after allowing for the constraining influence of the received level of transfer expenditures ( $\delta_2 \text{trans}_{t-1}$ ) and a scaling constant ( $\delta_0$ ), are proportional to the prevailing inequality target. Other things equal, the higher the prevailing target for income inequality (which, as we indicate below, depends on the balance of political forces), the lower the prevailing target for transfer spending in relation to total personal income. Clearly, the theory requires that  $\delta_1$  be less than 0 in the transfer spending equation. The quantity  $\delta_2$ , which weights the constraining influence of existing transfer spending on the formation of policy targets, should lie in the interval  $0 < \delta_2 \leq 1$ . And, for  $\delta_2 < 1$ ,  $\delta_0$  should be greater than 0.

The Democrats, as we argued earlier, aim for a more egalitarian distribution of income than the Republicans; in other words, they generally push for a smaller equality gap,  $\log I$ . In principle, the magnitude of the inequality target underlying current transfer spending policy might depend on both the party controlling the White House (Dempres = 1 denoting Democratic control) and the strength of the parties in Congress (Demcong being the average share of Democratic seats in the House and Senate). But neither party seriously entertains "pie-in-the-sky" income distribution goals; at every period the formation of inequality targets is constrained by the income distribution observed in the previous period,  $\log I_{t-1}$ . These ideas underlie the equation for the income distribution target reflected in policy:

$$\log I_t^T = \pi_0 + \pi_1 \text{Dempres}_t + \pi_2 \text{Demcong}_t + \pi_3 \log I_{t-1} \quad (7)$$

The party cleavage or partisan model implies that  $\pi_1, \pi_2 < 0$ , and that the coef-

ficient scaling the constraining impact of the observed income distribution should fall in the interval  $0 < \pi_3 \leq 1$ .  $\pi_0 > 0$  allows for the possibility that  $\log I_t^T > \log I_{t-1}$ .

U.S. institutional arrangements make it impossible to move actual transfer spending instantly into line with policy goals. Moreover, no matter what the current partisan balance of power and prevailing transfer spending target, transfers will respond automatically to recent changes in the rate of unemployment because of preexisting provisions of unemployment insurance and other employment- and income-contingent transfer programs. (In the longer run the responsiveness of transfers to the business cycle may of course be changed by political action.) For these reasons, we specify a first-order, partial adjustment-to-target equation for movements in actual spending that includes recent changes in unemployment rates:

$$\begin{aligned} \text{trans}_t - \text{trans}_{t-1} &= \Theta(\text{trans}_t^T - \text{trans}_{t-1}) + k_1 dU_t \\ &+ k_2 dU_{t-1} + e_t \end{aligned} \quad (8)$$

where  $\Theta$  represents the fraction of the gap between transfer spending targets and actual transfer spending in the previous period that is closed each year;  $dU$  the first backward difference of unemployment ( $U_t - U_{t-1}$ ); and  $e$  a well-behaved stochastic disturbance. The model implies  $k_1$  and  $k_2 > 0$  and that  $\Theta$  should take a value in the interval  $0 \leq \Theta \leq 1$ .

Substituting the inequality target ( $\log I^T$ ) given by Equation 7 into Equation 6 and substituting the resulting equation for transfer spending targets,  $\text{trans}_t^T$ , into Equation 8 yields

$$\begin{aligned} \text{trans}_t &= \Theta(\delta_0 + \delta_1 \pi_0) \\ &+ (1 - \Theta + \Theta \delta_2) \text{trans}_{t-1} \\ &+ \Theta \delta_1 \pi_1 \text{Dempres}_t \\ &+ \Theta \delta_1 \pi_2 \text{Demcong}_t + \Theta \delta_1 \pi_3 \log I_{t-1} \\ &+ k_1 dU_t + k_2 dU_{t-1} + e_t \end{aligned} \quad (9)$$

It is obvious from Equation 9 that only composite parameters may be estimated. The estimation equation that follows naturally from Equation 9, however, preserves the signs of political effects anticipated by the underlying theory:

$$\begin{aligned} \text{trans}_t &= \pi_0^* + \Theta^* \text{trans}_{t-1} \\ &+ \pi_1^* \text{Dempres}_t + \pi_2^* \text{Demcong}_t \\ &+ \pi_3^* \log I_{t-1} + k_1 dU_t \\ &+ k_2 dU_{t-1} + e_t \end{aligned} \quad (10)$$

where  $\pi_0^* = \Theta(\delta_0 + \delta_1\pi_0)$ ;  $\Theta^* = (1 - \Theta + \Theta\delta_2)$ ;  $\pi_1^* = \Theta\delta_1\pi_1$ ;  $\pi_2^* = \Theta\delta_1\pi_2$ ; and  $\pi_3^* = \Theta\delta_1\pi_3$ . Given the theoretically required signs of  $\Theta$ ,  $\delta_1$ ,  $\delta_2$ ,  $\pi_1$ ,  $\pi_2$ , and  $\pi_3$  in Equations 6-8, the anticipated signs of the composite parameters in Equation 10 are  $0 < \Theta^* \leq 1$ ,  $\pi_1^* \geq 0$ ,  $\pi_2^* \geq 0$  and  $\pi_3^* < 0$ . (The sign of  $\pi_0^*$ , though likely to be positive, is indeterminate.) Although individual parameters in target and adjustment equations cannot be estimated from observables, it is clear from Equation 10 that political pressure to raise transfer spending, net of recent movements in unemployment (which, as we shall see ahead, is an important qualification), is greatest when the partisan balance favors the Democrats. (For quantitative analyses of spending appropriations and spending trends that include partisan variables, see Browning 1985 and Kiewiet and McCubbins n.d.).

Estimates for two variants of the transfer spending equation appear in the last two columns of Table 2 (Regression Models 7 and 8). The regression results, as anticipated, show that the transfer spending share of personal income responds systematically to economic contractions and expansions. A transitory, one-year jump in the unemployment rate directly raises transfer spending over two years, with most of the effect coming during the first year (.45 as compared to .16). And cyclical expansions lower the transfer share by an equivalent magnitude per

point of declining unemployment. Steady rates of unemployment have no influence on the flow of transfers in relation to personal income, though any sustained shift in the level of unemployment has a prolonged effect on the stock, or level, of transfers in personal income via the lagged feedback term, .92  $\text{trans}_{t-1}$ .

It is also clear from the empirical results that the strength of the Democrats in Congress is the main direct source of politically induced increases in the share of transfers in gross personal income. Although the major income security programs were promoted by and established during Democratic presidential administrations, changes in the resources devoted to these programs, once they were in place, were driven by the congressional strength of the Democrats. Shifts in party control of the presidency had negligible direct influence.

It is important to recognize, however, that our conclusion that changes in party control of the White House typically have little *direct* influence on spending trends is conditional on unemployment fluctuations. Indeed, to the degree that unemployment rises under Republican administrations and falls under the Democratic administrations (Regression Model 5 of Table 2) at any given partisan balance of power in Congress one would tend to observe *positive* statistical correlations between Republican control of the White House and spending as a fraction of aggregate income, because recessions increase the pool of eligible transfer recipients and at the same time shrink total income and output. Consequently, policy-induced contractions yielding extra unemployment may be an important indirect channel by which transfer spending rises during Republican presidencies.

Finally, the estimates for the lagged equality gap term ( $\log I_{t-1}$ ) in regression Models 7 and 8 of Table 2 show that transfer spending tends to fall with increases in income inequality, after a one-

## Income Distribution in the U.S.

**Table 2. Estimates for Unemployment ( $U$ ), Inflation ( $P$ ), and Transfer Spending (trans) Equations, Annual 1950-83**

Variables	Regression Models				Means
	$U$ (5)	$P$ (6)	trans (7)	trans (8)	
$\pi_0^*$			2.22 (1.60)	2.02 (1.52)	
$\phi$ ( $U_{t-1}, N^N$ ) ( $U_t - U_t^N$ )	.379** (.11)				5.53 ( $U^N$ ) .04
		-.517** (.09)			
trans $_{t-1}$			.917** (.029)	.919** (.027)	
Dempres $_{t-1}$	-2.60** (.86)		.041 (.18)		.47
Demcong $_{t-1}$			.024* (.014)	.026* (.011)	58.3
logI $_{t-1}$ (equality gap)			-.038** (.015)	-.036** (.013)	68.2
$P_{t-1}$ (inflation rate)	.296** (.12)	.987** (.03)			4.0
shock $_t$ (in % of GNP)		1.64** (.31)			.11
shock $_{t-1}$	.791* (.35)				
$dU_t(U_{t-} - U_{t-1})$			.450** (.060)	.448** (.058)	.17
$dU_{t-1}$			.170** (.061)	.163** (.051)	
Adjusted $R^2$	.757	.884	.992	.992	
Standard error of regression	.853	.871	.349	.344	
Method	nonlinear LS	AR1 rho = -.51** (.17)	OLS	OLS	

Note: Models:

$$U_t = (1 - \phi)U_{t-1} + \phi U_t^N + \phi\beta_1 \text{Dempres}_{t-1} + \phi\beta_2 P_{t-1} + \beta_3 \text{shock}_{t-1}$$

$$P_t = \alpha_1 P_{t-1} + \alpha_2 (U_t - U_t^N) + \alpha_3 \text{shock}_t$$

$$\text{trans}_t = \pi_0^* + \Theta^* \text{trans}_{t-1} + \pi_1^* \text{Dempres}_{t-1} + \pi_2^* \text{Demcong}_t + \pi_3^* \log I_{t-1} + k_1 dU_t + k_2 dU_{t-1}$$

Estimated standard errors are shown in parentheses; inflation equation excludes Korean War period.

\*p < .05.

\*\*p < .01.

period lag. Although this result is consistent with the theoretical derivation of the model presented earlier, it may at first seem counterintuitive. Remember, though, that inequality targets are proportional (positively) to the actual income distribution observed the previous period. Hence, at a given balance of power between the parties, a downward shift in observed inequality leads to more ambitious (egalitarian) distribution goals, which in turn lead to higher transfer spending. In a sense the model implies that nothing succeeds like success: transfer efforts that successfully reduce the equality gap help sustain future transfer spending. The dynamic works just the opposite way for upward movements in inequality.

Moreover, the response of transfer spending to inequality outcomes augments the direct impact on spending trends of the Democrats' strength in Congress. Higher Democratic congressional strength tends to push up transfer spending because, other things equal, Democrats entertain a lower inequality target than Republicans. In turn, higher spending directly lowers income distribution inequality, which leads to more ambitious income distribution goals and fuels continued higher spending in subsequent periods. Here, as previously, it is apparent that we cannot accurately gauge the quantitative effects (and in some cases even the qualitative effects) of political and economic events on income inequality by looking at the equations of the model individually. They must be analyzed as a system.

### Numerical Analysis of the System

The equations developed in the last section represent a small dynamic system of the politics and economics of income distribution in the postwar United States.

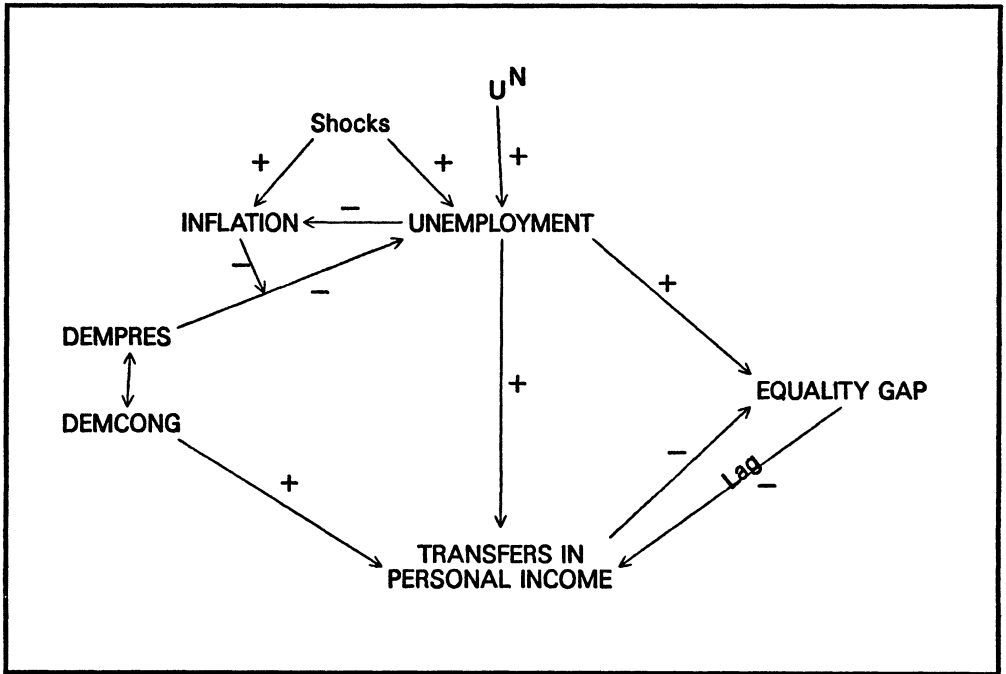
Unemployment, inflation, transfer spending, and inequality are determined endogenously, and they are driven politically by the party controlling the White House and the partisan balance in Congress. External economic shocks and changes in the natural rate of unemployment, which lie beyond the control of conventional policies, also affect the macroeconomy (directly) and spending and inequality (indirectly). Figure 1 illustrates the structure of the system and shows the estimated equations used to analyze its dynamics. The Appendix presents further statistical tests of the central causal assumptions of the model and of its robustness for partisan presidential periods.

We saw from regression Model 4 in Table 1 that both the rate of unemployment and the share of transfers in personal income have powerful effects on inequality of income distribution over time. These are the main channels by which party politics affects distributional outcomes. The discussion associated with Models 5 and 6 in Table 2 showed that estimation of political influence on inequality via the unemployment channel required building inflation explicitly (endogenously) into the system. And Models 5 and 7 in Table 2 implied that the parties indirectly affect income distribution through partisan-based movements in unemployment rates and directly affect inequality by influencing transfer spending flows. Clearly, estimation of the ultimate impact of political forces on income inequality requires that we take account of these various direct, indirect, and feedback lines of influence by analyzing the equations explicitly as a system. This is most conveniently accomplished by dynamic simulation of the estimated equations.

Since the natural rate of unemployment and external supply shocks are incidental to our purposes (though it was necessary to include these variables in the regres-

## Income Distribution in the U.S.

**Figure 1. The Politics and Economics of Personal Income Inequality**



Note: These are the estimated equations of the model:

$$U_t = (1 - .38) U_{t-1} + .38 U_t^N - 2.6 * .38 \text{Dempres}_{t-1} + .38 * .30 P_{t-1} + .79 \text{shock}_{t-1}$$

$$P_t = .99 P_{t-1} - .52 (U_t - U_t^N) + 1.64 \text{shock}_t - .51 e_{t-1}$$

$$\text{trans}_t = 2.02 + .92 \text{trans}_{t-1} + .026 \text{Demcong}_t - .036 \log l_{t-1} + .45 dU_t + .16 dU_{t-1}$$

$$\log l_t = 24.1 + 64 \log l_{t-1} + 1.85 U_t - 1.0 \text{trans}_t$$

$U$ : unemployment rate, civilian labor force

$dU$ :  $U_t^{-1} U_{t-1}$

$P$ : year-on-year percentage rate of change of GNP deflator

$\text{trans}$ : transfers to persons as a percentage share of aggregate personal income (inclusive of in-kind benefits)

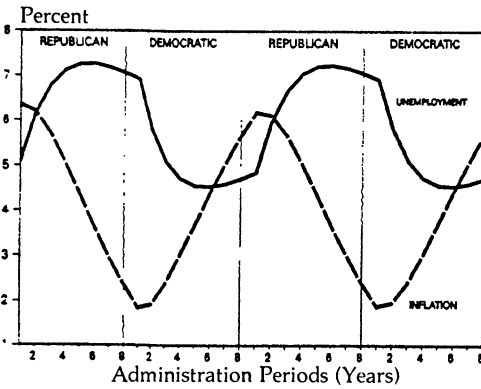
$\log l$ : natural log (times 100) of the ratio of the income share of the top quintile to the lowest two quintiles of the family distribution, inclusive of taxes, cash, and in-kind transfers and the imputed value of unreported income

$\text{shock}$ : annual inflation rate of energy prices less inflation rate of GNP deflator weighted by net share (imports over exports) of energy in GNP

$\text{Dempres}$ : 1 during Democratic presidential administrations, 0 otherwise

$\text{Demcong}$ : average percentage share of Democratic seats in the House and Senate

**Figure 2. Unemployment and Inflation under the Parties**



sions to secure unbiased estimates of parameters), they are not varied in the dynamic calculations. Shock is kept at zero, and  $U^N$  is held at 6%—Robert J. Gordon’s estimate of the natural rate of unemployment for the mid-1970s and after. The simulation calculations therefore do not reflect the one-percentage-point rise in  $U^N$  from the 1950s to the 1970s. (Given recent declines in the relative numbers of teenagers in the labor force, computations of  $U^N$  for the last half of the 1980s, which lies beyond our estimation range, show a decline from the 6% natural rate prevailing earlier. In fact, recent estimates of the natural rate suggest that it fell from approximately 6% in 1980 to approximately 5.2% by 1984.) Because neither party has held the presidency for more than two terms in succession in the postwar period, we analyze the system for eight-year cycles of party control of the White House. The strength of the parties in Congress is evaluated at “high,” “average,” and “low” values corresponding to postwar experience. Initial conditions for endogenous variables are based on their average values for the early 1950s.

**Macroeconomic Cycles under the Parties**

Figure 2 shows the time path of un-

employment and inflation for two pairs of eight-year regimes of Republican and Democratic control of the presidency. The strength of the parties in Congress does not enter the story here because, as we pointed out earlier, macroeconomic policy lies primarily under the control of the executive branch. Since the equations underlying these results are stripped of random shocks, supply shocks, and macroeconomic influences beyond the control of conventional economic policy, the time paths graphed in the figure, unlike “real world” outcomes, are quite smooth. Yet they reveal the fundamental influence of differences in the parties’ economic goals and priorities on postwar unemployment and inflation performance.

Two features of the results are immediately apparent. First, the unemployment and inflation cycles observed under the two-term presidential regimes are stable. Neither economic variable exhibits the sort of unbounded growth or decline that (in this case) would be a sure sign of a poorly specified model. Second, the peak interparty differences in unemployment performance occur several years before the end of each eight-year stretch of party control of the White House. Under the typical Democratic presidency, unemployment falls steadily (at a declining rate) over the first six years, bottoms out at a value just above 4.5%, and then begins to creep upward toward the end of the second presidential term. Unemployment rises steadily (again, at a declining rate) over the first six years of the typical two-term run of Republican presidents, reaches a peak value of about 7.25%, and then declines over the last few years of the second term.

The response of inflation to unemployment in the economic system combined with the sensitivity of party unemployment goals to inflation in the political system underlie these characteristic unemployment time paths. Falling unem-

## Income Distribution in the U.S.

ployment under Democratic presidencies yields rising inflation, which eventually prompts reevaluation and relaxation of unemployment goals. This usually occurs as the inflation rate approaches 5%. The reverse process tends to work during Republican regimes. As inflation falls to 3% in response to rising unemployment, the desire to create still more slack dissipates, policy changes course, and unemployment begins to decline somewhat. These inflation-induced shift points in the parties' unemployment goals and performance, implied by the model and illustrated in Figure 2, closely track Hibbs's independent estimates, obtained from opinion survey data, of the macroeconomic configurations underlying shifts in the electorate's relative concern about the problems of inflation and unemployment (Hibbs 1987, chap. 4).

Viewed from the end of one eight-year partisan regime to another, the results graphed in Figure 2 indicate that the difference between the unemployment performance of the typical Democratic and Republican administration is about two percentage points, again assuming a steady natural rate of 6% and no supply shocks. The corresponding difference for inflation performance is just over four percentage points. The difference in the parties' unemployment performances would dwindle to much smaller proportions (and for a completely accelerationist inflation equation would vanish completely), and the difference in inflation performance would become larger, if we analyzed the implications of the model for much longer stretches of party control of the White House. But neither party has held the White House for more than eight years in the postwar era, and so no political-economic model can yield reliable empirical estimates of the likely consequences of prolonged runs of party control of the presidency for economic performance. (On the issue of duration see also Alesina and Sachs n.d.; Alt 1985;

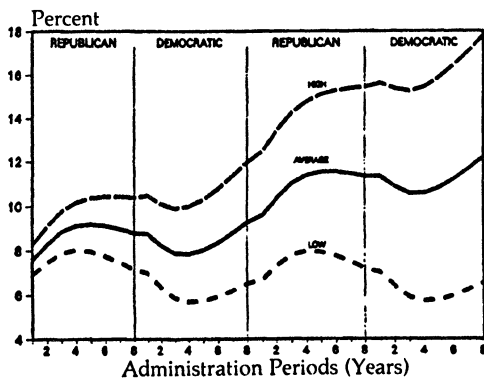
Chappel and Keech 1986a, 1986b; and Hibbs 1977, 1986, and 1987.)

Naturally the stylized results shown in Figure 2 for the macroeconomic consequences of shifts in control of the presidency (that is, shifts in control of the macroeconomic policy machinery) do not conform precisely to observed performance under any particular Democratic or Republican presidential administration. But they do give a realistic idea of the characteristic macroeconomic cycles, net of external shocks and stochastic variation, that accompany change in partisan control of the White House. And as we pointed out earlier, such party-based differences in economic performance have important consequences for transfer spending flows and income distribution outcomes.

### Trends in Transfer Spending under the Parties

Figure 3 graphs trends in transfer spending in percentage of aggregate personal income under the parties. The figure illustrates the time path of transfer spending under Democratic and Republican presidential administrations at different levels of the party balance of power in

**Figure 3. Transfer Spending in Percentage of Personal Income under the Parties**





Congress. Party strength in Congress is varied at "average," "high," and "low" values, corresponding to the postwar mean and deviations of plus- and minus-one standard deviation from the mean, respectively.<sup>8</sup> As before, results for two stretches of eight-year party regimes, or thirty-two years of stylized political-economic history, are shown. And, also as before, the simulations are fully dynamic and are based on all relevant equations in the recursive system (the unemployment and inflation equations, the endogenous effect of lagged inequality, and the transfer spending equation itself). The initial condition for lagged spending is based on the average transfer spending rate of the early 1950s.

The vertical distances between the calculated time paths in Figure 3 show the response of transfer spending over time to shifts in Democratic strength in Congress by the party holding the White House. An increase in the Democrats' share of seats in Congress yields upward pressure on spending, which in turn puts downward pressure on inequality. Any decrease in inequality prompts more ambitious equality targets than otherwise would have been the case and consequently higher spending than otherwise would have been the case in subsequent periods. In this way the impact of a shift in Democratic congressional strength is magnified in future periods. The process works in reverse for a sustained downward shift in Democratic congressional strength; the impact on spending is magnified in a negative direction over subsequent periods. But one should not take the magnitudes of the time magnifications shown in the figure literally, because the congressional balance of power has never been at "high" or "low" values for very long periods.

The results in Figure 3 also indicate that when the Democrats are at average or above average strength in Congress,

transfer spending in percentage of personal income tends to trend upward, no matter which party controls the White House. In fact, experiments not graphed here show that when unemployment is held fixed at the natural rate, which excludes the impact of shifts in party control of the presidency from the model, transfer spending begins to trend upward when the Democrats' congressional seat share exceeds 53%-54%. Democratic congressional strength in the vicinity of 53%-54% appears to be a critical political threshold for increasing transfer efforts. Since the Democratic seat share in Congress averaged about 58% over 1950-83, the broad upward trend of spending under the "average" and "high" scenarios shown in Figure 3 corresponds, as it should, to actual postwar developments (transfer spending in gross personal income rose from around 6% in the mid-1950s to just above 15% in the early 1980s).

Indeed, the only significant decline in transfer spending in relation to personal income during the postwar period occurred from 1950 to 1952, when the spending share fell by almost two percentage points. This decline was fueled by the unusually low Democratic congressional strength of the period (the Democrats were even weaker in 1953-54 when the Republicans gained numerical majorities in both the House and Senate) and the coincident decline in unemployment under Truman. In Figure 3 this scenario (the only situation in the model—and in the real world—in which the transfer spending share of personal income actually falls significantly) is illustrated by the time path of spending during Democratic presidential administrations when the Democrats are weak in Congress.

The slopes of the simulation time paths in Figure 3 give the typical growth rates of transfer spending under Republican and Democratic presidential administrations

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## Income Distribution in the U.S.

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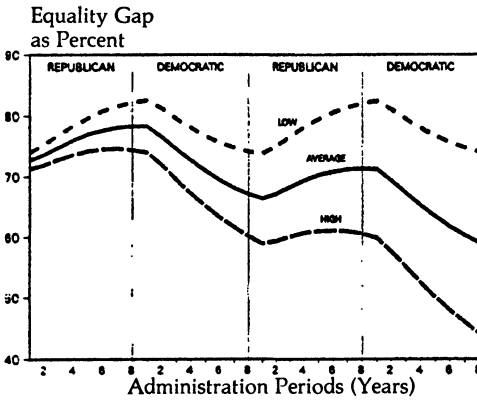
at each level of the congressional balance of power between the parties. Here we see that at any given Democratic strength in Congress, the average rate of growth of transfers in personal income over each eight-year presidential regime tends to be *higher* under Republican presidents than under Democratic presidents. (This pattern, which is consistent with postwar experience, turns up in Browning's 1985 single-equation regression analysis of the correlates of postwar welfare spending trends.) The model developed here implies that the main source of this pattern is the tendency of Republican administrations to create extra unemployment (see Figure 2 and the previous discussion), which automatically raises income- and employment-contingent transfer spending and at the same time slows the growth of aggregate income and output, thereby raising the share of spending in aggregate income.

Events during President Reagan's first three years provide a graphic example of the stylized results shown in the figure for the "low"-Democratic-congressional-strength-Republican-president scenario. The Reagan administration assumed power with greater commitment to reversing the postwar trend of social spending than any other Republican government in the modern era. The unusually low strength of the Democrats in Congress gave the President something of a golden opportunity. Yet the administration was also determined to bring inflation under control. The severe policy-induced disinflationary contraction of 1981-83, which lowered personal income and output and produced the highest unemployment rates since the end of the Great Depression, overwhelmed the administration's spending plans. The sharp economic downturn automatically raised income- and employment-contingent spending. As a result, the transfer spending share of personal income rose continuously from 1980 to 1983 (though, to

be sure, at a slower rate than would have occurred had the Democrats been stronger in Congress). The first Reagan administration did not succeed in bringing the transfer share of personal income down to the levels inherited from Carter until the last year of the president's term. (Events under Mrs. Thatcher's government in Britain illustrated the same pattern.)

The joint potency of shifts in the congressional balance of power in favor of the Democrats and rising unemployment under Republican presidential administrations is illustrated well by the events of 1973-75. Transfer spending in relation to personal income jumped more than three percentage points during these years (from 12.7% to 15.9%), the largest rise over such a short period in postwar history. (Two-thirds of the jump occurred over 1974-75.) One important reason for the spending surge was the big increase in the Democrats' muscle in Congress. Following the Watergate debacle the Democrat's share of congressional seats rose by 7.7 percentage points to 63.5%, way above their average strength under Republican presidents. All by itself, this increased pressure on spending. A second reason was the enormous rise in unemployment from 4.9% to 8.5%, though both our model and common sense suggest that only some of extra joblessness (perhaps half of the 3.5-point rise) can be attributed to the higher unemployment targets typical of Republican administrations. The rest of the increase in unemployment and therefore some of the increase in spending should be laid at the door of the first OPEC supply shock rather than partisan politics. The main message of the results shown in Figure 3, however, is that both direct and indirect channels of influence must be modeled explicitly in order to understand properly the dynamic process underlying statistical correlations among politics, economics, and policy outcomes.

**Figure 4. Income Distribution Outcomes under the Parties**



**Income Distribution under the Parties**

Our main purpose was to develop a plausible macro model, consistent with postwar empirical data, of the politics and economics of income distribution in the United States. Figure 4 graphs the impact of shifts in party control of the presidency and changes in the party balance of power in Congress on inequality of income distribution over time, as transmitted through movements in unemployment and transfer spending (shown in Figures 2 and 3). The format of the figure is the same as that used earlier, and the results are again based on a fully dynamic simulation of the estimated equations of the system.

As in Figure 3, the vertical distances between the calculated time paths in Figure 4 show the estimated response of the equality gap to changes in the partisan balance of power in Congress. We learned earlier that the congressional strength of the parties influences income distribution through the flow of funds to transfer programs in relation to the growth of aggregate personal income. And we saw that the impact of any sustained change in the partisan balance in Congress on transfer

spending tends to be magnified over time. This is why the response of inequality to shifts in the Democratic share of seats in Congress is also magnified over time. Assuming that the parties alternate in control of the White House, the calculations in Figure 4 indicate that a change of one standard deviation in the strength of the Democrats in Congress (a change, for example, of about 12 seats in the House and 5 in the Senate), sustained for 32 years, would yield changes in the equality gap that grow from around 1 percentage point in the first period to nearly 15 percentage points in the last. As in the case of transfer spending, the scale of the time magnification should not be taken literally, because neither party has experienced unusually high or low congressional strength for such a long period. Yet the calculations from the model estimates do illustrate an important dynamic tendency in the U.S. political economy.

Secular trends in income distribution outcomes shown in Figure 4 also resemble those in transfer spending discussed previously, but now we see the distributional consequences of movements in unemployment and transfer spending induced directly and indirectly by partisan change. If the Democrats were perpetually at sub-par strength in Congress, dynamic calculations of the system illustrated by the "low" simulation time path suggest that income inequality would tend to be flat over the long run, assuming that the parties oscillated in control of the presidency. In the "low" scenario the increase in the equality gap occurring over a typical two-term Republican presidency is just offset by an equivalent decline in the equality gap over a typical two-term Democratic administration. Luckily for those in the bottom quintiles of the income distribution, postwar history provides no prolonged stretch of Democratic weakness in Congress.

The first three years of President Reagan's administration (the only Reagan

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## Income Distribution in the U.S.

years for which complete data for our income distribution variable are currently available), illustrate empirically the impact of limited duration Democratic weakness in Congress under a Republican president committed to achieving substantial disinflation. The Republicans' above-average strength in Congress (particularly during Reagan's first two years) made it possible for the administration to reduce income maintenance spending well below what it would have been in a comparable economic environment with a stronger Democratic congressional presence (see Hibbs 1987, chap. 9). In conjunction with the policy-induced rise in unemployment, which was designed to attack (successfully) inflation, the assault on discretionary transfer spending helped produce a five-percentage-point rise in the equality gap (from 60.5% in 1980 to 65.8% in 1983).

Figure 4 indicates that when the Democrats are at average or above-average congressional strength, inequality tends to fall over the long run. The rise of the equality gap during Republican presidential administrations is more than countered by a larger decline during Democratic administrations. Events under President Johnson, whose party enjoyed above-average congressional strength for most of time LBJ occupied the White House, illustrate empirically the course of income distribution when the political balance runs strongly in the Democrats' favor. The Johnson administration gave high priority to achieving full employment, and the unemployment rate fell by more than two percentage points during LBJ's tenure. (Some of the decline was surely due to the escalation of the Vietnam War, but here we make no attempt to net out the war's effects.) Despite the cyclical expansion, transfer spending in relation to personal income nonetheless rose because of Democratic strength in Congress. In combination with falling unemployment, the expansion of transfer

spending produced the biggest sustained reduction of inequality in postwar U.S. history. From 1963 to 1968 the equality gap variable declined by more than 15 percentage points.

The trends from Republican to Democratic presidential administrations in the "average" congressional strength scenario track the postwar experience as a whole most closely, as they should. In the absence of supply shocks and with the natural unemployment rate fixed at 6%, the equality gap tends to rise by 4-5 percentage points under the typical two-term Republican presidential regime and to fall by around 12 points over eight years of Democratic control of the White House. If the parties oscillate in control of the presidency, as they have done over the postwar period, inequality tends to fall over the long run, which, taking in-kind benefits into account, has been the postwar empirical pattern. Despite the large increase during President Reagan's first three years, the equality gap stood about 12 percentage points lower in 1983 than it was in 1952 (65.8% versus 77.5%). And in 1980 it was 17 percentage points lower than in 1952. Twelve, or even 17 percentage points in our equality gap variable hardly amount to revolutionary movements in inequality of income distribution. Yet for those in the bottom 40% of income classes, changes of these magnitudes represented significant shifts in economic well-being.

### A Concluding Word about the Future Research Agenda

In the model presented, changes in the balance of political power between the parties are treated as exogenous to macroeconomic, spending, and distributional outcomes. In order to "close the system" and analyze more completely cyclical, as well as equilibrium, properties of the U.S.

**Table A-1. Time-Series Causality Tests**

Endogenous Variable	Test Equation		
	(1) Pure Autoregressive	(2) Autoregressive Plus Exogenous Economic	(3) Autoregressive Plus Economic and Political
Unemployment	100 (1.34)	77.8	55.0
Inflation	100 (1.78)	83.8	53.6
Transfer spending	100 (.32)		25.4
Inequality	100 (6.20)		63.5

Note: Models:  $Y_t = f(Y_{t-1}, Y_{t-2}, Y_{t-3}, \text{economic variables, political variables})$ , annual 1952-83. The residual variance from each test regression is expressed in percentage of the residual variance of the appropriate autoregressive benchmark. Actual residual variances from the purely autoregressive equations are shown in parentheses.

political economy, the partisan balance of power must be made endogenous.

We know from the literally hundreds of papers on the topic that a government's macroeconomic performance exerts important influence on electoral outcomes. Experience suggests that the Democrats have been more likely than the Republicans to get into difficulty with the voters by pursuing overly ambitious unemployment goals creating extra inflation. The Republicans, on the other hand, appear more frequently to have suffered electoral setbacks because of their enthusiasm for disinflationary bouts of economic slack. In an era when elections have increasingly turned on economic performance, such policy "overshooting" may help explain why neither party has managed to hold the U.S. presidency for more than two consecutive terms since the Second World War.

Yet, surprisingly, relatively little is known about how fiscal outcomes, or, more important, how shifts in income distribution, affect the party balance of power over time. In fact, the only paper we know of that analyzes the interdepen-

dence of distribution and political support for U.S. parties in a dynamic setting is Sprague's unpublished study, which appeared more than a dozen years ago (1975). We believe this important and neglected topic should receive high priority in future work on politics and economics in the United States.

### Appendix: Some Regression Diagnostics

Tables A-1 and A-2 present regression diagnostic tests of the central causal assumptions of the political-economic model for income distribution presented in the main text and of the robustness of the fits generated by each equation in the model for partisan presidential periods.

Table A-1 reports results from standard time-series regressions testing whether right-side variables in the model equations "Granger-cause" the left-side variables. (See Geweke 1984 for a comprehensive review of causality testing in time-series models.) The entries in this table are

## Income Distribution in the U.S.

**Table A-2. Equation Prediction Errors for Partisan Presidential Periods:  
Mean Residuals and Associated Significance Levels**

Period	Unemployment	Inflation	Transfer Spending	Inequality
<b>Republican</b>				
Reagan	.68 (.34)	.066 (.89)	-.007 (.96)	.29 (.81)
Nixon-Ford	-.43 <sup>a</sup> (.04)	-.26 (.45)	.074 (.52)	-.37 (.46)
Eisenhower	.0039 (.99)	.15 (.46)	-.091 (.43)	-.096 (.55)
<b>Democratic</b>				
Carter	.075 (.83)	.67 (.43)	-.10 (.52)	1.38 (.13)
Kennedy-Johnson	.25 (.23)	.0013 (.99)	.035 (.73)	-.87 (.22)
Truman	-.38 (.55)		.095 (.83)	1.43 (.51)
<b>Means of the variables</b>	5.6	4.0	10.3	67.6

Note: Residuals are from the final model equations shown with Figure 1. Associated significance levels are shown in parentheses.

<sup>a</sup>Significant departure from mean residual of zero.

based on residual variances obtained from the following sets of test regressions for each endogenous variable in the model: (1) benchmark, purely autoregressive test equations specified with three year lags; (2) test regressions in which the exogenous economic variables (energy price shocks and the natural unemployment rate) that are postulated by the theoretical setup to appear in a particular equation are added to the benchmark autoregressions; and (3) test regressions in which all variables postulated by the theoretical setup to appear in a particular equation are added to the benchmark autoregressions.

For ease of interpretation, the residual variance from each test regression is expressed in percentage of the residual variance of the appropriate benchmark autoregression, and so this percentage equals 100 in the first column of Table A-1. (Actual residual variances from the

benchmark autoregressions are given in parentheses.) Other than the autoregressive terms, the dating of right-side economic and political variables and the functional forms of the equations yielding the results in Table A-1 are based on the theoretical specifications presented in the main text. Parallel time-series test regressions in which a trend term was added to each equation yield the same pattern shown in Table A-1 and are available by request. (Trend terms are often included in Granger causality test regressions to ensure conditional stationarity.)

With the direction of time-*t* relations as part of the maintained hypotheses, the results in Table A-1 show that the economic and political determinants of the dependent variables in the model easily satisfy the Granger standard of causality. Of particular importance are the results showing that the unbiased residual vari-

ances in the unemployment and transfer spending equations (unemployment and transfers being the main proximate sources of movements in inequality) decline substantially with the inclusion of political and endogenous economic variables. (The political variables and endogenous economic variables also pass Granger causality tests when added separately to autoregressive test equations.)

Table A-2 reports residual means and associated significance levels, computed by partisan presidential period, for each structural equation of the political-economic model of income distribution. If the global results in Tables 1 and 2, which, in turn, underlie the simulation analyses illustrated in Figures 2-4, are robust for partisan periods, the residual means should be insignificantly different from zero. By conventional significance levels the only failure of the model to generate robust fits for partisan periods appears in the unemployment equation during the Nixon-Ford years. The residual mean of  $-.4$  is significant at the .04 level, implying that the equation overpredicts unemployment for this Republican period.

## Notes

This is revised composite of papers delivered at the Midwest Political Science Association annual meeting, Chicago, 1985; the Growth of Government in Developed Economies conference, Onasbruck, West Germany, 1986; and the Western Political Science Association annual meeting, Eugene, Oregon, 1986. The work is a joint effort, in which Hibbs had primary responsibility for model specification, statistical analysis, and writing, and Dennis had primary responsibility for research on, and compilation of, the income distribution data series (see Dennis 1986). The authors are grateful to Ulf Christoffersson, Henry Chappel, and Hans Jørgen Nielsen for many useful comments on an earlier draft. Hibbs also thanks the Institute of Political Studies, University of Copenhagen; the Danish Social Science Research Council; and the Department of Economics at Göteborg University, Sweden for supporting his contribution. All data series and computations used for the article are available from Hibbs by request.

1. The relation of partisanship to income appears to have been strengthened somewhat from the Eisenhower to the Reagan presidency. See the SRC/CPS data reported by Wattenberg 1986, tbl. 9.3, p. 145.

2. The income data are net of taxes, cash, and in-kind transfers and the estimated magnitude of unreported income. The income concept therefore equals disposable income adjusted for in-kind benefits and income underreporting. Because we include in-kind benefits, which have made an increasingly important contribution to the economic well-being of low-income groups, our data show less inequality (as they should) than cash income data alone. Also, by focusing on post-tax-transfer data (rather than, say, comparing differences between pre- and post-tax-and-transfer distributions) the analysis is not distorted by actions in the market designed to offset the potential redistributive effects of tax-transfer policies. Over time families are a more comparable unit than all households and so we use data on family income shares. Note, however, that we make no attempt to adjust the data to a life cycle conception of income inequality. For further information about our income data consult Dennis's data appendix (1986).

3. Demcong is the percentage share of Democrats in the House plus the percentage share in the Senate divided by two. This measure of the strength of the Democrats in Congress was superior to plausible alternatives (for example, the Democratic shares in the House and Senate measured separately) in all equations we estimated.

4. We might just as well have used real output movements in place of unemployment throughout because unemployment and output are intimately connected through the macroeconomic relation known as Okun's law.

5. Analysis of quarterly models in Hibbs 1986 and 1987 shows that the fiscal and monetary policies observed under the parties are consistent with the differences in party targets implied by the partisan model. To conserve space, only the unemployment results necessary for our analysis of political influences on distribution are developed here.

6. This equation was also run with a constant, which was indistinguishable from zero. For a more elaborate setup, which yields nominal-real trade-off estimates broadly consistent with the results for the simpler equation used here, see Gordon and King 1982.

7. Lindbeck (1983) believes that similar forces underlay increases in social spending in Europe. He argues that the rapid rise of expenditure "is largely a result of the increased use of government budget policies for attempted redistributions of income and welfare" (p. 288).

8. Party strength in Congress and party control of the presidency are positively correlated. The values of party congressional strength used in the simula-

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## Income Distribution in the U.S.

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tions therefore depend on the party of the president. During Democratic presidencies the low, average, and high values for Democratic congressional strength (which are based on the mean and standard deviation of sample period data) are 56.9%, 61.4%, and 65.9%. During Republican presidencies the corresponding values are 50.4%, 55.6%, and 60.8%.

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