MODELLING THE U.S. FEDERAL SPENDING
PROCESS: OVERVIEW AND IMPLICATIONS

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ABSTRACT

The purpose of this paper is to show how inflation is
endemic to the budgetary process of the United States Federal
Government. We relate models of government expenditure to
models of the economy, thus joining in theory what has in
practice always been together. The description given --
although presented in summary rather than detail -- is based
on hard statistical and econometric evidence amassed over more
than a decade. We attempt to show that, while they are complex,
the relevant processes can be modelled reasonably simply. We
conclude that the forces influencing U.S. Federal expenditures --
bureaucratic, political and economic -- are too entrenched and
powerful to be easily deflected from their current course.
Although expenditures decline during restrictive periods, they
do not decline by nearly as much as they previously increased;
thus each cycle of spending begins from a higher base.

After brief descriptions of the process by which fiscal and
budgetary policy are formed in the name of the President and of
the evolution of the broad pattern of Federal expenditure post
World War II, we present simple, empirically supported models
of the formation and coordination of budget requests, Congres-
sional appropriations and the timing of Federal expenditures.
Next we outline, by means of the comparative static analysis of
a simple macroeconomic model with an endogenous government sector,
the short and medium term economic implications of a government
reacting -- through its wage bill, 'mandatory' transfer payments
and attempted fiscal policy -- to output, the price level and
unemployment. When government involves a sizeable proportion of
economic activity, its budget deficit -- rather than private con-
sumer and investment credit alone -- represents a major inter-
temporal credit demand, fuelling both growth and inflation. In

these circumstances a tight fiscal and monetary policy, which
reduces this credit in response to inflation, can have precisely
the opposite effect to that desired, namely, simultaneous stag-
nation and accelerating inflation. Finally, we speculate on the
long term effects of the resulting growth of the public sector
necessitated by short term political and economic forces in light
of the slowly adapting nature of bureaucratic processes captured
in our models.

MODELLING THE U.S. FEDERAL SPENDING PROCESS:
OVERVIEW AND IMPLICATIONS

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If increased economy and efficiency in the expenditure of
funds is to be secured, it is thus imperative that the evils
should be attacked at their source. The only way by which this
can be done is by placing definite responsibility upon some
officer of the Government to receive the requests for funds as
originally formulated by bureau and departmental chiefs and sub-
jecting them to that scrutiny, revision, and correlation that
has been described. In the National Government there can be no
question but that the officer upon whom should be placed this
responsibility is the President of the United States.

> House Select Committee on the Budget
> (regarding the 1921 Budget and
> Accounting Act)
> H. Rept. No. 14, 67th Congress,
> 1st Sess., at 5.

1. INTRODUCTION

The purpose of this paper is to show how inflation is en-
demic to the budgetary process of the United States Federal
Government. To do this we relate models of government expendi-
ture to models of the economy, thus joining in theory what has
in practice always been together.

The description we shall give -- although presented in
summary rather than detail -- is based on hard statistical and

econometric evidence amassed over more than a decade. We shall
attempt to show that, while they are complex, the relevant pro-
cesses can be modelled reasonably simply. We shall conclude
that the forces influencing U.S. Federal expenditures -- bureau-
cratic, political and economic -- are too entrenched and powerful
to be easily deflected from their current course. Although ex-
penditures decline during restrictive periods, they do not decline
by nearly as much as they previously increased; thus each cycle
of spending begins from a higher base. For empirical detail the
reader is referred to our forthcoming monograph, *The Political
Economy of Public Expenditure*.

To make this paper self-contained, this introduction contains
very brief descriptions of the process by which fiscal policy
and the budget are formed in the name of the President and of the
evolution of the broad pattern of Federal expenditure post World
War II. An interesting observation is that both the necessity
and the opportunity for increased spending arose through the
exigencies of economic policymaking in the grip of the 'New
Economics'.

In the second section we turn to the bureaucratic processes
by which the Chief Executive receives 'the requests for funds as
originally formulated by bureau and departmental chiefs' and
subjects them to 'scrutiny, revision and correlation' before sub-
mitting them to Congress as formal requests for appropriations.
Our simple, empirically supported models of the formation and
coordination of budget requests, appropriations and timing of
expenditures will be presented in this section. Here we shall
encounter the powerful influence of momentum.

Section 3 outlines, by means of the comparative static anal-
ysis of a simple macroeconomic model with an endogenous govern-
ment sector, the short and medium term economic implications
of a government reacting -- through its wage bill, 'mandatory'
transfer payments and attempted fiscal policy -- to output, the
price level and unemployment. Unlike both the established
Keynesian and Monetarist equivalents, the model is capable, de-
pending on recognizably plausible parameter configurations, of
generating a wide range of behaviour -- including the evil modern

phenomenon of 'stagflation'. The message here is that when govern-
ment involves a sizeable proportion of economic activity, its budget
deficit -- rather than private consumer and investment credit alone --
represents a major intertemporal credit demand, fuelling both
growth and inflation. In these circumstances a tight fiscal and
monetary policy, which reduces this credit in response to infla-
tion, can have precisely the opposite effect to that desired,
namely, simultaneous stagnation and accelerating inflation.

In the final section of the paper we speculate on the *long
term* effects of the resulting growth of the public sector neces-
sitated by short term political and economic forces.

Brief Description of the Executive Fiscal Policy and Budget Process[1]

The Budgeting and Accounting Act of 1921 makes the President
formally responsible for the initiation of an annual budget through
his staff agency, the Office of Management and Budget (OMB, form-
erly the Bureau of the Budget, BOB). The preparation and execu-
tion of the Federal budget for any fiscal year covers at least
31 months. Each spring, attention is given to: (1) the control
of (contractual) obligations and outlays (expenditures) during
the last half of the fiscal year in progress; (2) the planning
of programs for the upcoming fiscal year, which will begin the
next October; and (3) the development of preliminary plans and
policies for the succeeding fiscal year.

During the time that Congress is considering the budget for
the imminent fiscal year (October 1 - September 30), the agencies

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1. In the preparation of the remainder of this section and the
    next we have made extensive use of the work of John P. Crecine
    and his colleagues, Mark Kamlett, David Mowery and Chandler
    Stolp, under the support of NSF Grant SOC-72-05488. We are
    grateful for extensive discussions with them and refer the
    reader to Crecine's work on budgeting processes in the Depart-
    ment of Defense in *Volume IV, Appendices: Commission on the
    Organization of Government for the Conduct of Foreign Policy*,
    U.S. Government Printing Office (1975), pp. 63-110, and our
    forthcoming joint paper with Crecine, "Some Structural Char-
    acteristics of the Federal Budgetary Process". We also grate-
    fully acknowledge the support of the Center for Advanced Study
    in the Behavioral Sciences during the academic year 1974-75.

are preparing estimates of their expenditures for the next year.
These estimates are compiled by budget officers under the direc-
tion of agency and departmental heads. Of necessity, estimates
are detailed, but they may incorporate modifications to take ac-
count both of the overall Presidential program and possible Con-
gressional reaction. When complete, they are submitted to OMB.
There they are reviewed in the light of Presidential plans by
examiners familiar with the respective agencies. Subsequently,
hearings allow both agency defense and clarification of estimated
requirements. During this part of the process, the Director of
OMB confers frequently with the President and endeavors to keep
agency requests within Presidential limits. By December, the
Director presents to the President a consolidated account of ex-
pected revenues and requested expenditures. Next, under the
direction of the President, OMB, the Treasury Department and the
Council of Economic Advisors prepare the budget message. In
January, the President presents his budget to Congress.

The Congressional budget process has undergone significant
changes due to the enactment of the Congressional Budget and
Impoundment Act in 1972.[2] Under this Act, Congress also focusses
on *overall budget totals* and relates individual appropriation
actions to one another within a general set of spending priorities.
To aid in this process, the Act established a new committee on
the Budget in each House to augment the Appropriations Committees'
and a new, professionally staffed, Congressional Budget Office
(CBO). The Act also provides a tight timetable for the new budget
process and shifted the fiscal year from July 1 through June 30
to October 1 through September 30, in order to give Congress three
additional months to complete action on the Federal budget. Note
that in the new budget cycle which has been in effect since fiscal
1977 (actual 1975) the timing and nature of the Executive portion
of the cycle has not changed substantially.

OMB's role in the Executive budget process has two principal
phases: a macro planning or 'target setting' phase, called the

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2. For a more complete description see, *Preparation and Execution
   of the Federal Budget*, Office of Management and Budget,
   November (1976).

Spring Budget Preview, and a more detailed *Director's Review* phase
in which agency budget submissions are examined in detail. At
the Director's Review in the autumn, requests generated for each
agency during the planning phase are coordinated in light of
overall fiscal policy. The principal role of a department is to
reconcile the requests of its agencies before submission to OMB
for the Director's Review. The Department of Defense has a process
for reconciling Service requests similar to that of the Office
of Management and Budget.

For at least the past decade, OMB has prepared the necessary
forecasts and determined agency appropriation and expenditure
targets in the Spring Preview without any *formal* input from the
agencies. The Preview exercise results in a set of plans consis-
tent with anticipated fiscal policy which OMB produces almost
entirely internally. Although the Budget Office attempts to set
aside 2 or 3 percent of the planned budget total for contingencies
(mostly pay raises) during the Preview, the allocations of budget-
ary resources have been broadly determined at this point. Without
changes of total resources available, an increase in any one
allocation over its target implies a decrease in another. Because
agencies tend to interpret these OMB ceilings as essentially
minimum guarantees, it is easy to see that after targets have
been sent to the agencies any significant increase in a part of
the total can result in very painful reallocation decisions for
departments and the Office of Management and Budget. Features
of the fall Director's Review process are a compression of infor-
mation and the suppression of detail.

As might be suspected for a department spending from one-half
(in the early post-war years) to one-fifth (more recently) of the
Federal budget, the Department of Defense has a budget process
essentially separate from -- but of course coordinated with -- OMB.
In this process the Office of the Secretary of Defense (OSD), in
particular the Controller's Office under an Assistant Secretary,
plays the role with regard to the Services that is played by OMB
with regard to the non-defense agencies and departments.

The method for determining the defense/nondefense split was essentially developed in the decade immediately post World War II. Basically the story is one of deducting, from estimates of revenues accrued, breakdowns of 'uncontrollable', or fixed expenditures over which there is little immediate discretion, and controllable domestic expenditures over which there is some spending discretion, to leave the amount available for military expenditure, broadly defined.[3]

Estimation is performed by only a very few people -- during the Truman and Eisenhower administrations by the same people over a number of years -- during a period of a few weeks. We would therefore expect various aids to calculation to be employed even in the preparation of this simplified aid to Presidential decision-making. However simple-minded such aids appear, they can be made still easier for the men on the run. Although the resulting defense total is subject to appeals by the Department of Defense and the Pentagon, the numbers remain relatively fixed over the Executive budget cycle. They stay stable because the process separates detailed and programmatic responsibility for defense and non-defense expenditures between the Office of the Secretary of Defense and OMB/BOB over the period from the Spring Preview to the October reviews. Because timing is critical to budgeting, it is important to recall that these estimates are made eighteen to twenty months in advance of the average timing of actual expenditures in the fiscal year under consideration. Hence we should not be surprised that estimates made in the recent past are more important for their bearing on events occurring during and immediately after their composition than as predictions of an uncertain future. Thus the Presidential review of appeals in December is less one of policy making than of dispute settling in view of changes in fiscal and economic estimates by the Treasury,

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3. During the Kennedy-Johnson era, for political reasons Defense Secretary McNamara avoided communicating *explicit* military ceilings during the executive portion of the budget cycle. However, it is not clear whether or not *implicit* military totals were used but not reported. See J.P. Crecine, Defense Budgeting, Chapt. 7 in R.F. Byrne, A. Charnes, W.W. Cooper, O.A. Davis and Dorothy Gifford, eds., *Studies in Budgeting*, North Holland, Amsterdam (1971).

OMB/BOB, and the Council of Economic Advisors. Indeed, barring major changes in foreign policy, the broad lines of Presidential policy are fixed during the Spring Preview four to eight quarters in advance of the corresponding outlays. Throughout the ensuing budget cycle to the submission of the President's budget to Congress, adjustments to these broad outlines are relatively marginal in light of changing economic and environmental circumstances, and detailed adjustments are made in light of the policy advocacy process of agencies, Congress and clientele groups in the economy and polity. The whole process is one of continual adjustment and mutual adaptation of the estimates of various interests within the bureaucracy to the final estimates submitted to Congress in the President's budget.

The Post War Increase in Expenditure

In the decade of the fifties, the budget process appeared to be working reasonably well -- revenue and expenditure were kept within hailing distance. Congressmen respected the process; so did the Executive. After all, even in fiscal 1961, the Federal budget was only about $82 billion, representing some 16 percent of the gross national product, a growth of nearly 40 billions since fiscal 1951, but only a negligible increase in the proportion of the GNP. By fiscal 1979, however, the budget has increased to a whopping $500 billion and an even larger proportion of the GNP to nearly 25 percent.[4] The late sixties and the seventies really represented different eras in budgeting from the decades that preceded them. What happened?

One thing that did not happen was an absolute increase in military expenditures. These have remained virtually stable in constant dollars since the rundown after the close of the Korean War in 1953 -- the period of the Vietnam War increasing them only temporarily. Thus, the effect of the Truman-Eisenhower-Nixon-Ford

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4. The percentages for earlier years are for the administrative
    Federal budget. Percentages for total outlays, comparable
    to the 1978 (cash consolidated) budget, are 15% of GNP in
    fiscal 1951 and 20% in fiscal 1961. Source: Fiscal 1967
    Budget.

policy of calculating the first approximation to military expenditure as a residual, and the exigencies of the separate structure of military and non-defense calculations within the Executive budget process, have resulted in increments in total military spending which on average have just kept up with cost increases due to wage and price rises. Furthermore, in terms of proportion of GNP -- which represents the proportion of national resources diverted to military spending -- this has been relatively constant. Although over the post-war period from fiscal 1950 to fiscal 1975 this proportion has varied from 5 to approximately 13% (at the peak of the Korean War) and rose by roughly 3% of GNP during the Vietnam War, it has fluctuated about a level of approximately 8% over the period. To find the substantial increases in government expenditure over the post-war period, we must therefore look elsewhere.

The great increases in public expenditure have come in social and welfare expenditures, from a total of about 8 billions in fiscal 1965 immediately before LBJ's Great Society programs, to 168 billions in fiscal 1975 -- over a four fold increase in real terms. This is only to say that there was a marked agreement within the country that expenditures on human resources should rise and that this consensus has been reflected in Congressional appropriations and subsequent Federal expenditures.[5]

The 1960s and early 1970s witnessed a series of struggles over the size and scope of government spending, as the political forces behind spending grew far more powerful. Presidents Kennedy and Johnson and Nixon, in spite of initiating increased spending, wanted to *appear* financially responsible. Whether it was Johnson's effort to come in below $100 billion, or Nixon's at no more than $200 billion, they promoted their announced targets publicly. Executive interplay with Congress became a game to shift responsibility to the other branch for cutting or failing to cut expenditures. The size of budgets became as never before part of

5.   See Aaron Wildavsky, *Speaking Truth to Power: The Art and Craft of Policy Analysis* (Little, Brown, 1979). Chapter 4, 'Coordination Without a Coordinator'.

political strategy. Successive governments, therefore, whatever their announced orientation to spending, have found it imperative to make the deficit look smaller either by making revenues look larger or expenditures lower or both.

Economics (or, at least, economists) came to the rescue. The increasing importance of economics in government has provided doctrinal aid -- sometimes on purpose, other times by accident -- for higher levels of spending. The consolidated budget, the nature of the forecasting exercise for fiscal policy making itself and the concept of the full employment surplus -- all inventions of economists -- simultaneously strove to justify higher spending and to make it appear lower.

By far the most important of the specific devices for increasing government spending mentioned above has been the abandonment of the norm of the balanced budget by President Nixon in the fiscal 1972 budget in favor of a less restrictive one. The idea that Federal budgets *ought* to be balanced was widely accepted in the United States, even after the Keynesian revolution in thought, through the administrations of Democrat Harry Truman and Republican Dwight Eisenhower. Life was simple (outside of wartime) and *cash* control was exercised; expenditures were monies the regular governmental departments paid out and revenues were taxes collected. A deficit, then, meant a cash difference between ordinary revenue and expenditure; what was *ordinary* was sanctified as much by usage and custom as by formal definition. When the government took in as much cash as it paid out, the budget was balanced. Keynesian economic theory was interpreted to mean that a *temporary* Federal deficit could stimulate the economy at a downturn of the business cycle, but the cash loss would be recovered at the subsequent peak as a revenue surplus. In the long run -- in theory -- no increase in the public debt need be sustained; economic debate centred on the effectiveness and timing of this counter-cyclical policy.

Whereas Presidents Truman and Eisenhower believed in the norm of the balanced budget and acted on their beliefs, Presidents Kennedy, Johnson and Nixon abandoned these beliefs and acted accordingly. The *direct* mechanism for superseding the older norm was called the *full employment deficit*. In a word, this doctrine

meant that federal expenditures should rise to the point that
would have been justified if the nation's economy had been at full
employment. Under the new interpretation of Keynesian theory,
the difference between this full employment level and current
revenues would be the appropriate Federal deficit to impart exactly
the right stimulus to the economy to achieve full employment.
A cash surplus under these conditions is most unlikely, especially
since Kennedy established the precedent of cutting tax rates to
go along with it. The extent of the permissible deficit, however,
was rather vague, depending as it did on whatever level of un-
employment was considered too high, and whatever calculations
were judged to provide an approximation of full employment. The
cash balanced budget was not only regarded as unnecessary and
theoretically undesirable, but 'balance' at the full employment
level, rather than at a recognizable particular point, was in
practice becoming a rather sizeable range. Keynesian thought
was now interpreted to mean that the budget should be balanced
at expenditures that would provide sufficient stimulation to
create full employment at whatever level was designated as being
full. Might this blissful full employment state come about?
Not never, perhaps, but hardly ever; and yet apparently paradox-
ically a cash *surplus* -- coupled with a tight monetary policy --
wreaked havoc on the economy in 1969-70 and again in 1974-75.

From the perspective of theoretical economic management,
the new economic concepts no doubt represent improvements, but
from the point of view of political management of expenditure,
the proposition is doubtful. It is a matter of distinguishing
between economic and political rationality. From an economic
point of view, for example, it makes substantive sense to index
social security contributions so as to mitigate the effects of
inflation by recipients. But if one realizes that Congressmen
love to vote increases, so that protection against inflation is
likely to be achieved first, followed by repeated increases, the
political economist of social security might have advocated a
different approach. In the same way, the political economist
of Federal expenditures might have preferred to keep separate
accounts for economic purposes rather than compromising an

essentially political document -- the budget of the United States Federal government -- with economic accounting concepts that bias the results in the direction of increased spending. Of course, if one *wants* increased spending, then what has been done is not only correct but creative.

'Playing politics' with the budget is what everyone does, and should do, in a democratic polity. 'Politics' once included the expectation that voters would apply sanctions if unbalanced budgets were regularly submitted. Thus, in the past, significant departures from the norm of a balanced budget placed informal but real limits on the amount of manipulation that could take place in order to get past the next election or to maintain or increase popularity in the short run. This restraint no longer applies. If Presidents wish to avoid the appearance of confrontation between policies of 'guns or butter' (or to spend largesse before election day), their possibilities are multiplied. Who, after all, can say how large the full employment deficit might appropriately be or what the margin of error in the total actually is or what the level of deficit would have to be to know that the *political* impact had become too large? In this way, inflation under the impetus of increased spending has been built into the budgetary process to a much larger degree than was heretofore the case.

Now in the past it has been argued that long-run interests in holding down spending have been sacrificed to short-term interests in gaining the approval of beneficiaries. The norm of the balanced budget, however, limited how much of this could be done at any one time. When President Johnson discovered that almost everyone was interested in new obligational authority, that is, the amount appearing in the budget in a particular year, rather than in future obligations incurred under the corresponding authorization, another past restraint in the budgetary process was loosened. Present reductions could be traded for future increases. Spending in relation to revenue over the past two decades has in fact been made *less* rather than more accountable, hence less *controllable*.[6]

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6. For an excellent discussion of controllability see Barry M. Blechman, Edward M. Gramlich and Robert W. Hartman, Budget controllability and planning, Chapter 7 of *Setting National Priorities, The 1976 Budget*, The Brookings Institution, Washington D.C. (1976), 190-230.

We must understand that what is or is not considered a controllable expenditure -- hence subject to discretion, hence part of the budget that can be changed -- is a *subjective* and not an objective definition. The important point is that uncontrollable is not the same as *unchangeable*. It remains true, as it always has been, that budgets are made by people and can be changed by them. It may take a few years (a ten percent increase a year amounts to over a hundred percent in seven years) but if we are interested in the cumulative results of budgetary processes, little is left that human beings cannot change.

2. MODELLING THE EXECUTIVE BUDGET PROCESS: INCREMENTALISM, COORDINATION AND THE PROPORTIONAL CUT

Despite the complexities of the Federal budget and expenditure processes the immediate forces behind the growth of the United States Government can be reasonably simply and accurately modelled. In this section we introduce empirically supported:-

1. Micro-models of *appropriation* formation -- taking as basic unit major agencies and departments in OMB Divisions and including external economic, social and political influences operating through the Executive, President and Congress.

2. Models of non-market coordinating mechanisms -- Office of Management and Budget procedures by which agency *appropriation* requests are fitted within current fiscal constraints.

3. Distributed lag spending models -- to represent the timing of actual agency and departmental *outlays* from appropriated funds.

In the next section we shall describe a simple macroeconomic model and use it to analyse the effects of Presidential policymaking interacting with bureaucratic and Congressional upwards spending pressures (represented in the models of this section) to generate a public policy induced economic cycle.

Rather than present detailed econometric estimates[7], it will suffice here to set out the basic models together with a brief description of their empirical support. We begin with a verbal description of the models developed in our earliest work which investigated the correspondence of simple two-equation models -- based on considerations of limited rationality in the face of complexity and uncertainty -- to the *appropriate* budgeting behavior of 116 domestic agencies, large and small, over the period fiscal 1947 to fiscal 1963. The basic model for an individual agency stated that (up to mutually and serially independent disturbances representing non-recurring events specific to respectively the demand and supply of funds):

> *Executive requests on behalf of an agency were a proportional mark-up of the previous years appropriation, while the corresponding Congressional appropriation was a simple proportion of the Presidential estimate (request),*

usually, of course -- but not always[8] -- a *mark-down*. Although the incremental behavior specified by these models of the appropriations process for an individual agency appeared to be the general rule, a major finding concerned the nature of the exceptions. For many agencies, epochs in which the underlying incremental relationships appeared to change were identified statistically; a subset of these epochs was investigated by documentary analysis and the major influences at work on the corresponding agencies classified. While some of these influences were essentially random

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7. See Otto A. Davis, M.A.H. Dempster and Aaron Wildavsky, A theory of the budgetary process, *Amer.Political Sci. Rev.* 60 (1966), 529-47; On the process of budgeting: An empirical study of Congressional appropriation, *Papers in Non-Market Decision Making* 1 (1966), 63-132; On the process of budgeting II: An empirical study of Congressional appropriation, Chapt. 9 in R.F. Byrne, A. Charnes, W.W. Cooper, O.A. Davis and Dorothy Gifford, eds., *Studies in Budgeting*, North Holland, Amsterdam (1971); Towards a predictive theory of government expenditure: U.S. domestic appropriations, *British J. Political Sci.* 4 (1974), 419-452, and our forthcoming monograph.

8. Outstanding exceptions in the fiscal 1947-63 period were the National Institutes of Health and NASA.

and non-recurring, most could be seen to be due to specific political, or general economic or social events. This suggested that, although it is basically incremental, the budget process does respond to the needs of the economy and society, but only after sufficient pressure has built up to cause *abrupt* changes precipitated by events.[9]

Next we attempted to model this extended notion of the nature of the budget process at agency level by incorporating a number of political, economic and social exogenous variables into our earlier model in such a way as to preserve the behavioral interpretation of its coefficients. The explanatory variables for these extended micro models are set out in Table 1. The models were estimated over the fiscal 1947-63 period for a representative selection of 53 agencies from our previous 116. Confidence in the validity of an econometric model can only be justified by successful performance in prediction -- both *ex post* (after the fact) and *ex ante* in genuine forecasting. We therefore analysed the increase in level of explanation of the budget process obtained by the extended model in terms of some reasonable criteria for evaluating *ex post* prediction over the five-year post-estimation period fiscal 1964-68. We also compared the predictive performances over this period of the extended model and various obvious or naive alternatives for predicting appropriations -- current Presidential budget estimate (request), previous appropriation and an autoregressive model for appropriations. The exogenous shocks causing abrupt changes in the incremental dynamics of the budget process for a *single* agency were modelled with some degree of success in prediction (both absolutely and vis-a-vis naive alternatives) by the introduction of a statistically significant *subset* of the exogenous political, social and economic variables. But the Executive side of the process performed poorly for predictive purposes. We set out, therefore, to uncover the cause of the difficulty and to improve our models of Executive action.

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9. For a discussion of the implications of this effect for the concept of incrementalism, see our On Change: Or, there is no magic size for an increment, *Political Studies*, __27__ (1979), 371-389.

Table 1

Explanatory Variables in the Micromodels

Extended to Explain Exogenous Influences

Process

LV	Leading variable	Either agency request (estimate in President's budget message) x_1 (endogenous), or fiscal appropriation in previous year y_{t-1} (pre-determined).
$(y-x)_{t-1}$		Difference between request and appropriation in the previous fiscal year.

Political

1. HND	House non-southern Democrats	Non-southern (including western) Democrats hold between 100 and 150 seats in the House of Representatives.
2. NLND	House large non-southern Democrats	Non-southern democrats hold over 150 seats in the House.
3. HDM	House Democratic majority	Democrats hold between 217 and 250 seats in the House.
4. HLDM	House large Democrat majority	Democrats hold over 250 seats in the House.
5. SDM	Senate Democratic majority	Democrats hold 50 or more seats in the Senate.
6. RP	Republican President	-
7. PRE-EL	Pre-election year	Fiscal year of Presidential election (dated one year subsequent to election year).

Administrative

8. B.DEF$_{-1}$	Budget deficit in previous fiscal year	Previous fiscal year estimated in surplus (0) or deficit (1) by the Council of Economic Advisors, as announced in the current President's budget message in January.
9. PBRR	Projected budget receipts ratio	Estimate of administrative budget receipts for the coming fiscal year divided by the estimate for the previous fiscal year at the time of the six month review in December (Kessel).

Economic

10. EC.REC	Economic recession	Fiscal year judged a recession year by Council in a *subsequent* budget message.
11. UER	Unemployment rate	5 percent is 1.00.
12. RNNP	Real Net National Product	Net national product deflated by the private price index per head of adult population (Niskanen). F71 is 1.00
13. GNPD	GNP Deflator	F58 is 1.00
14. FPPR	Federal/private price ratio	Ratio of federal government to private price index (Niskanen).

Social

15. WAR	-	Nation at war (declared or *de facto*).
16. AFO	Armed forces overseas	A two year (t and t+1) moving average of armed forces overseas *per head* of adult population x 10^2 (Niskanen).
17. YPR	Young population ratio	Ratio of young to adult population (Niskanen).
18. ADP	Adult population	F71 is 1.00.

It was first necessary to confirm these findings by extending the data period. Comparison of model performance over two periods resulted in better fits in the longer estimation period (fiscal 1948-67) for the agency equation, and comparable fits over both estimation periods for the Congressional equation. Best specifications in terms of significant exogenous variables changed only marginally between the two periods. Over the second prediction period (fiscal 1968-72), prediction by both equations -- and hence prediction of appropriations by the system -- improved markedly. This finding held both absolutely, and relative to the naive alternatives. Given good Congressional results, the earlier conclusion that request prediction was the key to good system prediction remained unchanged. When our predictions for requests by Executive agencies worked well, so did our predictions for the budgetary process as a whole.

Though they were not allowed in the earlier behavioral specifications, constant terms entered significantly into the specification of our new micromodels, even after we introduced exogenous variables. To see what was wrong, we suppressed the constant terms, and simultaneously re-entered an intertemporal gaming term, represented by the previous year's cut (or increase) on the agency requests, into both the Executive and Congressional equations. The results were a considerable increase in the number of cases of significance of the inter-year gaming term, together with a large increase in explanation of agency appropriations by extended equations containing exogenous variables. We interpreted this as strong evidence for the behavioral specifications of our micro-agency equations in terms of agency 'mark-ups' and Congressional 'mark-downs'.

When, contrary to the behavioral specification, a constant term is significant, the main reason is either that key variables have been omitted or that non-linearities are present. Since the latter explanation was explicitly tested and found wanting, and the introduction of exogenous variables had not significantly improved the fit or predictive power of our agency equations, our findings so far indicated that the omission of behavioral variables was the more likely explanation. Since our Congressional equations

performed well, it became all the more imperative for us to re-examine the Executive side of the process.

If, as we surmised, external variables entered our equations mainly through the Congressional side of the process, and internal variables operate mainly through the Executive, the missing factor was likely to be a relationship *among* relevant organizations. It was inappropriate to continue to study individual agency requests in *isolation*. Indeed, as we have seen, not only OMB, but also the major departments such as Defense, Agriculture, Interior, etc., are charged with relating the various requests of their services and agencies to the President's over-all interests -- especially fiscal policy. We had omitted rules used by central Executive organizations for regulating their internal relationships; to add to explanation and prediction we needed models of inter-agency *coordination* within the Executive. Since our new agency models explicitly incorporated major political, economic and social considerations into the budgetary behavior relating to an individual agency, we were able to perform and classify inter-agency comparisons of these influences. We found that general services provided by large agencies (including the Public Health Service, together with natural resource agencies) are most susceptible to political influences. On the other hand economic variables were usually found to influence non-controversial appropriations, such as the Commodity Exchange Authority and the Immigration and Naturalization Service; indirect evidence for the application of fiscal policy considerations within the Executive budget process.

The most fruitful approach to modelling the coordinating behavior required of the Executive process appeared to us to be an effort to create a more sophisticated version of the *fair share* hypothesis -- the often-expressed belief among Executive practitioners that agencies should be treated not only by their programmatic merits, but also with regard to their organizational needs, so that all agencies concerned should receive some portion of the distributed goods (increases) or bads (decreases).[10] After all, if agencies were treated in terms of their merits, this would

10. See Aaron Wildavsky, *The Politics of the Budget Process*, Little, Brown, Boston (1975).

lead to precipitous increases and decreases as political leader-
ship or public fashion changed. Putting oneself in the other's
place suggests it is worth being fair -- winning less one year to
lose less another. Besides, knowledge to ascertain effectiveness
may be lacking. Calculations may be conserved, therefore, by
treating all agencies equally well or badly. Now we could model
the 'fair' coordinating relationships between bureaus and depart-
ments by which the environmental influences, represented by the
exogenous variables, are modified to suit *internal* organizational
needs. Preliminary tests of this inter-agency Executive coordi-
nating mechanism -- the *proportional cut*, to be described below --
were made on the Post Office and the major appropriations cat-
egories of the Defense Department. As a result it became clear
that certain sub-agencies and appropriations categories were
treated as uncontrollable and exempted from the fair share treat-
ment, while minor ones were lumped together for the calculation
of shares.

Like departments that must bring the total of their agency
requests within target figures both before and after the fall
Review, the Director of OMB must bring the major agencies and
departments within a fiscal total late in the autumn, see Table 2.
Moreover, we have seen that in spite of the enormous programmatic
complexities and vast sums of money involved, very few people
deal with the required reconciliations in very short periods of
time. To quote an early account by Mosher[11], 'Some budget offices
can make "flash" budget estimates almost overnight within 3 or 4
percent of complete accuracy [of final requests]'. Departmental
budgeting officers have a few weeks in September and October;
analysts in OMB have a few weeks in October and November, and
staff of the Comptroller's Office in the Office of the Secretary
of Defense have a similar period at the same time.

Thus in developing a model of the inter-agency coordination
process we should be looking for a simplified rule of thumb by
which collective resources may be fairly allocated across agencies.
Given past discussion of civilian and military executive budget
processes, we might expect that the essential mechanism of such

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11. Mosher, F., *Program Budgeting: Theory and Practice* (Chicago:
    Public Administration Service, 1954), p.239.

Table 2

Major Units in OMB Divisions Studied[*]

Funds Appropriated to the President

Agriculture

Commerce

Defense--Military

Army Corps of Engineers

Health, Education and Welfare

Housing & Home Finance Agency (1955-1965)

      i.e. Housing & Urban Development (1966-1973)

Interior

Justice

Labor

Transportation (1967-1973)

Treasury

State

Atomic Energy Commission

General Services Administration

National Aeronautics & Space Administration

Veterans Administration

Civil Service Commission

Railroad Retirement Board

Post Office Department (1955-1968)/Postal Service (1969-1973)

Federal Aviation Administration

All Other (Residual from non-defense total)

an allocation process would be incremental. Indeed, the emphasis
in both processes is on squeezing a sum of agency requests under
a projected total -- that is to say, in distributing a total cut
across *exaggerated* agency requests to result in some increment
over previous appropriations for all. Since such a process is
bound to be highly political within the bureaucracy, it should
not be surprising that a rule of thumb would be used which would
minimize conflict through being seen by the participants as 'fair'.
Assume that a Department Secretary assisted by his staff, has
identified his policy preferences for his department and would
like to implement them. Although problems of the relative in-
fluence of his agencies with respect to the President, Congress
and their respective clientele arise immediately, it is usual
practice[12]

> for a high departmental official to lay the
> whole budget down in front of the bureau
> heads in an effort to explain why they cannot
> get any more than their share despite the fact
> that their programs are eminently deserving.
> *Some budget officials are extremely talented
> at cutting without getting the blame.* [Italics
> added]

The necessity for a simple 'fair' mechanism was pointed out
in *The Politics of the Budgetary Process* more than a decade ago[13]:

> 'Fair share' means not only the base an agency
> has established but also *the expectation that
> it will receive some portion of the funds, if
> any, which are to be increased over or de-
> creased below the base of the various govern-
> mental agencies.* 'Fair share', then, reflects
> a convergence of expectations on roughly how
> much the agency is to receive in comparison to
> others. [Italics added]
>   The absence of ... an agreement upon fair
> shares makes the calculation of what the program
> or agency should get much more difficult. That
> happens when an agency or problem is new or when
> rapid shifts of sentiment toward it take place.

However, the recent operationalization of the notion of 'fair
shares' as an incremental non-market mechanism for the allocation

12. Wildavsky, *op.cit.*, p. 35.

13. Wildavsky, *op.cit.*, p. 17.

of scarce resources within an organization, is due to Crecine and
Fischer following an important, but generally overlooked, contri-
bution of Shubik.[14] In a pioneering study[15] of the Executive
budget process within the Department of Defense, Crecine and
Fischer proposed that the overall cut to total service requests
occasioned at the fall Secretary's Review should be distributed
across appropriations categories in proportion to each category's
share of the total. This was the abstract inter-agency allocation
rule proposed by Shubik in his single time period game-theoretic
analysis of the central organization competing agencies budget
game. Although their analyses are responsible for the 'propor-
tional cut' model, which we shall develop mathematically below,
it is interesting to note that both contributions considered this
allocation mechanism only a temporary expedient. As Crecine and
Fischer say[16],

> Earlier ... we argued that different budget
> accounts should be more or less vulnerable
> to additional cuts. In preliminary tests of
> the model, however, we made the *simplifying
> assumption* that additional cuts or restorations
> are allocated in proportion to planning fore-
> casts ... Future versions of the model will
> be based on the *more reasonable* assumption
> that the various appropriations categories
> are differently sensitive to additional ad-
> justments beyond the planning stage. [Italics
> added]

Their 'simplifying assumption' is -- as the quotation from *The
Politics of the Budgetary Process* suggests -- our theory.

The context is calculation: the Executive budget authority
must be able to reduce agency bids (mark down their markups, as
we have said) in a simple, speedy and perceivably fair manner.

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14. Shubik, Martin, 'Budgets in a decentralized organization
    with incomplete organization', Report P-4514, Rand Corpor-
    ation, Santa Monica, December (1970).

15. Crecine, J.P. and Gregory Fischer, 'On resource allocation
    processes in the U.S. Department of Defense', Discussion
    Paper, University of Michigan, Institute of Public Policy
    Studies, October (1971).

16. Crecine and Fischer, *op.cit.*, p. 57.

We would expect to find, therefore, that cuts are (a) proportional
to the requested increase and (b) applied to the largest agencies
or appropriations accounts (with smaller ones aggregated for con-
venience) that are (c) controllable without changing legislation.
Reductions, if our hypothesis is correct, fall disproportionately
on major categories and agencies that are controllable in the
short run, such as military personnel, or that limit spending
possibilities a few months later, like surveys preparatory to
construction. Political pressure for increased spending is coun-
tered by pushing back the *detailed* allocation of reductions on
the agencies. After all, the President and his OMB know where to
expect constant political pressure, especially where Congress is
likely to mark up, so it is only natural they should begin by
marking down. Budgeting is not a single act, but a series of
reactions in which each participant is aware of the tendencies
of the other.

We shall shortly set out the proportional cut model formally
as a means by which a central planning agency can reconcile indi-
vidual requests by program or sub-agency. For a domestic depart-
ment, this reconciliation will be done in two stages, by the
department and OMB. Even if the rule is in operation at both
stages, however, especially when the department must *subsequently*
allocate OMB cuts (or increases) amongst its agencies, we might
nevertheless expect to effectively apply it just once to improve
our estimates of the President's budget requests over our earlier
micro-models for individual agencies or departments within OMB's
Divisions as listed in Table 2.

Let us first set out the general model for the President's
budget request, for the ith agency, x_{it}, which is to be applied
to an 'uncontrollable' agency or department, i.e. one exempted
from the proportional cut, *viz.*

(1) $\quad x_{it} = (\beta_{i0} + \beta_{i1} z_{1t} + \ldots + \beta_{ik} z_{kt}) y_{it-1} + \beta_{ik+1} (y-x)_{it-1} + \xi_{it}$.

Here the z_{it}'s, $j = 1, \ldots, k$, represent observations on the exo-
genous variables (see Table 1) which influence the 'mark-up' or
the previous year's appropriation y_{t-1} in the current fiscal year t;

the term in $(y-x)_{t-1}$ represents intertemporal gaming behavior of the agency with respect to Congress; and ξ_{it} is a random disturbance to the relationship representing non-recurring special circumstances.

Alternatively, for the ith OMB major unit -- agency or department -- subject to the proportional cut, requests d_{it} to the October OMB Director's Review in fiscal year t are given by an equation similar to (1), *viz.*

(2) $\quad d_{it} = (\alpha_{i0} + \alpha_{i1}z_{1t} + \ldots + \alpha_{ik}z_{kt})y_{it-1} + \alpha_{ik+1}(y-x)_{it-1} + \xi_{it}$.

Define x_t to be the total non-defense request in the President's budget for the m agencies subject to the proportional cut in fiscal year t and let

(3) $\qquad d_t = \sum\limits_{i=1}^{m} d_{it}$

represent the total request for these agencies to the Director's Review. In general we would expect that

$$d_t - x_t \gg 0 \quad ,$$

i.e. that the sum of agency and department requests normally far exceeds the fiscal target for non-defense units subject to the proportional cut.

For the ith agency subject to the proportional cut, the request x_{it} in the President's budget will be given by the proportional cut model in fiscal year t as

(4) $\qquad x_{it} = d_{it} - \dfrac{d_{it}}{d_t} (d-x)_t \qquad i = 1,\ldots,m \quad ,$

i.e., the approved request for the ith agency is the initial request minus [plus] that proportion of the total cut [increase] required to meet the central organization's budget target given by the proportion of its initial request in the initial request total.

Rearranging slightly yields

$$(4a) \qquad x_{it} = \frac{d_{it}}{d} x \qquad i = 1,\ldots,m \quad,$$

i.e., *the approved budget request for the ith agency is that proportion of the central organization's budget target given by the proportion of its initial request in the initial request total.*

Thus the central organization -- OMB -- returns to each agency or department an approved allocation in such a way as to make the total of the individual allocations approved sum to a desired target total (usually an increase over the total in the previous year's budget). The approved allocations can be generated rapidly, so that little attention need be given to the programs behind individual agency requests, and 'fairly', in order to minimize dissonance from the agency actors in the process, both vis-a-vis each other and with the central organization.

The proportional cut model works as well in the case of a rapid and 'fair' allocation of a target *surplus* by the central organization to the agencies as in the more usual case of a cut below requested totals. It is of course incremental; both in that it takes as basic data the initial agency requests, and in that the current budget target is usually incrementally related to the actual budget total in the previous year.

Equations (3) and (4) constitute an application of the basic proportional cut model for the allocation of a single cut by the central organization to the inflated total of agency budget requests. We are of course interested in applying the model to improve our prediction of annual major OMB unit requests in the President's budget. But first we must report an empirical test of the assumption implicit in this approach to modelling the President's budget request for a major OMB unit subject to the proportional cut, namely, that

> *up to changes due to non-recurring events*
> *(represented by a random disturbance term)*
> *the Budget Director's recommendations are*
> *those appearing in the President's budget.*

Regressions of President's Budget figures on the Director's mark over the fiscal period 1955-73 for the agencies and departments listed in Table 2 support the view that the Director's mark *essentially* embodies Presidential economic and political policy decisions.

Thus the use of the proportional cut model to represent the effect of the fall Director's Review on agency and department submissions, d_{it}, is justified, providing we can ascertain *a priori* which major OMB units are subjected to the proportional cut. This was done by using the actual data, rather than estimates based on our Executive models, to ascertain for which configurations of agencies the proportional cut improved the statistical relationship between OMB unit submissions to the fall review and the corresponding President's budget figures. The results for the *estimation period* (fiscal 1956-68) and the post-unified budget *prediction period* (fiscal 1969-73) and their interpretations are displayed in Table 3.

For the agencies listed in Table 3 as outside the proportional cut, our original model (1) was estimated and used to generate predictions of requests over the prediction period as before. However, for the remaining major units of Table 2, the model of Review request formation (2) was estimated and used together with the proportional cut model (4) relating to the appropriate agencies to generate the President's budget request predictions over the fiscal 1969-73 period.

In both cases Congressional appropriation predictions were generated by estimating the model which had proved successful in earlier studies, *viz.*

$$(5) \quad Y_{it} = (\gamma_{i0} + \gamma_{i1} z_{1t} + \cdots + \gamma_{ik} z_{kt}) x_{it} + \gamma_{ik+1} (y-x)_{it-1} + \eta_{it} .$$

After statistically insignificant coefficients were rejected, the fit and predictive power of these models for the major OMB units listed in Table 2 was significantly improved over comparable earlier studies. This was due to the use of the proportional cut models to coordinate relevant agency requests. We may conclude that the proportional cut, together with our earlier models

Table 3

Agencies and Departments Not Subjected to the
Proportional Cut at the OMB Directors Review

Fiscal 1956-68		Fiscal 1969-73	
Justice	*Premiere Departments*	Justice	
State		State	
Treasury		Treasury	
AEC	*Cold War*	AEC	
NASA	*Space Race*	NASA	
Veterans Administration	*Uncontrollable (Pensions)*	Veterans Administration	
Army Corps of Engineers	*Eisenhower*	Army Corps of Engineers	
		HEW	*Great Society*
		Commerce	*LBJ/Nixon Business Interests*

for 'uncontrollable' units, is a reasonable representation of OMB's inter-agency coordination function.

Finally, following Galper and Wendell[17], the distributed lag model

$$(6) \qquad z_{it} = \delta_{i0}y_{it} + \delta_{i-1}y_{it-1} + \delta_{i-2}y_{it-2} + \xi_{it} \quad ,$$

where z_{it} represents actual *outlays* for fiscal year t, was found to be adequate to represent actual agency and department disbursements from appropriations y_i. These results are consistent with the hypothesis of *fixed* lags in the timing of actual disbursements from given Congression appropriations for individual agencies.

Moreover, in the estimation of both executive and legislative models for generating *appropriations* few pre-election variables were found to be significant.[18] Thus it would appear that there is little evidence for either classical Keynesian demand tuning by the U.S. Government or a political business cycle induced by *pre-election* spending.[19] Appropriations do not appear to vary either to dampen oscillations in the business cycle -- we shall in fact argue that causality runs the other way -- or to increase spending to help incumbent Presidents *in pre-election years*. Pre-election spending therefore appears to be restricted to effects of outlay *timing* -- of necessarily limited impact.

17. Harvey Galper & Helmut F. Wendell, Progress in forecasting the Federal budget, *Proc. Economics & Business Section Amer. Statistical Society* (1968), p. 86-98.

18. In Collat's study of corporate and individual tax revenue, a similar conclusion was reached. See Donald S. Collat, *Voting Behaviour and the Formation of Tax Policy.* D.Phil. Thesis, University of Oxford (1978), Chapts. 6, 7 & 8.

19. See, for example, William D. Nordhaus, The political business cycle, *Rev. of Economic Studies* 42 (1975), 169-190; Bruno S. Frey & Friedrich Schneider, On the modelling of politico-economic interdependence, *European J. of Political Res.* 3 (1975), 339-360; and Edward R. Tufte, *Political Control of the Economy*, Princeton University Press, Princeton (1978).

At the risk of some oversimplification, let us reconsider the Keynesian verities as they have been popularized, for that is the form in which politicians are most likely to be influenced by them. An attractive feature is that there are only two decision rules that matter: save and spend. When there is economic expansion, government lowers spending to reduce demand and when the economy is contracting, the government raises spending to increase demand. So far so good. But government itself, the main actor in this drama, is left out. Curiously, the economy, which is the passive recipient of all this attention, is modelled, but government, the active element, is not. Thus the prime passive assumption -- that the economy would respond with an acceptable tradeoff between employment and inflation -- has been much studied, of course, and lamentably, the *active* assumption -- that government could raise and lower spending at will -- has remained unexamined. What could we learn by applying our microspending models to different regimes?

The short-run effects we have covered in our modelling have led us to say that we doubt that the flexibility of reason required by a Keynesian government exists. The two year time-lags in applying overall spending targets to the budgetary process, which should be obvious to any school boy who follows the formal charts, but which did not become clear to us until our models revealed the obvious, make short-term adjustment (a) untimely and (b) perverse. Our concern in the remainder of this section and the next, however, is not the short but the medium term, say five to fifteen years, long enough to experience more than a single set of economic conditions in one or more economic cycles.

At least four separate relational activities between pairs of transactions must be monitored at the same time: expenditures are related to revenues, appropriations are related to outlays, executive and legislative actions are related to each other, and the public sector is related to the private. In considering each pair of related transactions, it is important to understand that efforts to achieve balance within a single relation have effects across them all. For example, changing the relative sizes of the public and private sectors may provide a solution to problems posed by imbalances between expenditures and revenues.

In our original studies[20] three alternative equations were
used to describe executive-legislative interaction within the
budgetary process. The basic -- most frequently found -- equation
is one (described above) where the Executive proposes and Congress
disposes by granting some fixed proportion of the initial bid.
Agencies mark up and Congress marks down. Over time a budgetary
base is negotiated from which increases are proposed by agencies
and reduced by Congress. Both actors fulfill their roles:
agencies act as advocates by requesting more and Congress acts
as guardian by giving less than was asked for but more than was
received the prior year. Congress gets credit for cutting while
agencies get more money for spending. This basic rule is most
generally in force over the long expansive phase of the economic
cycle.

At the beginning of the cycle, with the economy in stagnation,
however, government spending spurts ahead in a Keynesian attempt
to induce the economy to follow, and a different pattern assumes
prominence. Agency requests are less a function of what Congress
previously granted and more a reflection of simply the agency's
prior request. Support for spending is so strong that *internal*
desires rather than external forces dominate.

Eventually, to be sure, deficit-spending-induced inflation
makes economic -- and political -- conditions change, bringing with
them a desire to *reduce* spending. Enter the third alternative
equation, with its gaming terms, in which Congress takes account
of past patterns of requests and seeks to counter them. What
happens? The rate of increase slows down but does not disappear.
Every time period shows an increase in the base from which sub-
sequent calculations are made. However the drastic effects of
the resulting even short term excess of government revenues over
expenditures inevitably lead to a sharp reversal of the anti-
spending climate (with the effects outlined in the previous para-
graph). Thus gaming must disappear to be eventually replaced by
the ordinary relationships modelled by our basic equations.

The alternative regimes effect different agencies -- for ex-
ample, agencies within and without the proportional cut mechanism

20. Davis, Dempster, and Wildavsky (1966), (1966), (1971), *op.cit.*

at OMB -- differently. In time series analyses across several
economic cycles, such as our early studies, we would therefore
expect econometric selection techniques to select non-basic
decision rules for agencies whose budget histories were princip-
ally determined by the shorter periods at the beginning and end
of the government spending cycles when spending rates are rapidly
adjusted. These are, respectively, the agencies most able to
increase appropriations and outlays in the early expansive phases
of a cycle and those most able to resist cuts in increased re-
quests during the downturn when public expenditure must be severely
restrained.

Why, to add our refrain to those of many others, does spending
nevertheless go up but not down? Everyone knows that programs
develop clientele who combine to resist their dissolution. It
is not so obvious that the ideas of progress and equality combine
to generate programs that always increase in size. Progress is
translated to mean that no benefit once conferred may be elimi-
nated or reduced. Equality is interpreted to require that no one
who is qualified should be rejected even if that means allowing
in some people who are not. Hence, when considering welfare re-
form, the only way out of these constraints is to increase the
size of the program so all will get more. On the other hand,
decreases in spending create difficulties for the bureaucracies
in governmental agencies. This occurs not only because they are
empire builders, or because it hurts to disappoint colleagues and
clientele, but because of the need for equity in internal rela-
tions within the executive branch. Agencies do not normally con-
trol one another, even within the same departments. They lack
levers to alter each other's behavior. They could, of course,
appeal to the President through the OMB but that would be danger-
ous; OMB might prove hostile to their cause or undependable. So
it is far safer to negotiate alliances within the bureaucracy.
And whatever the bases of these alliances, they must not be based
on merit because no one either knows or is able to agree on that.
Certainly this is what we found when we discovered that our isolated
agency models were in many cases inadequate. Instead, OMB allo-
cates decreases, from agency asking price, by fair-shares.

Should internal dislocations within the bureaucracy threaten to become severe, moreover, the burden of change can be shifted to the future or to the private sector or both. When Lyndon Johnson discovered the appropriation-outlay game, he was able to keep next year's expenditures under his $100 billion target in return for which future obligations were increased. Evoking the private sector is even easier because it requires no explicit decision. When expenditures increase faster than national product, and when substantial proportions are indexed against inflation, the money has to come from somewhere, namely, from a corresponding shrinkage of the private sector.

In sum, there is no mechanism that compels a consideration of the relative merits of public policies or of the public or private sectors. In government, resource allocation has become resource addition. The consequences of this expansion of expenditure for the economic cycle are now becoming clear.

3. THE ENDOGENOUS GOVERNMENT: FORGET KEYNES

A touch of recession makes the whole world Keynesian.
                                    Professor Herbert Stein

It's like rearranging deck chairs on the Titanic.
                                    Anon. Congressman

We now turn to a brief analysis of the effects of public spending in generating an economic cycle, using a simple macroeconomic model developed previously.[21] The distinctive feature of this model of momentary macroeconomic equilibrium -- in contrast to both its eclectic Keynesian and Monetarist equivalents -- is that in comparative static analysis it is capable of generating the range of behavior exhibited by the U.S. economy, *including stagflation*, in the various regimes of the cycle. Our present

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21. M.A.H. Dempster, A crude model of the modern economy, Center for Advanced Study in the Behavioral Sciences, Stanford, California (1975). Revised January (1976); M.A.H. Dempster and Otto A. Davis, On macro-economics: Comparative statics, Center for Advanced Study in the Behavioral Sciences, Stanford, June (1975). Revised January (1976).

purpose is merely to outline the dynamics of the economic cycle
resulting from the *mutual* interaction of the economy and polity,
from the theoretical -- i.e. model -- viewpoint. The construction
of a full dynamic model reproducing the public policy induced
economic cycle is left to future work.

In recent times, Professor Friedman has revived a sophist-
icated version of the original quantity theory of money which
holds that the only effective policy instrument in the hands of
the government is the control of the money supply. Although
there has been much debate between the Neo-Keynesian and Monetarist
schools of macroeconomic theorists, a popular conclusion is that
neither addresses the problems of the modern economy.[22]

Table 4 sets out the comparative static version of a model
of the macro economy which attempts to synthesize and extend
recent eclectic Keynesian and Monetarist views in light of the
findings reported in previous sections of this paper. The ac-
companying Table 5 lists the variables and exogenous parameters
in this model of short term macroeconomic equilibrium. The model
explicitly attempts to represent at the macro level the productive
sector of the economy, the government expenditure process, and
the behavior of the central banking authorities and the private
banking sector. Debt financing, open market operations, trade
balance and foreign capital transfers influence real activity
and inflation through the money and stock markets. The six equa-
tions determining real output, investment, employment, profit,
the price level, and the interest rate have previously been ana-
lyzed with respect to both domestic policy parameters and the
effects of the global economy as represented in the balance of
payments and net foreign capital transfers.[23] The analysis of
the productive sector is essentially neoclassical with the excep-
tion that the wage rate is allowed to depend on the price level

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22. c̲f̲. Walter W. Heller, What's right with economics? Presi-
     dential address to the American Economic Association, San
     Francisco, December 29, 1974.

23. The reader is referred to Davis & Dempster (1975), *op.cit.*,
     for details. For a discussion of related research see
     J.P. Crecine, M.A.H. Dempster and Aaron Wildavsky, Budgets,
     bureaucrats and the Executive: Influences on the size of
     the public sector, to appear in *Proceedings of the Conference
     on the Causes and Consequences of Public Sector Growth*, Dorado
     Beach, Puerto Rico, Nov. 1-5, 1978, P. Aranson & P. Ordeshook,
     eds.

Table 4

A Macroeconomic Model with Endogenous Governmental and Productive Sectors

Production

Production function:	$Y = f[(1-\delta)K + I, N]$
Definition of profit:	$P\Pi = PY - rPI - w(P)N - r(1-\delta)PK$ (1)
Investment equation:	$f_K(I, N) = r$ (2)
Employment equation:	$Pf_N(I, N) = w(P)$ (3)

Expenditure

National income identity:

$$Y = c(Y-T, W) + I(r, P) + G + X/P + F/P \qquad (4)$$

Tax function:	$T = t(PY; \tau)/P$
Government expenditure:	$G = g(PY, U; \gamma)/P$
Government income identity:	$G = T + \Delta$ (5)

Capital and Money Markets

Stock Market index: $S = s(\Pi, Y, r, P; X, F)$

Definition of wealth:

$$W = [(1-\delta)K + I] + \left(\frac{M}{P} + \mu\nu\Delta\right) + [(1-\mu)\ \nu\Delta + \frac{B}{rP}]$$

Demand for money:

$$L = \tau(Y, W) + n(s)\ I = \ell(Y, r, P; X, F)$$

Supply of money

$$M/P = m(r, P, \nu(1-\mu)\Delta + \frac{B}{rP}, \mu\Delta, \lambda; F, \rho, R) = M(r, P, Y; \lambda, F)/P$$

Money market equilibrium: $M(r, P, Y; \lambda, F)/P = \ell(Y, r, P; X, F)$ (6)

Source: Davis & Dempster (1975), op.cit.
       Subscripts in (2) and (3) denote partial derivatives.

Table 5

Parameters and Variables of the Macroeconomic Model

Given:

K - existing capital stock,

δ - rate of capital depreciation,

N_0- work force,

X - net exports,

F - net foreign capital transfers,

τ - gross tax rate,

γ - level of government activity,

Δ - real government deficit,

ν - proportion of new government debt held domestically,

μ - proportion of new government debt monetized,

B - existing stock of government bonds,

λ - open market activity level,

ρ - rediscount rate,

R - reserve requirement,

the six equations (1-6) of Table 4 determine the six variables:

1. I - real investment,

2. N - employment (or unemployment, $U = N_0 - N$),

3. Y - real GNP,

4. Π - real profit,

5. r - interest rate,

6. P - price level (GNP deflator).

in order to represent collective bargaining processes. This
analysis allows a consideration of output, investment and unem-
ployment in terms of the relative effects of the price level and
the rate of interest on capital and labor intensities at (momen-
tary) equilibrium. A by-product is an analysis of the conditions
under which the Phillips curve can be expected to hold locally
about the current position of the economy.

Although the textbook national income identity supplemented
by a tax function representing a progressive tax structure in
nominal GNP is retained, the standard government expenditure
parameter has been replaced with a government expenditure func-
tion based on our findings. We argue that the lags in fiscal
policy are such that, barring a major change in government activ-
ity level, government expenditure is better modelled as reacting
to *nominal* GNP -- which incorporates both real and price effects --
and unemployment.

The modelling of the capital markets is radically different
from that generally accepted by both Keynesian and Monetarist
schools of macro-economics. Although the implicit treatment of
the bond market as moving in parallel with the stock market is
retained, the stock market index, reacting to the natural finan-
cial and real variables, is introduced explicitly as the principal
determinant in the demand for money (including credit) for invest-
ment in new capital. This demand has replaced the standard
Keynesian speculative demand for money, which here appears on the
supply side of the money market equation. The demand for money
term in the model of Table 4 is, through the stock market, a major
link between financial and productive sectors of the economy.
The treatment of the supply of money intimately links the response
of the money market, and hence the economy, to the marginal re-
sponses of taxation and government expenditures to changes in
nominal GNP.

The response of the model to changes in the major public
policy parameters is capable of exhibiting a wealth of behaviors
ranging from the classical to the target behavior of both the
Keynesian and Monetarist schools of macro-economics. With regard
to the controversy between these two Schools, the most important

parameters of Table 5 are: the gross tax rate τ, the level of government activity parameter γ[24], the real government deficit Δ, the open market activity parameter λ and the proportion of new government debt monetized μ. The proportion of new government debt held domestically ν is probably outside the government's control, and would in any event probably be taken as exogenous. When the U.S. Government has large deficits, it is very important how much of this new debt can be sold to the public as government securities and how much must be sold to the Federal Reserve, debt which will then, eventually at least, find its way into the money supply.

Analysis of the model shows that its behavior in response to changes in policy parameters can be divided into four regimes determined by the relative sizes of three parameters: the ratios of the marginal responses of real activity and the money market to real output Y, the interest rate r, and the price level P. The marginal response of the money market to changes in these variables is in terms of the excess demand for money; the marginal response of real activity in each case is more complicated. Under a reasonable set of further assumptions the behavior of the model in the four regimes follows.

The first regime corresponds to the classical economy, while the second regime corresponds in one mode to the extreme Keynesian view of the world and displays in the other mode the unpleasant modern phenomenon of *stagflation*. In this and the remaining two regimes -- which are of central interest for the effects of public spending on the economic cycle -- the response of investment, un-employment, and profit to government spending will depend on the behavior of the wage rate with respect to the price level.

The third regime provides a description of the performance of western economies during the early post-war period. In this situation, real GNP, the price level and the interest rate move together in response to policy variables. This is the model

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24. Note that by this parameter we model, not the month-to-month demand tuning of theoretical Keynesian macroeconomics, but rather the major changes in Federal Government activity levels induced by wars and such programs as Johnson's Great Society and NASA's Lunar Landings.

regime consistent with the classical business cycle; real growth
is accompanied by inflation and an increasing interest rate,
while real decline is accompanied by a falling of the price level
and interest rate. Although an increase in government activity
or the money supply occasions growth in real GNP, it is accom-
panied by an increase in both the price level and the rate of
interest. Conversely, the tightening of the money supply de-
creases the price level and the rate of interest, but only at
the expense of a decline in real GNP.

In the fourth regime, the model displays in one mode -- when
the marginal response of the price level to an increase in real
government deficit is negative -- the behavior which has been the
target of Keynesian fiscal policy in the post-war period; in the
other -- that of positive price level response to deficit incre-
ments -- it again displays the stagflationary response.

We have seen that the response of the model economy to changes
in the policy parameters is capable of exhibiting a range of be-
havior. Unlike the standard textbook analyses, however, our ana-
lysis shows that the effects of domestic policy variables will
be radically different depending on the values of the structural
parameters. The effects of monetary policy have been seen to
depend on the relative magnitudes of the marginal increases in
taxation and government spending with respect to nominal GNP --
i.e. *net marginal (nominal) government impact*. In the situation
that marginal government spending exceeds marginal government
taxation with respect to nominal GNP, we may expect the relative
share of government expenditure in GNP to grow with the growth
of the economy, *however growth is induced.*

We have reported the analysis of the response of the short
term equilibrium represented by the solution of the model to policy
parameters one at a time. In practice, of course, they are moved
simultaneously -- often in opposition to each other. In the model
the *marginal* effects of these parameters may be added, but, even
if the conditions for the target regimes of both Keynesian and
Monetarist Schools are met, the effects of increased government
expenditure could be overwhelmed by a tightening of the money
supply to produce a decline in real GNP. A similar occurrence

with regard to relative *rates* of growth -- when money supply expansion was insufficient to fund Korean War defense expenditures -- was probably responsible for the 'pause' in the growth of the U.S. economy in 1953-54, see Figure 1.[25]

The next such period, in 1957-58, was again the result of fiscal and monetary policy operating in conditions valid for the target regimes of both Keynesian and Monetarist Schools. Eisenhower, in an attempt to reverse the increments in the public debt due to Korea and to Keynesian expansionary policy during the post Korean War recession, operated a tight fiscal policy throughout the next business cycle boom -- actually running a Federal surplus from early 1955 through 1957. In the second half of this period, tight fiscal policy was roughly balanced by counteracting expansionary monetary policy. Early in 1957, however, in order to stop the inflation generated by an overheating economy, money supply growth was reversed -- to intially halt growth in the third quarter of 1957 and send the economy into recession in the fourth.

The steady growth and mild inflation over the period 1961-65 (prior to the start of the 1966-70 cycle) was the only period in post-war U.S. economic history in which not only were conditions for the achievement of the *medium term* target regimes of both Keynesian and Monetarist policies valid, but economic stabilization was broadly achieved. Nevertheless, under steady bureaucratic and political pressure for expansion throughout the period -- Federal government expenditures grew in real terms over the longer term.

The remaining three recessionary periods -- 1960-61, 1969-70 and 1974-75 -- were consequences of an economic cycle induced by public spending. Now we shall attempt a general description of the two principal phases of such a cycle in terms of appropriate modes of the third and fourth regimes of the short term macroeconomic model of Table 4. Beginning as a response to recessionary conditions -- as in 1961 or 1970 -- or autonomously through Presidential policy -- as in 1966 -- both fiscal and monetary policy is strongly expansionary. This early point in the cycle is modelled by regime three of the model in which real GNP, the price

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25. Recessionary periods are shown shaded in the graphs of
    Figure 1.

level, and the interest rate move upward together, since effective
marginal wage escalation due to collective bargaining is small,
while net marginal nominal government impact -- the excess of
government expenditure over receipts at the margin -- is strongly
positive. The second half of this first phase -- still in model
regime three -- is characterized by increasing inflation, due to
the response of the price level to the effects of expansionary
fiscal and monetary policy and to accelerating wage claims. In
model terms, effective marginal wage escalation is increasing,
while net marginal government impact is declining due to the
interaction of inflation with the progressive tax structure to
raise tax take relative to less rapidly expanding government ex-
penditures -- to produce a Federal budget surplus. These stringent
fiscal policy measures are reinforced by a contraction of the
money supply, cf. Figure 1 (1960, 1969 and 1974). By this time,
exaggerated claims (justified by inflation) have escalated wages,
while the increment of tax take over that of government spending
in current dollars has increased. In model terms, these are the
conditions for regime four in which the marginal price level
response to *expansionary* fiscal or monetary policy is *negative*.
If fiscal and monetary controls were to be relaxed at this point
in the cycle, real economic expansion and price stabilization
would result.[26] Since, however, both fiscal and monetary policy
instruments are strongly restrictive at this point in the cycle
in a vain and mistimed attempt to counteract inflation, the
result -- both in the model and the real world -- is *stagflation*,
a simultaneous decline in real activity, accompanied by increased
interest rates, and continuing inflation.

The current dissatisfaction with economic management is
amply justified. Economists have not been of much help to the
economy. Standard theories do not work and alternatives are not
much better. By the time econometric models are perfected they

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26. In the above model analysis the interaction of domestic
    policy and international trade and financial considerations
    has of course been ignored through taking the latter (X, F
    and ν of Table 5) as fixed. In this regard see H. Sneesons,
    Inflation in Western economies, CORE Discussion Paper 7819,
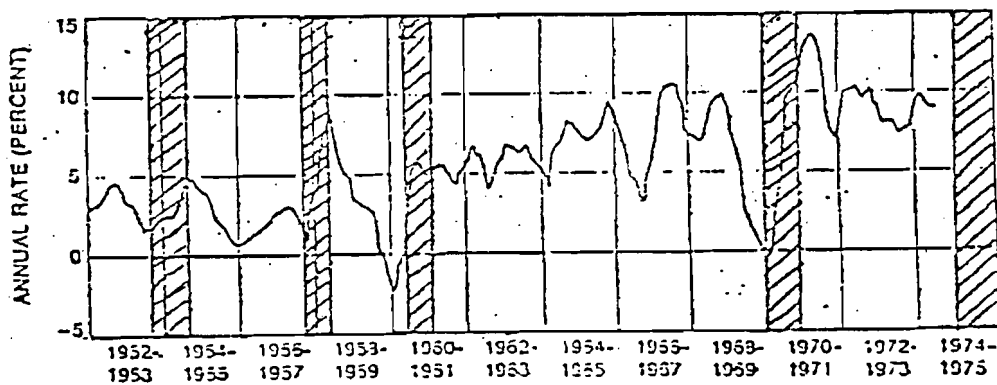   Universite Catholique de Louvain, May (1978).

Figure 1

The Business Cycle Induced by Public Policy
Federal Deficits and Easy Money Generate Inflation
Federal Surplus and Tight Money Generate Recession

Federal Government Deficit/Surplus
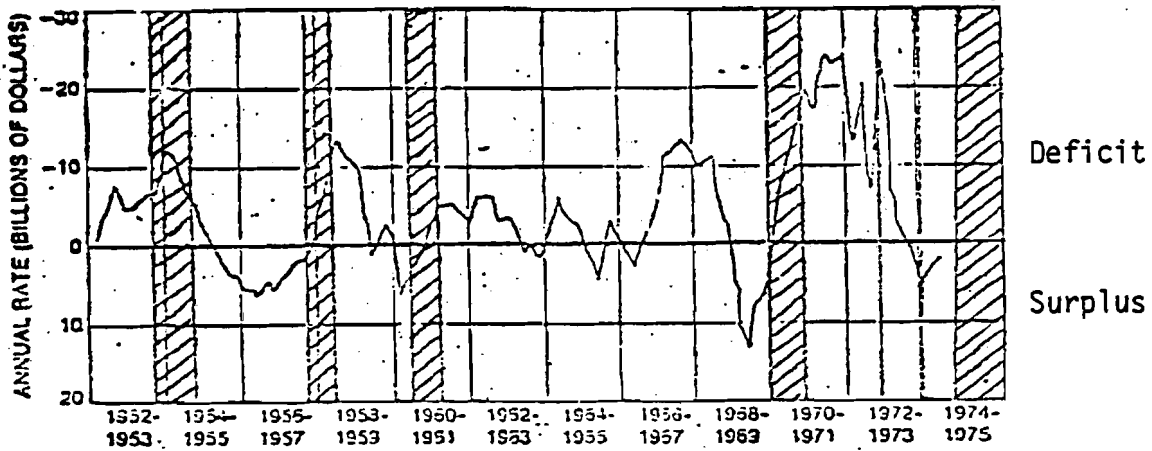
Rate of Change of Money Supply

Periods of recession are shown shaded.

appear as relics of a bygone era. The main problem, as we conceive it, is that most existing models do not generate a sufficient variety of behavior.[27] Therefore when a new situation occurs, the result is to discredit existing models, and what is worse, economic analysis. By bringing in a wider variety of considerations -- from the presence of the production sector of the economy to the impracticality of manipulating totals of government spending and the necessity of marketing the government debt -- the present model generates a wide enough variety of economic behaviors to be appropriate to the historical conditions experienced by real economies in different regimes.

Political and bureaucratic pressures for increased government spending are omnipresent. As inflation accelerates towards the end of the expansionary phase of the cycle, it has become common practice for the Executive to indulge in much rhetoric concerning wage and price guidelines, policies, controls, etc. This is always a vain attempt to stem the wage and price increases which are natural consequences -- captured in the model -- of the inflation which the Administration has itself induced. As the government initially spends rapidly to rise from a recession, it must market its debt and thus eventually expand the money supply. Wages, which had been near their marginal product, increase as the cost of living goes up. Fearing inflation the government seeks to cut spending and restrict the money supply. At the same time, however, taxes are going up due to inflation, so there is less apparent need to close the gap and spending is, in any event, difficult to reduce. When restrictive action is finally required, it must be all the more severe. Each time the cycle is repeated, the spending level is higher. Currently, government has become so to speak, the nation's largest firm, to which other firms have adjusted so that a substantial reduction in governmental demand has serious economic consequences. Nevertheless, throughout the post World War II period, virtually steady growth in the relative size of the public sector has been the *long term* result.

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27. An exception to this statement is presented by models of constrained economic equilibria, but these have so far failed to handle dynamic considerations satisfactorily and in any event appear to us to rest on a very thin empirical base.

4. THE LONG RUN: RECALL SCHUMPETER, MISES AND HAYEK

In the previous section we used a momentary, i.e., short
term macro-economic model to analyze the medium term public policy
induced economic cycle. In this final section of our paper we
attempt to identify the longer term effects of the growth of the
bureaucratic public sector.

Consider first the behavior of the empirically based models
of the Federal budget/expenditure process set out in Section 2
(equations 1-5). We have seen in Section 2 that the magnitudes
of the fundamental Executive markup and Congressional markdown
for an agency's appropriation are subject to periodic ratchet
adjustments to keep an agency's expenditures on a politically
expedient course. The implication is that bureaucratic momentum --
in the face of complexity and uncertainty -- keeps the budgeting
behavior of the relevant process participants stationary until
the organizationally perceived penalties for failure to act ex-
ceed the combined costs of search and changeover involved in the
adaptation to a new budget path.

For the participants on the Congressional side of the budget
process, this pressure for change largely manifests itself at
times of partisan changes in the Presidency and the composition
of the House and Senate. At these epochs, significant internal
political costs are attached to maintaining the *status quo ante*.
Partisan forces, together with medium term fiscal policy consider-
ations, are also present as environmental influences on the Ex-
ecutive. But there is an additional necessity for periodic change
inherent in the use of the proportional cut as a fair Executive
allocation/coordination mechanism for agency requests. The pro-
portional cut mechanism has since 1921 doubtless saved consider-
ably the time of Congressional appropriations committees in
relieving them from 'exploding the visionary schemes of bureau
chiefs for which no administration would be willing to stand
responsible'.[28] In conjunction with the other decision rules it
has however the unacceptable property that if left to run its
course over the years in an era of expanding total expenditure,
the largest budget unit would eventually swallow the total.

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28. H. Rept.No. 14, 67th Cong., 1st Sess., at 4.

Clearly, periodic adjustment to such a dynamically unbalanced inter-agency coordinating mechanism is a matter of organizational *necessity*. It should therefore not be surprising that the opportunity will be taken at times of partisan and other environmental change to move agencies across the boundaries of the proportional cut or to otherwise bring its allocative results back on the currently expendient course.

Notice that what we have called the *gaming term* in the equations governing the demand and supply of an agency's appropriations -- i.e. the difference between the previous years appropriation and agency request -- has the stabilizing effect of distributing periodic major shocks across both sides of the process. However, nothing serves to permanently change the continual pressure for growth embodied in inflated agency requests and only partial Congressional pruning of the resulting increment, represented in the model by the time varying leading coefficients of the equations. That this phenomenon is another undesirable consequence of the proportional cut allocation mechanism -- coupled with the limited review capability of the central budget organization (OMB) -- has been pointed out by Shubik in his game theoretic analysis of an executive budget process.[29]

Taken together, the properties of the process represented by the models of Section 2 imply relatively infrequent adjustments of their incremental growth dynamics to partisan changes, Presidential ambitions and the periodic (mistaken or, at least mistimed) anti-inflationary fiscal stringencies which form part of the public policy induced business cycle. In summary, we have seen that from the short term point of view the growth of government has been the engine of the growth of economy.[30] When the intertemporal credit represented by a deficit in its operations is too large, inflation results; when this credit is called in,

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29. Shubik (1970), *op.cit.*

30. It is interesting to note that the *necessity* for this state of affairs was explicitly argued by Alvin H. Hansen in the late 40's, see Robert L. Heilbroner, *The Worldly Philosophers*, Simon & Schuster, New York (1961), Chapt. 10. Hansen saw underlying population growth -- Harrod's 'warranted' growth -- as insufficient to allow capitalist industrial economies to continue to expand. But this view ignores the role of technical progress and the possibility of a service, versus a goods, based economy.

recession -- with continuing inflation -- is the consequence. This is a government expenditure induced 'business' cycle. President Carter is at the time of writing keeping silent on the present rapid speedup in Federal outlays to counter the effects of the current recession. Meanwhile, pre-election Congressional economic policy debate centres on "necessary" upwards revision of the Federal budget deficit for the fiscal year (1981) beginning on 1st October and the Federal Reserve has completely reversed its tight money policy of the first two quarters. Inflation continues unabated.

Consider next the long run. The perception that competitive markets operate *dynamically* like a Darwinian biological selection environment for firms -- supporting the survival of sufficiently adaptive variants and leading to the demise of the remainder -- was explicit in the writings of many of the great 19th century economic theorists. In the first half of this century the evolutionary approach to competition was clearly set out by Schumpeter, Mises and Hayek.[31] More recently, this view of market processes has been re-emphasized in a number of articles by Nelson and Winter, who have summarized it variously as follows: -

> In a stylized Schumpeterian evolutionary system, there is both a carrot and a stick to motivate firms to introduce 'better' production methods or products. Better here has an unambiguous meaning: lower cost of production, or a product that consumers are willing to buy at a price above cost. In either case the criterion boils down to higher monetary profit. Successful innovation leads to both higher profit for the innovator and to profitable investment opportunities. Thus profitable firms grow. In so doing they cut away the market for the noninnovators and reduce their profitability which, in turn, will force these firms to contract. Both the visible profits of the innovators and the losses experienced by the laggers stimulate the latter to try to imitate.[32]

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31. See, for example: Joseph A. Schumpeter, *The Theory of Economic Development*, Harvard University Press, Cambridge (1934), and *Capitalism, Socialism and Democracy*, Harper & Row, New York (1950); Ludwig von Mises, *Human Action*, Yale University Press, New Haven (1949); and Friedrich A. von Hayek, *The Road to Serfdom*, Chicago University Press, Chicago (1944). For an elegantly succinct statement of this dynamic -- as opposed to the static neoclassical relative price -- role of the market, see Hayek's Chapter 12, Competition as a discovery procedure, in his *New Studies in Philosophy, Politics, Economics and the History of Ideas*, Routledge & Kegan Paul, London (1978).

32. Richard R. Nelson & Sidney G. Winter, In search of useful theory of innovation, *Research Policy* 6 (1977), 36-76, p.64.

> Hayek proposed that the central problem of economic organization was to *respond to change* -- change in demands, change in factor supply conditions. He argued that a socialist regime ... would be slow and cumbersome in response. To get rapid response one needs 'real' markets, real profit incentives. It should be emphasized that his argument was *not* about 'optimality'; it was about effective and speedy *adaptation*. This is not what the theory of modern welfare economics including that concerning public goods is about. Note also that Hayek was not arguing that the competitive market system was ideal in any sense. Rather, he was *implicitly* arguing the demerits of large governmental bureaucracies.[33] [Italics added]

Bureaucratic process innovation is closely related to changes in the nature of government provision of goods and services for short term consumption, while product innovation in government relates to research, development and construction activities involved in longer term investment in energy production, aerospace, medical and educational technology, etc. As is the tendency in the private sector -- but to the considerably greater extent demonstrated by the empirical models of Section 4 -- bureaucratic *process* innovation is shielded from environmental influences and must result, when it does, from internal pressures. On the other hand, while external influences must *eventually* determine innovation and change in the longer term investment activities of government, just as in the market sector, the interaction of the political decision making process with the slow reacting bureaucratic dynamic must alone tend to reduce adaptability.

How might selection be introduced into the expenditure process? Are there structural changes which, when introduced, would lead to less inflationary outcomes? We have seen that intertemporal opportunity cost considerations, giving up something now for what you get later, are not effective in government over long time periods. More for one agency and program need not, over time, lead to less for another. The problem, to paraphrase an earlier comment, is how to make allocation over time more like subtraction and less like addition.

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33. Richard R. Nelson & Sidney G. Winter, Firm and industry response to changed market conditions: An evolutionary approach, Ins. for Social and Policy Research Working Paper No. 788, Yale University, January (1978), p. 29.

The most direct approach to a less inflationary expenditure
process would be to prevent spending from exceeding productivity
by limiting it to a fixed proportion of Gross National Product,
or some other more appropriate measure. Assuming such a limit
could or would be enforced (big assumptions that we will not go
into here) it would give outside interests a stake in productivity
as well as distribution since the latter would depend on the former.
Inside the bureaucracy, an expenditure limitation would create a
strong disincentive against inflationary measures. For whenever
the inflation rate exceeded productivity increases, the effective
purchasing power of governmental agencies would decline. At the
limit, something new would have to displace something old. Fair-
shares would be less likely to operate within a context of de-
clining real resources; internal conflict within the Executive
would be intensified. Another way of saying this is that collu-
sion would be replaced by competition. Instead of regarding
policy evaluation as an external excrescence, ignored when possible
and distorted when not, interest in efficiency would grow, as
would efforts to uncover weaknesses in other agency's programs.
Logrolling, whether in the legislature or the Executive, would
continue, of course, but in a new competitive context; each co-
alition would not only augment returns to its members but suggest
decreases in returns to others. There would be less internal
harmony and more information for outsiders.

Obviously, the stability of spending agencies would be im-
paired. One way of looking at it is that their bureaucratic
instability is our citizen stability. Another point of view,
since 'they' are also 'us' acting in a collective capacity, is
that agencies *need* a stable environment in which to carry out our
desires. If spending patterns are to change so as to smooth out
the economic cycle described above, instability has to be allo-
cated like any other good. Perhaps sufficient has been said here,
however, to suggest that government spending is not the world's
best or most flexible instrument for short-term economic manage-
ment. Varying the tax take is surer and swifter, though of course
also subject to political pressures. Were spending totals fixed
relative to national product, it would be easier to agree that

social issues involving spending thus constrained should be argued on their relative merits. Without worrying about the possibility that avaricious spending would devour the national patrimony, it may be possible to secure stability in spending for socially desirable objects.