PUBLIC CHOICE

Expenditures and votes:
In search of downward-sloping curves in the United States and Great Britain*

ALFRED G. CUZÁN**

RICHARD J. HEGGEN***

Abstract

An earlier paper showed a negative relation between increases and accelerations in F, the ratio of federal expenditures to GNP and E, the reelection or defeat of the incumbent party in the White House over the last 100 years. This paper argues that there also exists a negative relation between V, the percentage of the popular vote cast for the incumbents, and F. This function is displaced by wars and depressions and can drift over time, making it difficult to discover negative curves in the data. Dividing British and US data for the last 50 years into party periods yields clearly discernable negative functions for F and V for the incumbents.

Introduction

In an earlier paper on federal expenditures and presidential elections in the United States (US), we found that in 21 of the last 26 elections, fiscal expansion was followed by the defeat of the incumbents and fiscal cut-back by their reelection (Cuzán and Heggen, 1982). Those findings are consistent with Niskanen, who found a negative relation between real per capita federal expenditures and percent of the vote won by the incumbent party in the White House (Niskanen, 1979).

In this paper, we show that fiscal policy and election results in Great Britain (GB) since 1935 behave in much the same way as in the US. We explain why fiscal expansion politically damages the incumbents with an economic model of expenditures and votes. The model incorporates a number of con-

cepts and hypotheses familiar to Public Choice readers. These are Wagner's Law, Peacock and Wiseman's displacement effect, Downsian two-party competition, Niskanen's budget maximizers, Tullock's politician, and the median-voter theorem.

The model: I

Table 1 describes five variables that make up the model. Three of the variables are fiscal: F, the ratio of expenditures to GNP; $\dot{F}$, the change in F between election years; and $\ddot{F}$, *the change in $\dot{F}$ between election years.* These variables are equivalent to the physical concepts of relative position, velocity, and acceleration/deceleration, respectively. The electoral variables are V, percent of the vote received by the party's candidate; E, reelection or defeat of the incumbent party; and P, percent of parliamentary seats won by the incumbent party in GB.

The functioning of the model rests on two fundamental hypotheses. The first is that F and V are negatively related as shown in Figure 1. F and V are inversely related because they are equivalent to a fiscal 'price' charged

Table 1. Fiscal and electoral variables, United States and Great Britain

| Variable	Country United States	Great Britain
F		$F = \dfrac{\text{Central government expenditures}}{\text{Gross National Product}}$
$\dot{F}$		$\dot{F} = \dfrac{F_t - F_{t-1}}{F_{t-1}} = \dfrac{dF/F}{dt}$
		where t is an election year and $t-1$ a previous election year
$\ddot{F}$		$\ddot{F} = \dot{F}_t - \dot{F}_{t-1}$
V	Percent of the popular vote won by incumbent party in the White House	Percent of the popular vote won by party that controls the Cabinet
P		Percent of parliamentary seats won by party that controls the Cabinet
E	Election outcome for incumbents, coded $+1$ (reelections) or -1 (defeat)	
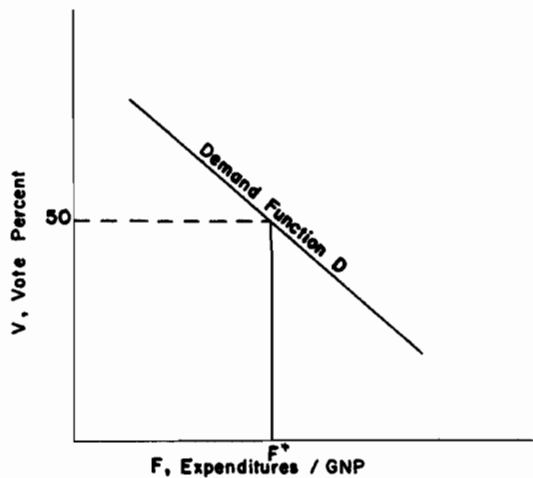
Figure 1. Expenditures and votes: A negative demand function for incumbents

the economy by the government, and to political 'demand' for the incumbent party, respectively. According to the first law of demand, the higher the price, the smaller the quantity purchased or consumed. Hence, the higher F, the smaller the support found for the incumbents in general elections (and, we might add, for 'government' in general). This presumes that if the price (F) is too high, the individual voter registers his displeasure by voting for any party but the incumbents. Hence, a downward-sloping political demand function expresses the relationship between F and V. This is shown by the D curve in Figure 1.

The second hypothesis of the model is that the incumbent party wishes to maximize expenditures provided it receives sufficient votes to be re-elected. This is similar to the desire of a firm to charge the highest possible price while remaining competitive in the market. Whereas the firm utilizes revenues to cover costs and make a profit, the incumbent party allocates expenditures to reduce interest-group pressure, reward its leaders and supporters, and influence public policy. Some parties may sacrifice reelection in order to exert an extraordinary influence on public policy or society for a short period, but, in general, parties seek to discover how much they can spend without incurring defeat. Thus, the model combines the Downsian notion of reelection-minded parties with Niskanen's budget maximization bureaucracy. The incumbent party, hoping to be reelected, yields to the bureaucracy but only up to a point, raising F no more than can be done and still retain power.

In a two-party democracy, where the incumbents are defeated if they fail to win at least 50% of the vote F grows until it reaches F^*, at a V of half the votes cast. F^* is the optimal or equilibrium level of expenditures for the

incumbent party. Beyond F^* it is defeated; below F^* it can spend more and still get sufficient votes for reelection. Note that F^* splits the electorate in half – those who prefer a higher and those who prefer a lower F. The equilibrium level F^* belongs to the median voter, as in other public choice models (Buchanan and Flowers, 1980).

This concludes the initial description of the model. In the following section, we test fiscal-electoral hypotheses derived from the model with American and British data. After that, we return to the model for additional theoretical specification. Then we do additional testing. We conclude with general observations about expenditures and votes.

Hypothesis testing: I

In the earlier paper, we tested for a negative $F-V$ function by examining the effects of $\dot{F}$ and $\ddot{F}$ on E. $\dot{F}$ and $\ddot{F}$ represent the incumbent party's fiscal policy relative to its predecessors. Different combinations of values for these two variables make up different kinds of policies, as shown in Table 2.

Table 2 also shows our hypothesized electoral effects of each policy. On the basis of a negative relation between F and V, and assuming F is near or at equilibrium, we hypothesize that expansionary policies will result in defeat and cutback policies in reelection of the incumbents.

An expansionary policy is one in which either $\dot{F}$ or $\ddot{F}$ or both are positive and neither is negative.

A cut-back policy is one where $\dot{F}$, $\ddot{F}$, or both are negative. Even in the case where $\dot{F}$ is positive, if $\ddot{F}$ is negative there has been a reduction in the rate of growth (velocity) in F, i.e., a deceleration. That is a form of fiscal cutback.

A third policy, the steady-state, occurs when both $\dot{F}$ and $\ddot{F}$ are close to zero. For the purpose of this paper, these variables take a value of zero if they fall between -2 and $+2$.

Table 2. Fiscal policies and hypothesized election outcomes

Fiscal policy	$\dot{F}-\ddot{F}$ combination	Hypothesized election outcome
Expansionary	$\dot{F}$ or $\ddot{F}$ greater than zero but neither less than zero	Defeat
Cut-back	Either $\dot{F}$ or $\ddot{F}$ less than zero	Reelection
Steady-state	$\dot{F}$ and $\ddot{F}$ equal to zero	Indeterminate

Table 3. Fiscal policy and election outcome, United States, 1880–1980

Election outcome	Fiscal policy		
	Expansionary	Cut-back	Total
Reelection	2	12	14
Defeat	9	3	12
Total	11	15	26

Chi square = 9.64; *df* = 1
Significant at .005 level

Source: Appendix A.

Table 4. Fiscal policy and election outcome, United States, 1936–1980

Election outcome	Fiscal policy		
	Expansionary	Cut-back	Total
Reelection	1	6	7
Defeat	4	1	5
Total	5	7	12

Chi square = 5.09; *df* = 1
Significant at .05 level

Source: Appendix A.

Table 5. Fiscal policy and election outcome, Great Britain, 1935–1979

Election outcome	Fiscal policy		
	Expansionary	Cut-back	Total
Reelection	1	4	5
Defeat	4	2	6
Total	5	6	11

Chi square: 2.49; *df* = 1
Significant at .15 level

Source: Appendix B.

We test the hypothesis shown in Table 2 with data from the US and GB assembled in the appendices. The US data include 26 elections held between 1880 and 1980. The data on GB include only 11 elections between 1935 and 1979, a period with a two-party system similar to the US. In the 1983 election, the two-party system broke down in GB. But for much of the period after 1935, elections were decided between the Labor and Conservative parties. (See also the Appendix for additional comments on British elections.)

Tables 3, 4 and 5 present data on fiscal policy and election outcome for the United States and Great Britain. Table 3 includes all 26 American elections held between 1880 and 1980 while Table 4 includes only the 12 elections held since 1936. This period is nearly coterminous with that of Table 5, which includes 11 British elections held between 1935 and 1979.

Chi-square analysis shows that the relationship between fiscal policy and election outcome is significant and in the direction we hypothesized. Fiscal expansion is usually followed by the defeat of the incumbents while fiscal cutbacks are normally followed by reelection. The relationship is stronger in the US than in GB. Eighty percent of the American elections and nearly 75% of the British elections conform to our expectations.

It is interesting to note that we did not find a single administration that pursued a steady state policy. There was always some policy change. This may reflect a political preference to distinguish every administration from its predecessor.

The model: II

Up to now we have discussed the political demand function as if the D curve in Figure 2 remained static over time. In this section of the paper we examine changes in the position of the curve caused by the 'displacements' of wars and depressions, secular forces like Wagner's Law, and changes in the legitimacy of the government. In the next section we search British and American history during the last 50 years for evidence of migrations or shifts in the fiscal demand curves of these two countries.

The displacement effect

Peacock and Wiseman (1961) and Kendrick (1955) noted the displacements in F caused by war or depression. During such periods of political and economic upheaval, F is known to take values much higher than what had been considered normal up to that time. After the crisis is over, F drops but settles at a level higher than before. They conclude that wars and depressions have a 'displacement' effect on F.
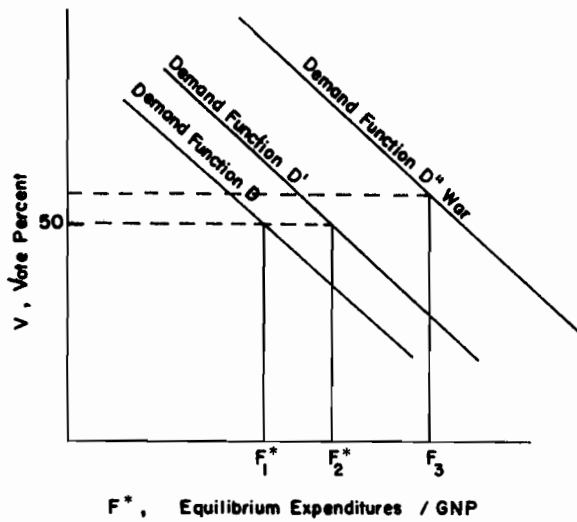
Figure 2. The displacement effect

The displacement effect is illustrated in Figure 2. Assume a stable pre-war period of F^*_1. In the next time period, the nation is involved in a world war. Such an event brings forth an upsurge in support for fiscal expansion. In our model, this is seen as a temporary shift in the demand function, from D to D''. F now reaches F_3. Once the crisis is past, D falls back, to D'. The result is a permanent shift in F^*, to F^*_2. (We do not consider F_3 a long-run equilibrium level, hence we label it simply F_3 instead of F^*_3.)

It is beyond the scope of this paper to discuss all the questions raised by the displacement effect. Our only purpose is to show that the phenomenon is incorporated into the model.

Wagner's Law

Another phenomenon readily incorporated into the model is Wagner's Law of Increasing State Expenditures. This holds that growing population and economies demand an increasingly larger state sector to service them with collective goods. Thus, F has a long-run tendency to more rightward. Figure 3 shows what happens as society's demand for state services relative to private goods rises over time. As demand for state services grows, the fiscal price the electorate is willing to pay the government rises. *Ceteris paribus*, this leads to a higher V for the incumbents, from 50% to, say, 60%. The incumbents utilize the added support to increase F until V falls to 50% again, reaching a new, higher equilibrium. If the process is repeated continuously, F^* migrates rightward, so that every decade F is observed to be higher than before.
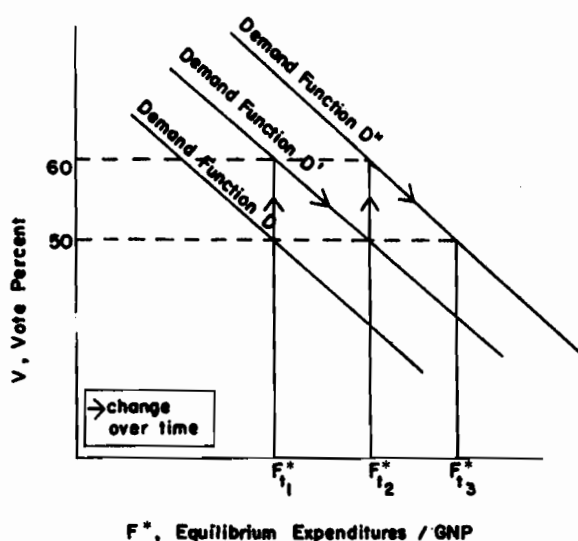
26

Figure 3. Wagner's Law

There is considerable debate over the universality of Wagner's Law. It appears to hold only for some countries and for certain periods of time (Buchanan and Flowers, 1980). For our purposes, it is sufficient to show that Wagner's Law can be easily added to the model.

Changes in legitimacy

In another paper, we argued that the optimal F for any government depends on its legitimacy (Heggen and Cuzán, 1981). The legitimacy of government has to do with the opinion its leaders, processes, and policies enjoy among the citizenry. It is roughly equivalent to its quality. The higher the public regards this to be, the higher F they support, *ceteris paribus*.

It seems reasonable to hypothesize that legitimacy grows with policy successes, victory in war, and the prestige of a nation's leaders. Conversely, defeat in war, reduced confidence in public officials, and perceived policy failures work in the opposite direction. These changes in attitudes and perceptions are influenced by ideology. Historically, a government's legitimacy can rise or fall, rise again, and so on in response to changes in ideology and events. This would have a pendulum effect on the D curve and, hence, F^*.

To sum up: The political demand curve does not stand still. Rather, it shifts and migrates in response to parameter changes. Three important parameters are: the occurrence of war, depression, or other major crisis; population and economic growth; and the legitimacy of the government.
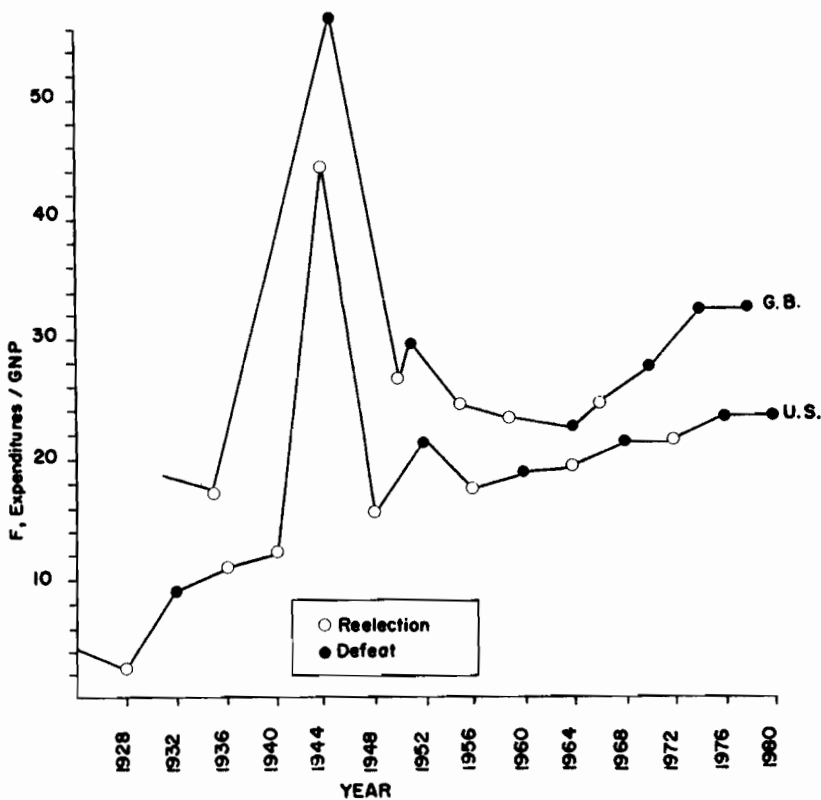
Figure 4. F and E, Great Britain and the United States, 1928–1980

Testing: II

Understanding the displacement effect and Wagner's Law is important for testing historical relationships between F and V. This is particularly true over long periods of time characterized by ideological revolutions, social and economic dislocations, and large wars. During the twentieth century, the US and GB have gone through several such periods, often simultaneously. Figure 4 compares the time-paths F has followed in each country (1928–1980 in US; 1935–1979 in GB). Note the similarities in direction and magnitude of change, distance between the paths and, generally, the slopes of the curves. Note also that the historical tendency, up to the 1970s, was for F to rise in both countries, suggesting something like Wagner's Law. Finally, note the large 'displacements' in F associated with the Great Depression, World War II and, in the US, the Korean War.

These changes in the F expansion path should be reflected in shifts and migrations in the D curve in both the US and GB. We examine each country separately.
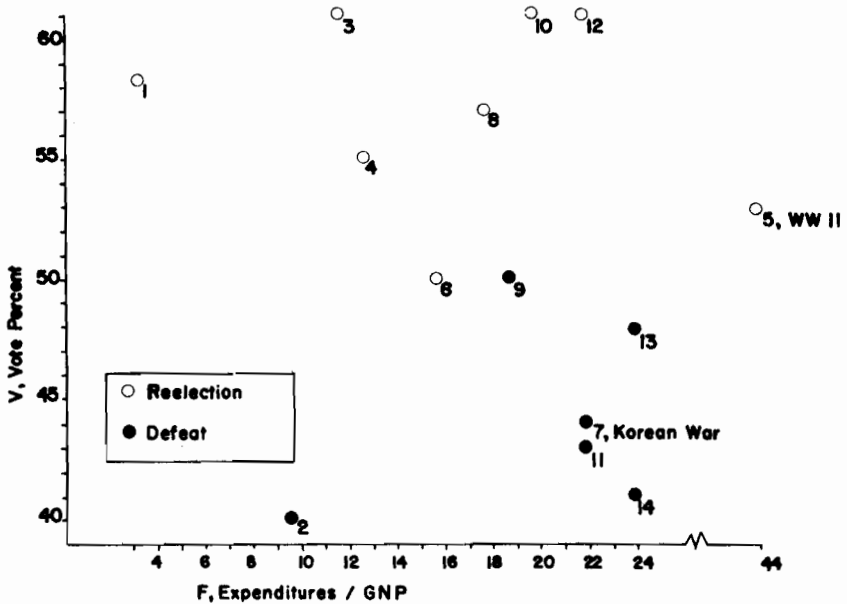
Figure 5. F and V, United States, 1928–1980

The United States

Between 1928 and 1980, F in the US behaves as if driven by a secular growth trend like Wagner's Law. It has grown from a maximum of 3% GNP through 1928, to nearly 25% in 1980. Yet, even in this period of fiscal expansion, we find that parties still face a downward-sloping curve during their administrations (recall Figure 3).

Figure 5 plots the values of F and V between 1928 and 1980. A white dot indicates reelection, a dark dot defeat. At first glance, there appears to be no relationship between F and V. Incumbents are reelected with large margins throughout the F range. Yet, Test I showed a negative relation between $\dot{F}$ and $\ddot{F}$, on the one hand, and E, on the other. How can this be?

Since $\dot{F}$ and $\ddot{F}$ represent the fiscal policy of the incumbent administration, we divided the data into periods coterminous with party incumbency in the White House. Omitting 1944, at the height of World War II, these are:

$$1928-1932 \ - \ \text{Republicans}$$
$$1936-1940-1948-1952 \ - \ \text{Democrats}$$
$$1956-1960 \ - \ \text{Republicans}$$
$$1964-1968 \ - \ \text{Democrats}$$
$$1972-1976 \ - \ \text{Republicans}$$
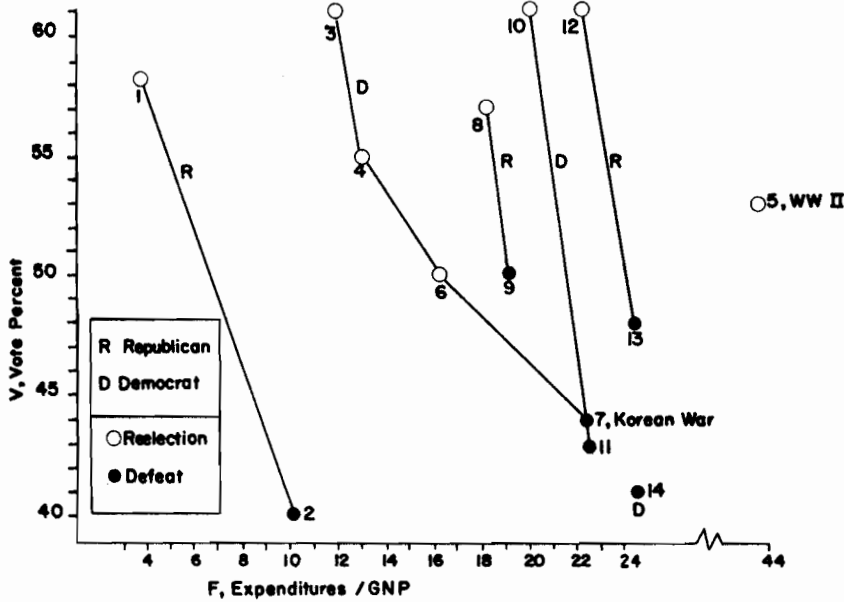$$-1980 \ - \ \text{Democrats}$$

Figure 6. *F* and *V*, by Party incumbency, the United States, 1928–1980

When the data are arranged this way, five downward sloping curves emerge, one for every administration but the last (see Figure 6). The average weighted slopes of these curves is −5. Thus, incumbents have lost an average of 5% points in *V* for every percent point *F* has increased during their terms in office.

The *D* curve appears to have shifted in the US four times: 1936, 1956, 1964 and 1972. These were years in which a new administration was first reelected. In every case, the reelection followed a deceleration in *F*; in only one case did *F* actually increase (see Appendix A).

These facts provide clues as to how Wagner's Law manifests itself politically. Over time, population and economic growth add to the reservoir of fiscal support held by the electorate. However, the accumulating support is not released immediately. Rather, it builds up until two things happen:

(1) The incumbents are defeated and;
(2) The new administration implements a cut-back policy.

Thus it appears that the electorate can be persuaded to support greater spending but only by a new administration that provides them with fiscal relief. This process is facilitated by the fact that a new administration brings youthful enthusiasm, fresh speeches and modern arguments for legitimating additional spending.

Note that following every reelection held during peacetime since 1928, F increased. This supports our hypothesis that the incumbents are willing to sacrifice support in excess of 50% for additional spending.

The one administration that does not fit the historical pattern is Carter's Democratic administration, the last in the series. This is the first time in nearly 50 years that the D curve did not shift rightward during a newly-elected administration. Perhaps this was a random aberration. However, we cannot rule out the possibility that the D curve has stopped its historic rightward drift in the US. The political and diplomatic defeat suffered by the US in the Vietnam War, together with the Watergate scandals and subsequent revelations of corruption and immorality under Kennedy, Johnson, and Nixon, have probably eroded the legitimacy of the presidency and the federal government as a whole. Greater skepticism about the usefulness of federal expenditures among intellectuals may have also contributed to the erosion of fiscal legitimacy among the public.

If this analysis is correct, F has reached the limits of its growth in the US for some time. Barring another patriotic war or some other displacement, F^* is likely to remain close to 22%. Therefore, parties will probably not be reelected unless F stays at our below it. This is about where it was in 1976, when Ford's Republicans were defeated in a close election.

Our estimate of F^* in the US does not augur well for the reelection of Reagan's Republicans. In 1984, F is projected to be 24%, above what a majority will support with their votes.

Great Britain

Unlike the US, GB does not seem to show any evidence of Wagner's Law. However, a war-related displacement is evident, as Figure 7 shows.

The first election, held in 1935, has the lowest F and one of the highest V in the data. The next election, held 10 years later, has the highest F and the lowest V in the data. This represents the loss of support incurred by Churchill's Conservatives during the enormous fiscal expansion of World War II. Victory over Hitler was not sufficient for reelection. After the war, F fell to a level above its value before the war.

The remaining elections, held between 1950 and 1979, are enclosed in a rectangle. Note that eight of the ten elections in the rectangle describe a downward-sloping curve with a slope of approximately -2. This is less than in the US, which suggests that in GB voters are less sensitive to changes in F. Whether this reflects cultural or institutional differences is beyond the scope of this paper to determine. Probably both forces are at work. The socialist ideology is older and more generally accepted in GB than in the US, and the parliamentary system weakens the tie between expenditures and votes because the executive is not independently elected by the people.
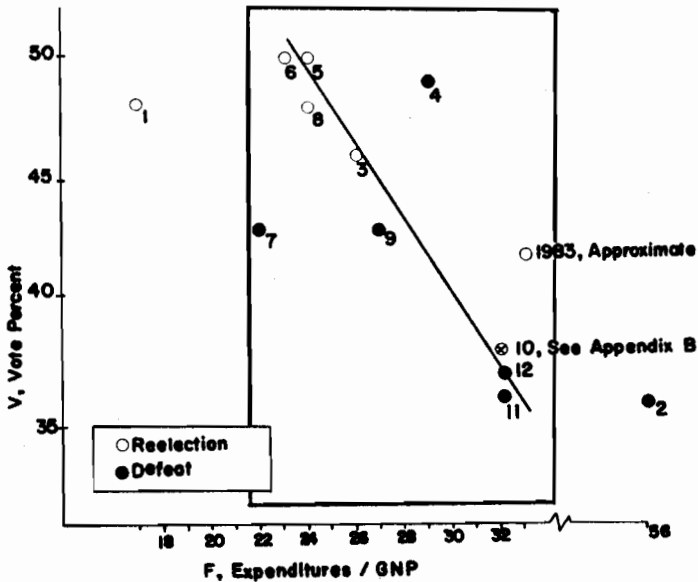
Figure 7. F and V, Great Britain, 1935–1983

F* and the 1983 election in GB

From Figure 7, we calculate that F^* in GB is no higher than 25%. In 1983, F is somewhere around 32%, considerably above what a majority of the voters support. This is reflected in the June election results. Thatcher's Conservatives received only 42% of the vote. But because the two-party system has broken down, a majority of the electorate almost evenly split its vote between the Labour party and the Social Democracy Alliance. By winning a plurality in well over half the Parliamentary seats, the Conservatives were reelected by what some newspapers called 'a landslide'. In the US, where the executive is elected by the people and the two-party system prevails, a V of 42% would be a serious defeat for the incumbents (e.g., the Democrats in 1968).

Actually, Thatcher received more votes than she should have, given the curve in Figure 7. The six extra percent points in V could be partially at-tributed to Britain's military victory in the Falklands. Whether this will turn out to be a permanent displacement of the D curve remains to be seen.

Summary and conclusion

We have found that fiscal expansion erodes the political support of the in-cumbents in the United States and Great Britain.

These findings may come as a surprise to many readers. Indeed, there appears to be an ingrained 'conventional wisdom' that spending gets politi-

cians elected. If so, shouldn't greater spending be rewarded, rather than punished at the polls?

This paradox, however, is more apparent than real. While spending does find support among constituencies and the public at large, it does not follow that *more* spending yields *greater* support. When F rises, for every vote gained in the bureaucracy and interest groups, more than one vote is lost in the electorate at large.

If our analogy with economics is valid, a negative function between expenditures and votes is understandable. When expenditures grow faster than GNP, F rises. This raises the fiscal price of government to the economy. Like rational consumers, the electorate responds by withdrawing support for the incumbents. This is the most practical means for voters in a democracy to reveal their unwillingness to pay the greater costs of additional spending. (In a non-democratic government, additional spending would generate additional opposition, necessitating the imposition of greater coercion by government. See Heggen and Cuzán, 1981.)

Our research suggests that a two-party presidential system reflects more directly and accurately the expenditure-vote relationships than a multi-party parliamentary system. This should give pause to those political scientists who regard the British system as superior to the American. Our research also should give encouragement to those who balk at greater government spending in either country. They are not as politically isolated as they may have thought. In fact, a majority tends to agree with them.

REFERENCES

Buchanan, J., and Flowers, M. (1980). *The public finances.* Homewood, IL: Richard D. Irwin, Inc.

Cuzán, A.G., and Heggen, R. (1982). *A fiscal model of presidential elections in the United States: 1880–1980.* Paper presented at the Southern Political Science Association, Atlanta, 28–30 October, 1982.

Downs, A. (1957). *An economic theory of democracy.* New York: Harper and Row.

Heggen, R., and Cuzán, A. (1981). Legitimacy coercion and scope: An expansion-path analysis applied to five central American countries and Cuba. *Behavioral Science.*

Kendrick, M.S. (1955). *A century and a half of federal expenditures.* New York: National Bureau of Economic Research, Inc.

Niskanen, W.A. (1979). *Economic and fiscal effects on the popular vote for President. In D.W. Rae and T.J. Eismeier (Eds.), Public policy and public choice.* Beverly Hills: Sage Publications.

Niskanen, W. (1971). *Bureaucracy and representative government.* Chicago: Aldine-Atherton.

Peacock, A.R., and Wiseman, J. (1961). *The growth of public expenditures in the United Kingdom.* Princeton: Princeton University Press.

Appendix A

F, Ḟ, F̈, E and V, United States 1880–1980

(*Result consistent with hypothesis; 0 not consistent; R = Republican, D = Democrat.)

Case #	Year	F	Ḟ	F̈	V	E	Winner	Result
	1876	3.4						
	1880	2.5	− 26		48	+ 1	R	*
	1884	2.3	− 08	+ 18	48	− 1	D	0
	1888	2.5	+ 09	+ 17	49	− 1	R	*
	1892	2.7	+ 08	− 01	43	~ 1	D	*
	1896	2.9	+ 07	− 01	47	− 1	R	*
	1900	2.9	0	− 06	52	+ 1	R	*
	1904	2.7	− 07	− 07	56	+ 1	R	*
	1908	2.6	− 04	+ 03	52	+ 1	R	*
	1912	2.0	− 23	− 19	23	− 1	D	0
	1916	2.8	+ 40	+ 63	49	+ 1	D	0
	1920	6.7	+ 139	+ 99	34	− 1	R	*
	1924	3.5	− 48	− 187	54	+ 1	R	*
1.	1928	3.0	− 11	+ 37	58	+ 1	R	*
2.	1932	9.2	+ 197	+ 208	40	− 1	D	*
3.	1936	11.0	+ 20	− 177	61	+ 1	D	*
4.	1940	11.6	+ 05	− 15	55	+ 1	D	*
5.	1944	44.3	+ 281	+ 276	53	+ 1	D	0
6.	1948	14.9	− 66	− 347	50	+ 1	D	*
7.	1952	20.7	+ 39	+ 105	44	− 1	R	*
8.	1956	17.1	− 17	− 56	57	+ 1	R	*
9.	1960	18.4	+ 08	+ 25	50	− 1	D	*
10.	1964	18.6	+ 01	− 07	61	+ 1	D	*
11.	1968	20.8	+ 12	+ 11	43	− 1	R	*
12.	1972	20.9	0	− 12	61	+ 1	R	*
13.	1976	22.6	+ 08	+ 08	48	~ 1	D	*
14.	1980	22.9	+ 01	− 07	41	− 1	R	0

Case # assigned only to elections shown in Figure 6.

Sources: M.S. Kendrick, *A Century and a Half of Federal Expenditures* (New York: National Bureau of Economic Research, Inc., 1955); Joint Economic Committee, *Economic Indicators* (Washington), D.C.: 1980 and 1981); Congressional Quarterly's *Guide to U.S. Elections* (Washington, D.C., 1975); and R.M. Scammon and A.V. McGillivary (Eds.) *America Votes*, 14 (Washington, D.C.: Elections Research Center, 1981).

34

F, Ḟ, F̈, V, P and E: Great Britain, 1935–1979

(*Result consistent with hypothesis; 0 not consistent; C = Conservative, L = Labor.)

Case #	Year	F	Ḟ	F̈	V	P	E	Winner	Result
1.	1935	16.9	− 6.6	− 25	48	63	+ 1	C	*
2.	1945	56.4	233.7	231	36	33	− 1	L	*
3.	1950	25.6	− 52.8	− 287	46	50	+ 1	L	*
4.	1951	28.5	11.3	64	49	48	− 1	C	*
5.	1955	24.4	− 14.4	− 25	50	55	+ 1	C	*
6.	1959	23.0	− 5.7	8	50	58	+ 1	C	*
7.	1964	21.7	− 5.7	0	43	50	− 1	L	0
8.	1966	23.5	8.3	14	48	58	+ 1	L	0
9.	1970	27.3	16.2	8	43	46	− 1	C	*
10.	1974	31.9	16.8	1	38	47	N.A.	C	N.A.
11.	1974				36	44	− 1	L	*
12.	1979	31.6	− .9	− 18	37	42	− 1	C	0

N.A. We leave this election out of Table 4 because, while the incumbents received less than 50% in both *V* and *P*, they apparently formed a minority government that did not last the year.

Sources: D. Butler and A. Sloman, *British Political Facts 1900–1979* (New York: St. Martin's Press: 1980); B.R. Mitchell, *European Historical Statistics 1750–1975* (New York: Facts on File, 1980). *Europa Yearbook* (London: various years).