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THESIS

A "FAIR SHARE" ANALYSIS OF THE
U. S. COAST GUARD BUDGET

by

John C. Simpson

December 1987

Thesis Advisor: Jerry L. McCaffery

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A "Fair Share" Analysis of the U. S. Coast Guard Budget

by

John C. Simpson
Lieutenant Commander, U. S. Coast Guard
B.S., United States Coast Guard Academy, 1975

Submitted in partial fulfillment of the
requirements for the degree of

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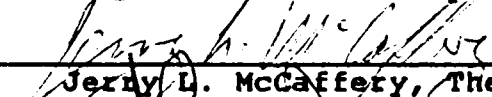
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December 1987

Author:




John C. Simpson

Approved by:



Jerry L. McCaffery, Thesis Advisor



L. R. Jones, Second Reader



David R. Whipple, Chairman,
Department of Administrative Sciences



James M. Frengen
Acting Dean of Information & Policy Sciences

ABSTRACT

This thesis is an analysis of the U.S. Coast Guard budget to determine if the Coast Guard receives its "Fair Share" of the Federal Budget. The Coast Guard's share of the budget is compared to the budgets for the Department of Transportation, the Department of Defense, and the flexible portion of the Federal Budget. The fiscal years 1976-1986 comprise the time frame for the study.

The incremental differences in the annual budgets are converted to percentage terms for comparison. The budgets are analyzed in annual fiscal year dollars and converted to constant FY-82 dollars for further analysis and comparison. Both Budget Authority and Budget Outlays are considered.

Statistical and subjective analysis of the data concludes that the Coast Guard does receive its "Fair Share" of the budget over time.



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I. INTRODUCTION

This chapter will outline the objective of the thesis, provide some background on the Coast Guard Budget dilemma, and define "Incrementalism" and "Fair Share" for the purposes of this thesis.

A. OBJECTIVE

The purpose of this paper is to attempt to evaluate whether the Coast Guard receives its "fair share" of the federal budget over time. The period of 1976 - 1986 was chosen as a representative period that included Presidential administrations from both major political parties and periods of defense budget decreases as well as increases in real growth. The concept of fair share and incrementalism is explored and the annual budget change is converted to percentage terms to compare the annual increments with agencies of varying sizes. In this thesis, "fair share" will be measured by comparing the annual percentage changes between agency and department budgets to see if they are equal or unequal over time. Both Budget Authority and Budget Outlays will be examined. Budgets will include both capital and operational accounts. Budgets will be considered in annual year dollars and converted to constant FY-82 dollars for further examination.

The Coast Guard budget will be compared to the following budgets:

- (1) Department of Transportation (less Coast Guard)
- (2) Department of Defense
- (3) Flexible portion of the Federal Budget (total Federal budget less Social Security, interest on the National Debt, and the Coast Guard Budget)

The Flexible portion of the Federal Budget (FLEXFED) is used as a surrogate for the portion of the budget that is "controllable". Researchers over the years have disputed exactly what portion of the budget is controllable and some may argue with the FLEXFED definition for this paper. In FY-77, Lance T. LeLoup found that 77% of the Federal Budget could be classified "uncontrollable" which included the following [LeLoup, 1979, p. 68]:

- Fixed Costs: - Interest on the National Debt
 - Public Housing loans
- Long-term Contracts - Weapons systems
 - Highway construction
- Payments to States & Individuals - A.D.C. and welfare payments
 - Social Security
 - Medicare, Medicaid
 - Revenue sharing

The Reagan administration altered beliefs that the above programs could never be cut or removed. Revenue sharing has recently been eliminated and other programs have been cut or had their growth restrained. Therefore, the FLEXFED budget used in this paper is only representative of the controllable portion of the Federal Budget.

B. THE COAST GUARD

Prior to 1967, the Coast Guard was an agency of the Treasury Department. The Department of Transportation Act, Public Law 89-670, created the Department of Transportation and transferred the Coast Guard from the Treasury Department to the Department of Transportation where it remains to date.

The Coast Guard has a myriad of missions prescribed by law to be conducted during both peacetime and war. While missions such as search and rescue, aids to navigation, and regulation of the merchant marine industry have some relation to the transportation industry, other functions certainly do not. Drug interdiction, maritime defense, and deployment as part of the U.S. Navy during wartime, are functions that have little or no relation to the Department of Transportation.

The Coast Guard's diversity of missions produces an identity crisis within the Department of Transportation, the Congress, and even the Coast Guard itself. As a result, the Coast Guard has developed a broad-based clientele for its various mission areas. However, this is a double edged sword since the Coast Guard budget is readily separated by the resources that are committed to each function. Therefore, advocates of one mission area may seek cuts in other mission areas so as to not affect the mission area they wish to protect.

The Coast Guard's myriad of missions also leads to a problem of image with Congress. Should the Coast Guard be considered as another civilian agency within the Department of Transportation, or should emphasis be placed on the fact that the Coast Guard is a military service? Ideally, the Coast Guard would like to play up the service image when the Department of Defense is in favor with the Administration & Congress, and try to portray a public service agency when domestic programs are in favor.

With the advent of computers, it has become easier to gather budget information quickly and present it in a sophisticated manner. Unfortunately, this information boom has wetted Congressional appetites to the point that top officials in many government agencies are spending an inordinate amount of time on budget matters in lieu of "running the store". The Coast Guard is no different and the following quote from Admiral Paul A. Yost, Commandant of the Coast Guard, sums up the feeling of many government executives:

The hardest thing about my job is that a third of my time is taken up with budget matters when the time could be better spent managing the Coast Guard. I sure understand what President Reagan means when he says this budget process has got to be fixed. We must simplify it so that an administrator like me - hired to run the Coast Guard - doesn't spend a third of his time on budget matters and still end up without a budget at the beginning of the fiscal year. It's an awful way to do business. [Puckett, 1987, p. 3]

The analysis of how the Coast Guard's budget has compared to the budgets for the Department of Transportation (DOT), the Department of Defense (DOD), and the flexible portion of the Federal Budget (FLEXFED) may be useful in planning future budget strategy. Similar budget comparison analysis is currently being conducted at Coast Guard Headquarters in preparation for presentations to Congress. While those presentations are developed to express a particular point, this thesis is intended to be an impartial analysis. However, this thesis suggests how this type of information might be strategically presented to increase the Coast Guard's share of the proverbial "budget pie".

C. INCREMENTALISM

Incremental budgeting is considered to be noncomprehensive as little attention is paid to those programs already in the base, but rather attention is focused on new programs or any significant increases/decreases in the cost of the previous year's programs [Wildavsky, 1984, p.15]. Aaron Wildavsky and Richard Fenno analyzed the annual percentage modifications in the obligational authority granted by the House Appropriations Committee (HAC) in 444 cases and determined that slightly over half were within 10 percent and three-quarters of the cases were within 30 percent [Bailey, 1975, pp 61-64].

Exactly what percent is considered "incremental" varies from one researcher to the next. Studies have varied from 0-10 percent [Dye, 1972, p. 215] to a highly permissive criterion of 0-30 percent [Bailey, 1975, p. 62]. Therefore, it can be implied that agency growth beyond that rate would be considered significant growth in excess of an incremental increase to the "base". This would mean a major increase in the scope of existing programs, adding more programs, or acquiring additional capital assets.

An excellent discussion of incrementalism is provided by Ira Sharkansky as follows:

Incrementalism is an approach to decision-making that deals with complex issues by narrowing and simplifying the range of decisions to be made. The incrementalist does not attempt to write a tax or spending policy "de novo", but accepts as given those policies already in force. He limits consideration to the increment of change that is proposed in taxes or expenditures. Because his focus is limited, the incremental decision maker can master the relevant issues involved in his decision. And because he does not threaten to undo all the accommodations that have been made in previous decisions, he can avoid most of the disputes that are latent in his area of policy. [Sharkansky, 1979, p. 32]

D. FAIR SHARE

The concept of Fair Share is closely tied to Incrementalism. Wildavsky defines Fair Share as follows:

"Fair share" means not only the base an agency has established but also the expectation that it will receive some proportion of funds, if any, which are to be increased over or decreased below the base of the various governmental agencies. "Fair share", then, reflects a convergence of expectations on roughly how much the agency is to receive in comparison to others. [Wildavsky, 1984, p. 17]

Fair Share goes a step beyond Incrementalism by tying the budget prospects to a relationship with other agencies. In times of prosperity, an agency would expect to get a similar percentage increase as an agency of similar size or relative political power. In times of fiscal austerity, an agency would accept cuts if they were no worse than the cuts received by another agency of similar size or relative political power.

Of course, when a new administration with strong views on particular programs drastically alters the priorities, the Fair Share relationships may be altered as well (e.g. - same size may mean different shares). However, this paper attempts to show that, over time, the Coast Guard has received its Fair Share of the Budget.

Chapter II outlines the research methodology utilized, presents the budget data in both dollar and percentage terms, and provides an analysis of the data. Both Budget Authority and Budget Outlays will be examined. Chapter III converts the data into constant dollars and analyzes the revised data. Chapter III will also look at the Fair Share concept as measured by a common size analysis with each of the 4 categories. Finally, Chapter IV will outline the conclusions of the study and recommend areas for further study.

II. ANNUAL DOLLAR BUDGETS

This Chapter outlines the process for obtaining the original budget data and the steps taken to convert the data into a format for comparison. Once the data is in a useful format, it is presented graphically and analyzed.

A. BUDGET DATA IN DOLLARS

The original budget data for this study is obtained from the annual Budget of the United States (series) [Office of Management and Budget, 1975-1988]. The annual issue of the budget represents the proposed President's budget for that fiscal year. The proposed budget is presented alongside the budget data from the previous two years. Since the proposed budget is developed while the previous year's budget is often still being debated in Congress, only the first year listed represents an actual budget already appropriated. Therefore, if the FY-75 budget data is desired, the annual proposed budget book for FY-77 must be consulted.

Table 1 lists the Budget Outlays & Authority for the fiscal years 1976-1986 for the Coast Guard (CG), Department of Transportation (DOT), Department of Defense (DOD), and the Total Federal Budget.

TABLE 1

BUDGET OUTLAY & AUTHORITY FOR FISCAL YEARS 1975-1986
(IN MILLIONS OF DOLLARS)

Budget Outlays

<u>FY</u>	<u>COAST GUARD</u>	<u>DEPARTMENT OF TRANSPORTATION</u>	<u>DEPARTMENT OF DEFENSE</u>	<u>FEDERAL BUDGET</u>
75	\$ 929	\$ 9,247	\$ 85,020	\$324,601
76	\$1,014	\$11,936	\$ 88,036	\$366,466
77	\$1,158	\$12,514	\$ 95,650	\$401,902
78	\$1,284	\$13,452	\$103,042	\$450,836
79	\$1,437	\$15,486	\$115,013	\$493,673
80	\$1,636	\$18,963	\$132,840	\$579,613
81	\$1,854	\$22,509	\$156,096	\$657,204
82	\$2,077	\$19,917	\$182,850	\$728,375
83	\$2,406	\$20,628	\$205,012	\$795,969
84	\$2,518	\$23,934	\$220,838	\$851,781
85	\$2,539	\$25,020	\$245,371	\$946,323
86	\$2,462	\$27,378	\$265,636	\$989,815

Budget Authority

<u>FY</u>	<u>COAST GUARD</u>	<u>DEPARTMENT OF TRANSPORTATION</u>	<u>DEPARTMENT OF DEFENSE</u>	<u>FEDERAL BUDGET</u>
75	\$ 933	\$19,119	\$ 85,812	\$ 412,099
76	\$1,106	\$10,267	\$ 95,712	\$ 415,336
77	\$1,308	\$ 9,298	\$108,425	\$ 465,231
78	\$1,424	\$13,478	\$115,322	\$ 501,500
79	\$1,547	\$17,237	\$125,004	\$ 556,732
80	\$1,718	\$18,243	\$142,621	\$ 658,790
81	\$2,034	\$23,710	\$178,386	\$ 718,400
82	\$2,526	\$20,547	\$213,751	\$ 779,926
83	\$2,455	\$26,264	\$239,474	\$ 866,745
84	\$2,767	\$28,594	\$258,150	\$ 949,751
85	\$2,564	\$28,770	\$286,802	\$1,074,063
86	\$2,264	\$28,079	\$281,390	\$1,072,773

The Coast Guard budget must be subtracted from the Department of Transportation budget to avoid counting the Coast Guard twice. Table 2 presents the DOT-CG calculations.

TABLE 2

DEPARTMENT OF TRANSPORTATION LESS COAST GUARD
(IN MILLIONS OF DOLLARS)

Budget Outlays

<u>FY</u>	<u>DEPARTMENT OF TRANSPORTATION</u>	<u>MINUS COAST GUARD</u>	<u>EQUALS TRANSPORTATION LESS COAST GUARD (DOT-CG)</u>
75	\$ 9,247	\$ 929	\$ 8,318
76	\$11,936	\$1,014	\$10,922
77	\$12,514	\$1,158	\$11,356
78	\$13,452	\$1,284	\$12,168
79	\$15,486	\$1,437	\$14,049
80	\$18,963	\$1,636	\$17,326
81	\$22,509	\$1,854	\$20,655
82	\$19,917	\$2,077	\$17,840
83	\$20,628	\$2,406	\$18,221
84	\$23,934	\$2,518	\$21,416
85	\$25,020	\$2,539	\$22,481
86	\$27,378	\$2,462	\$24,915

Budget Authority

<u>FY</u>	<u>DEPARTMENT OF TRANSPORTATION</u>	<u>MINUS COAST GUARD</u>	<u>EQUALS TRANSPORTATION LESS COAST GUARD (DOT-CG)</u>
75	\$19,119	\$ 933	\$18,186
76	\$10,267	\$1,106	\$ 9,162
77	\$ 9,298	\$1,308	\$ 7,990
78	\$13,478	\$1,424	\$12,054
79	\$17,237	\$1,547	\$15,690
80	\$18,243	\$1,718	\$16,526
81	\$23,710	\$2,034	\$21,676
82	\$20,547	\$2,526	\$18,021
83	\$26,264	\$2,455	\$23,809
84	\$28,594	\$2,767	\$25,827
85	\$28,770	\$2,564	\$26,206
86	\$28,079	\$2,264	\$25,815

The last digit in the DOT-CG calculations in Table 2 and the FLEXFED calculations in Table 3 may appear to be incorrect. However, the calculations were carried out to

the nearest thousand dollars, and then rounded up to the nearest million dollars for presentation.

TABLE 3

FLEXIBLE FEDERAL BUDGET
(IN MILLIONS OF DOLLARS)

Budget Outlays

<u>FY</u>	<u>FEDERAL BUDGET</u>	<u>MINUS COAST GUARD</u>	<u>MINUS SOCIAL SECURITY</u>	<u>MINUS INTEREST ON THE NATIONAL DEBT</u>	<u>EQUALS FLEXIBLE FEDERAL (FLEXFED)</u>
75	\$324,601	\$ 929	\$ 88,547	\$ 32,665	\$202,460
76	\$366,466	\$1,014	\$101,853	\$ 37,063	\$226,536
77	\$401,902	\$1,158	\$ 98,209	\$ 41,900	\$260,635
78	\$450,836	\$1,284	\$108,221	\$ 48,695	\$292,636
79	\$493,673	\$1,437	\$118,041	\$ 59,837	\$314,358
80	\$579,613	\$1,636	\$134,354	\$ 74,860	\$368,763
81	\$657,204	\$1,854	\$159,501	\$ 95,590	\$400,260
82	\$728,375	\$2,077	\$176,265	\$117,404	\$432,629
83	\$795,969	\$2,406	\$214,122	\$128,813	\$450,628
84	\$851,781	\$2,518	\$208,780	\$153,838	\$486,646
85	\$946,323	\$2,539	\$183,434	\$179,090	\$581,259
86	\$989,815	\$2,462	\$190,684	\$190,166	\$606,503

Budget Authority

<u>FY</u>	<u>FEDERAL BUDGET</u>	<u>MINUS COAST GUARD</u>	<u>MINUS SOCIAL SECURITY</u>	<u>MINUS INTEREST ON THE NATIONAL DEBT</u>	<u>EQUALS FLEXIBLE FEDERAL (FLEXFED)</u>
75	\$ 412,099	\$ 933	\$ 92,740	\$ 32,665	\$285,760
76	\$ 415,336	\$1,106	\$ 99,849	\$ 37,063	\$277,318
77	\$ 465,231	\$1,308	\$ 94,872	\$ 41,900	\$327,152
78	\$ 501,500	\$1,424	\$103,104	\$ 48,695	\$348,277
79	\$ 556,732	\$1,547	\$116,274	\$ 59,837	\$379,074
80	\$ 658,790	\$1,718	\$133,949	\$ 74,860	\$448,263
81	\$ 718,400	\$2,034	\$154,801	\$ 95,589	\$465,976
82	\$ 779,926	\$2,526	\$166,310	\$117,404	\$493,687
83	\$ 866,745	\$2,455	\$227,434	\$128,813	\$508,043
84	\$ 949,751	\$2,767	\$209,230	\$153,838	\$583,916
85	\$1,074,063	\$2,564	\$190,973	\$179,090	\$701,436
86	\$1,072,773	\$2,264	\$196,802	\$190,166	\$683,541

The Flexible Federal (FLEXFED) budget in Table 3 excludes Social Security and interest on the national debt which must be paid. In addition, the Coast Guard budget is excluded to avoid double counting as in the DOT-CG budget.

Table 4 compiles the budgets in the categories desired.

TABLE 4
UNADJUSTED COMPARISON BUDGETS
(IN MILLIONS OF DOLLARS)

<u>Budget Outlays</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	\$ 929	\$ 8,318	\$ 85,020	\$202,460
76	\$1,014	\$10,922	\$ 88,036	\$226,536
77	\$1,158	\$11,356	\$ 95,650	\$260,635
78	\$1,284	\$12,168	\$103,042	\$292,636
79	\$1,437	\$14,049	\$115,013	\$314,358
80	\$1,636	\$17,326	\$132,840	\$368,763
81	\$1,854	\$20,655	\$156,096	\$400,260
82	\$2,077	\$17,840	\$182,850	\$432,629
83	\$2,406	\$18,221	\$205,012	\$450,628
84	\$2,518	\$21,416	\$220,838	\$486,646
85	\$2,539	\$22,481	\$245,371	\$581,259
86	\$2,462	\$24,915	\$265,636	\$606,503

<u>Budget Authority</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	\$ 933	\$18,186	\$ 85,812	\$285,760
76	\$1,106	\$ 9,162	\$ 95,712	\$277,318
77	\$1,308	\$ 7,990	\$108,425	\$327,152
78	\$1,424	\$12,054	\$115,322	\$348,277
79	\$1,547	\$15,690	\$125,004	\$379,074
80	\$1,718	\$16,526	\$142,621	\$448,263
81	\$2,034	\$21,676	\$178,386	\$465,976
82	\$2,526	\$18,021	\$213,751	\$493,687
83	\$2,455	\$23,809	\$239,474	\$508,043
84	\$2,767	\$25,827	\$258,150	\$583,916
85	\$2,564	\$26,206	\$286,802	\$701,436
86	\$2,264	\$25,815	\$281,390	\$683,541

B. ANNUAL PERCENTAGE INCREMENTS

Comparing annual dollar increments between agencies would have little meaning unless the agencies had relatively the same dollar budgets. For example, a billion dollar increase in the FY-75 budget for the Coast Guard would more than double the budget while the same increase in the DOD budget would be only a little over a one percent increase.

A more meaningful comparison can be achieved by analyzing the annual percentage incremental changes from the base year of FY-1975. Since the predetermined period for comparison is fiscal years 1976 thru 1986, the increment from FY-75 to FY-76 is the first year of interest. Therefore, the incremental changes in prior years are disregarded.

It should be noted that choosing a different time frame could drastically change the results, especially with cumulative percentage increments. The time frame under consideration in this study is representative of both Democratic and Republican administrations and periods of both military decline and build-up. Depending upon one's position in the budget game, the selection of a specific period of either decline or build-up can present an agency in either a more favorable or unfavorable light. The time frame utilized in this study was selected without any advocacy motive. This time frame was chosen because it was the most recent 10 year period for which actual budget data was available.

However, this study will later discuss how the data could be skewed to favor an agency.

The annual percentage increments for the agencies is depicted below in Table 5.

TABLE 5
ANNUAL PERCENTAGE INCREMENTS
(BASED ON UNADJUSTED FY DOLLARS)

Budget Outlays

<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	9.11%	31.32%	3.55%	11.89%
77	14.22%	3.97%	8.65%	15.05%
78	10.91%	7.15%	7.73%	12.28%
79	11.87%	15.46%	11.62%	7.42%
80	13.91%	23.33%	15.50%	17.31%
81	13.29%	19.21%	17.51%	8.54%
82	12.05%	-13.63%	17.14%	8.09%
83	15.85%	2.14%	12.12%	4.16%
84	4.64%	17.53%	7.72%	7.99%
85	0.84%	4.97%	11.11%	19.44%
86	-3.03%	10.83%	8.26%	4.34%

Budget Authority

<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	18.46%	-49.62%	11.54%	-2.95%
77	18.26%	-12.78%	13.28%	17.97%
78	8.89%	50.86%	6.36%	6.46%
79	8.63%	30.17%	8.40%	8.84%
80	11.05%	5.32%	14.09%	18.25%
81	18.44%	31.16%	25.08%	3.95%
82	24.14%	-16.86%	19.83%	5.95%
83	-2.79%	32.12%	12.03%	2.91%
84	12.70%	8.48%	7.80%	14.93%
85	-7.34%	1.47%	11.10%	20.13%
86	-11.70%	-1.49%	-1.89%	-2.55%

The Coast Guard budget is graphically compared to each of the other categories in Figures 1 thru 8.

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

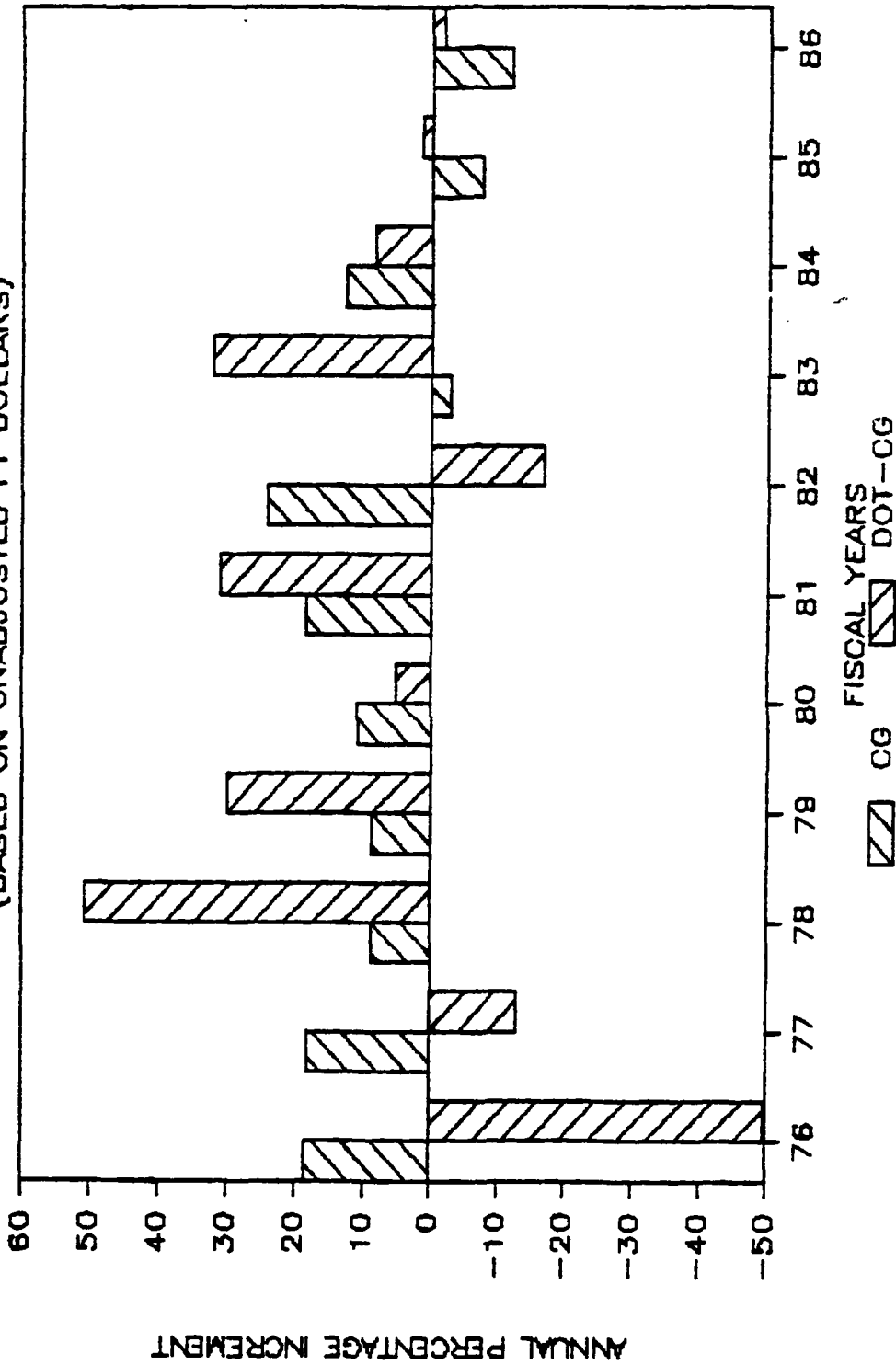


Figure 1 - Unadjusted Budget Authority Annual Change
CG vs. DOT-CG

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

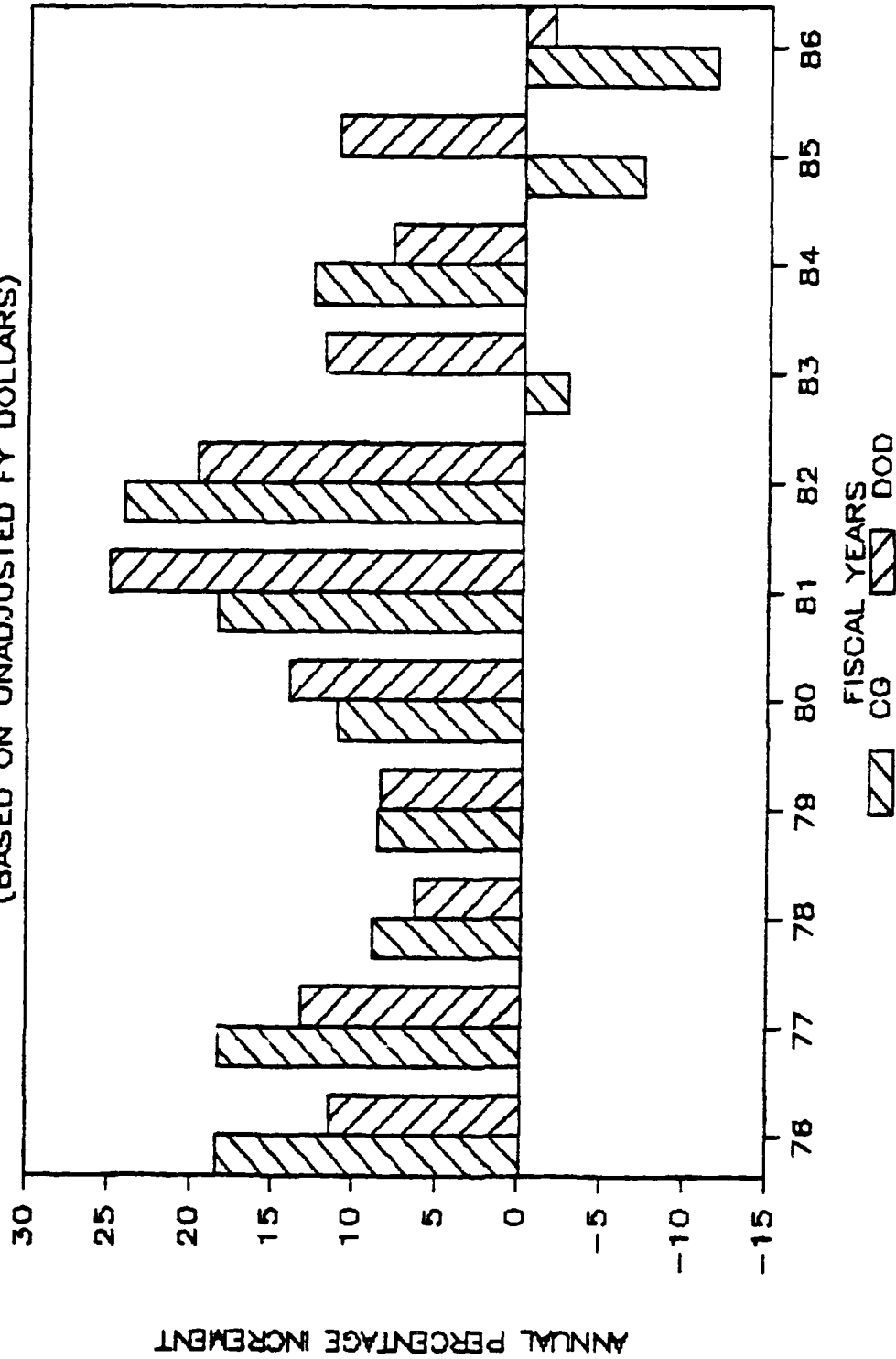


Figure 2 - Unadjusted Budget Authority Annual Change
CG vs. DOD

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

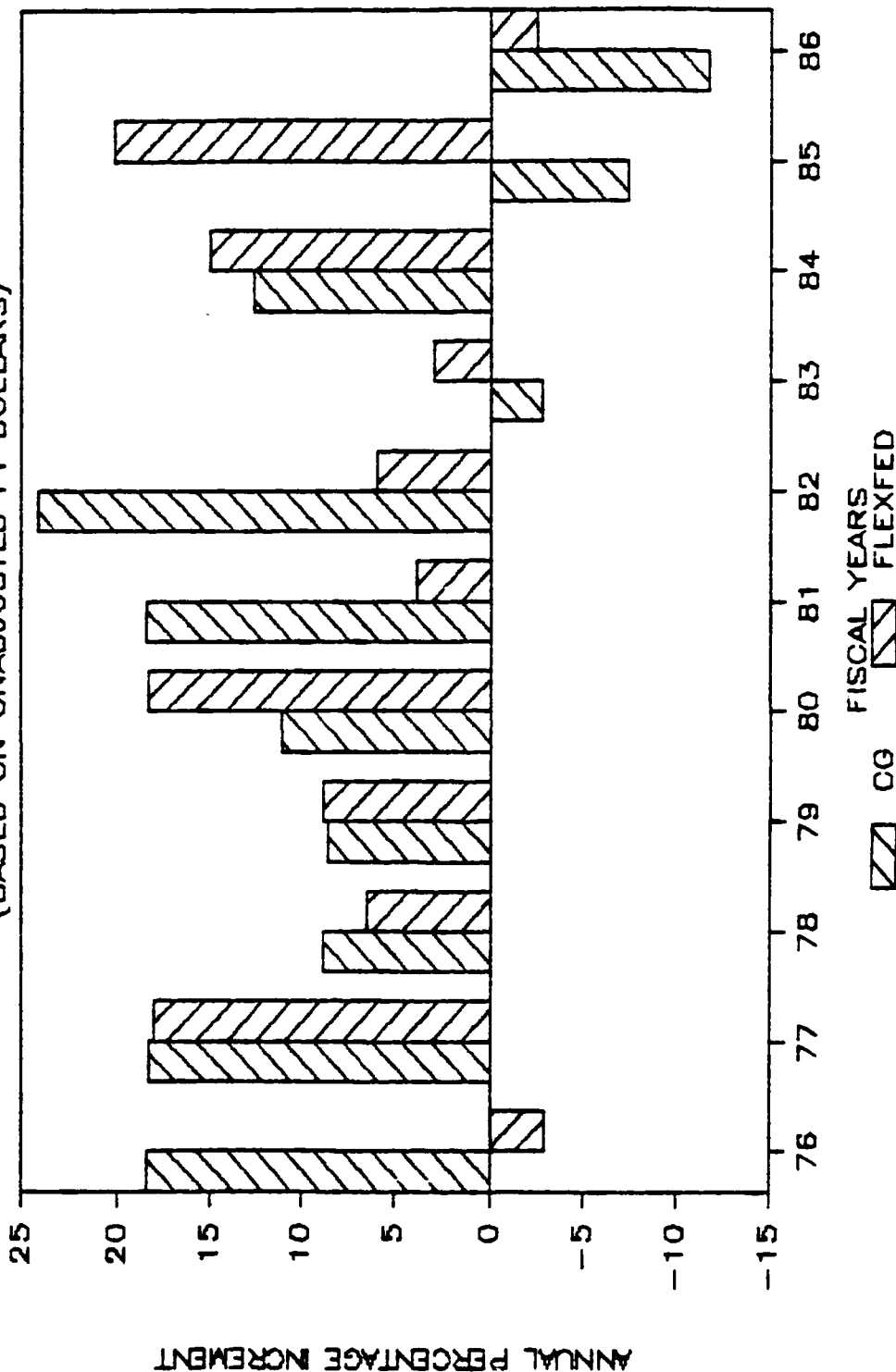


Figure 3 - Unadjusted Budget Authority Annual Change
CG vs. FLEXFED

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

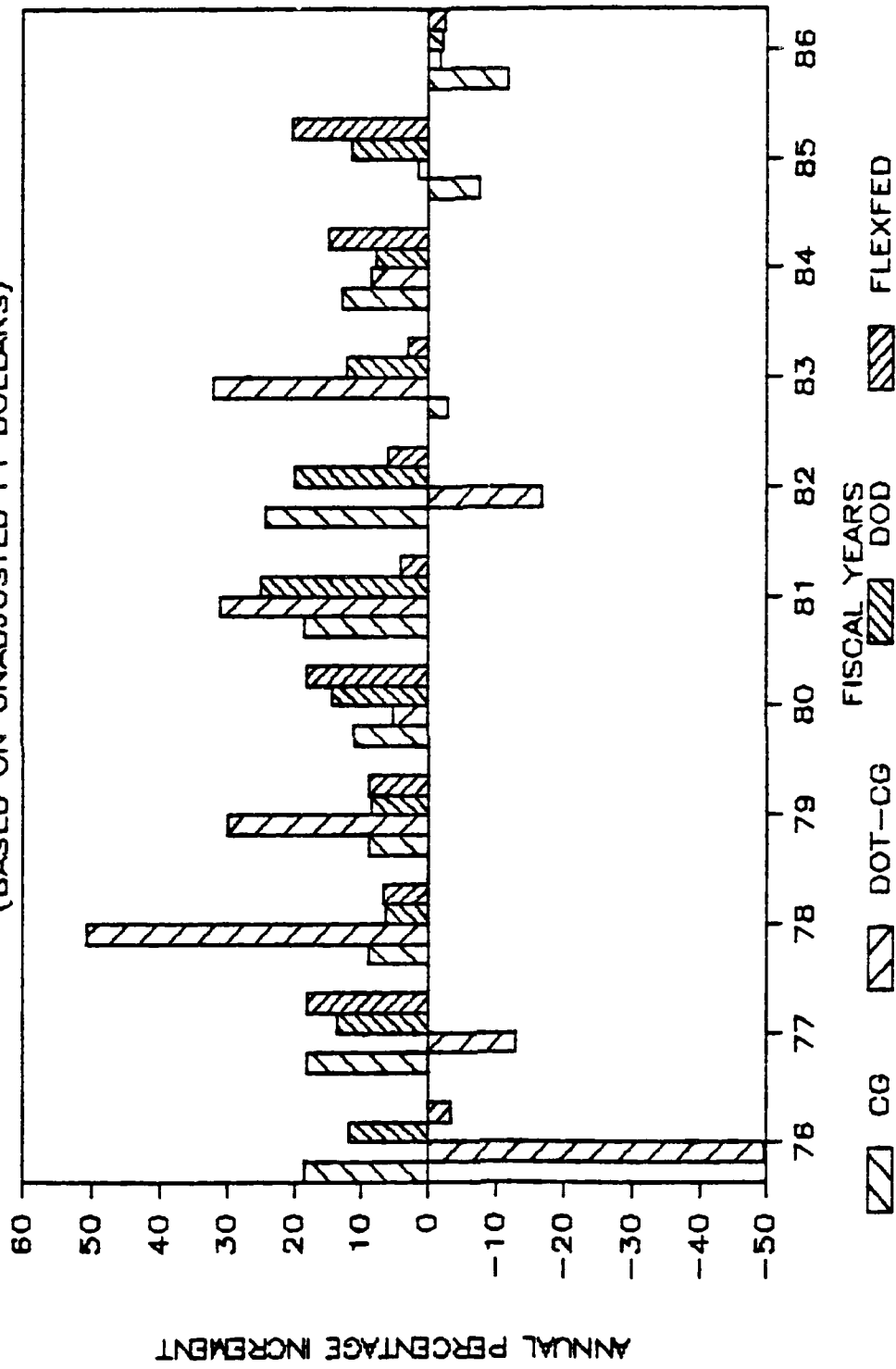


Figure 4 - Unadjusted Budget Authority Annual Change Composite

OUTLAYS ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

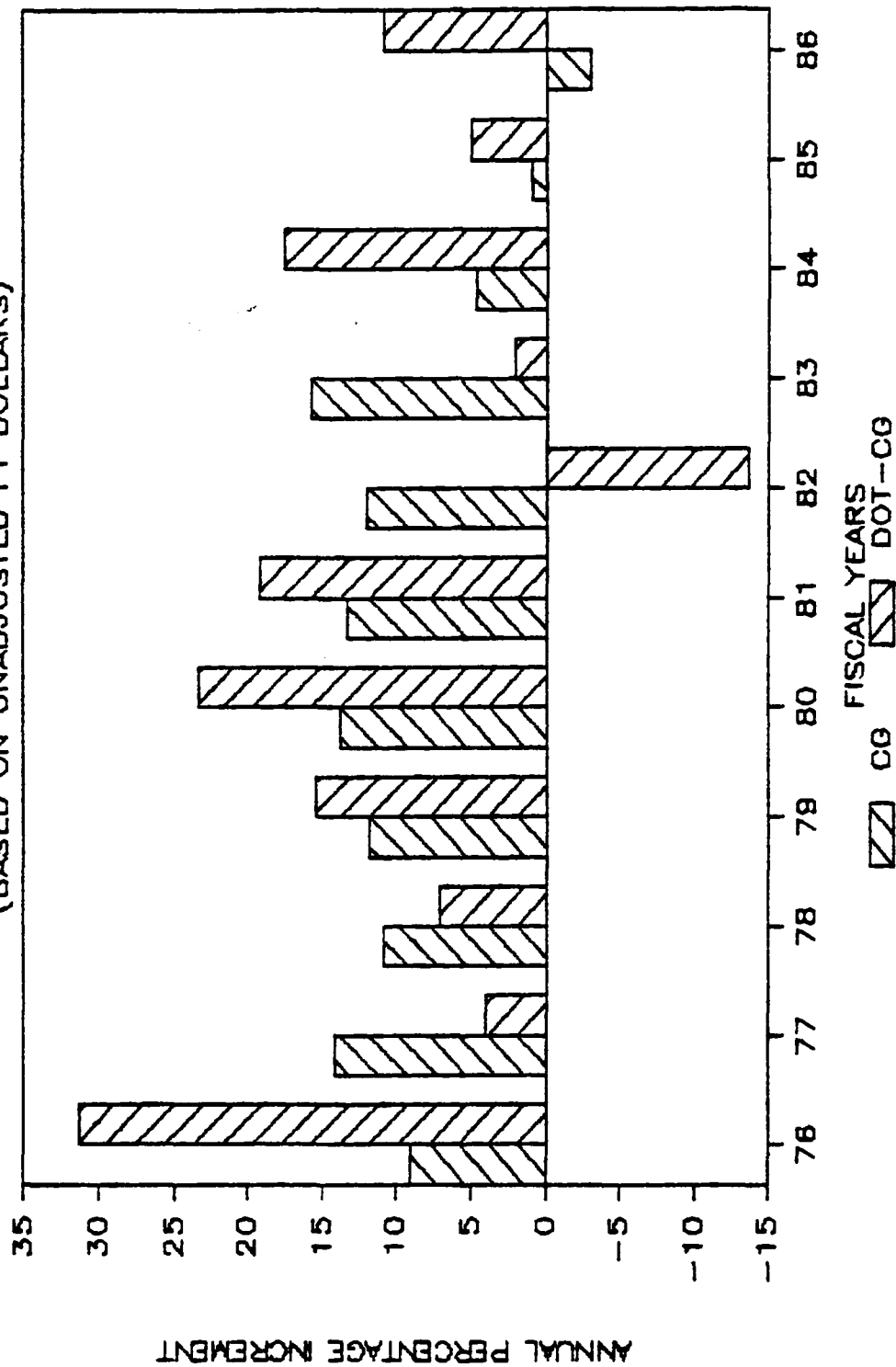


Figure 5 - Unadjusted Outlays Annual Change
CG vs. DOT-CG

OUTLAYS ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

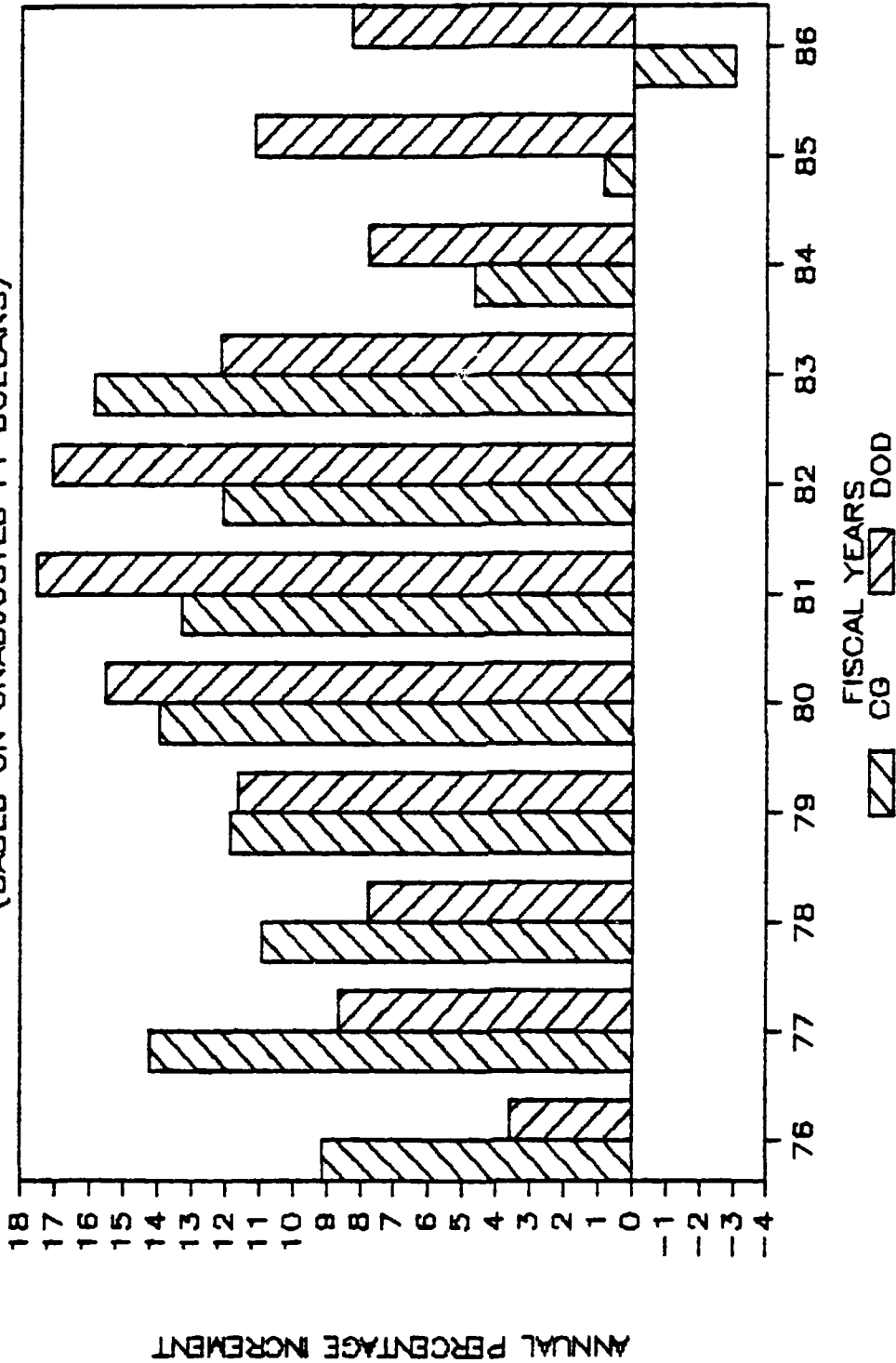


Figure 6 - Unadjusted Outlays Annual Change
CG vs. DOD

OUTLAYS ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

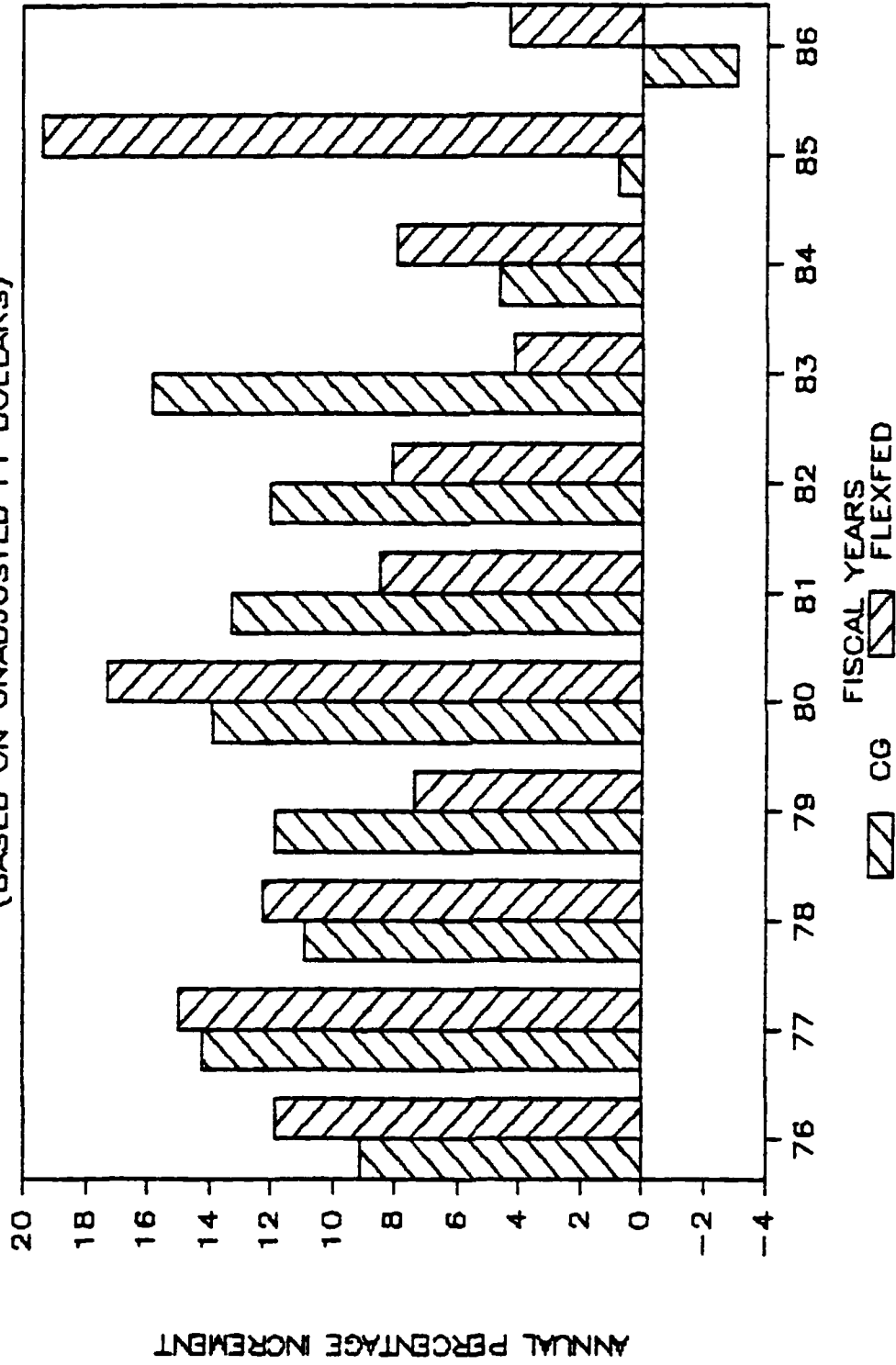


Figure 7 - Unadjusted Outlays Annual Change
CG vs. FLEXFED

OUTLAYS ANNUAL CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

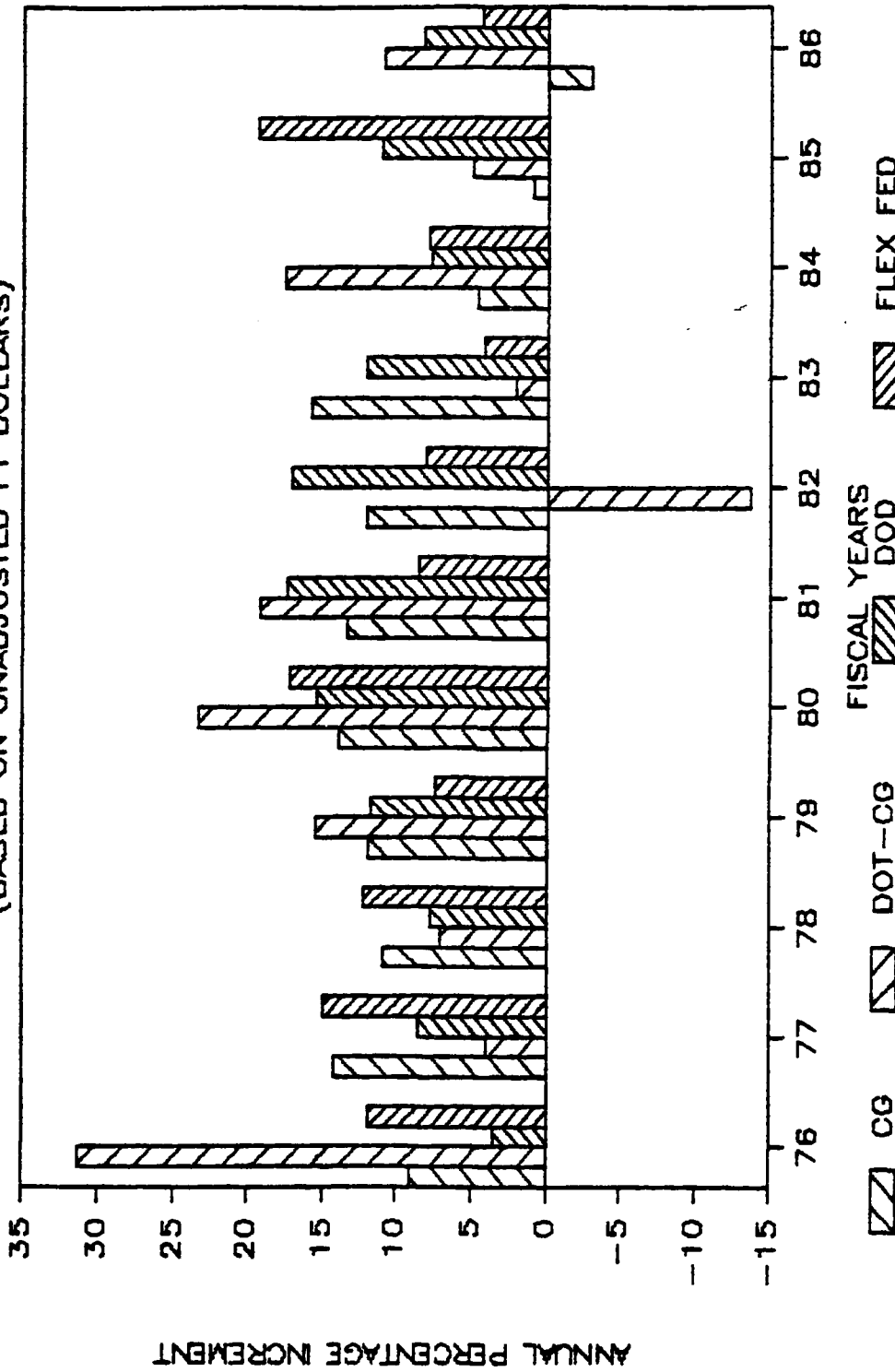


Figure 8 - Unadjusted Outlays Annual Change
Composite

C. CUMULATIVE PERCENTAGE INCREASES

The preceding graphs compare the percentage increases in individual years. The cumulative effect over the entire period is depicted in Table 6 below and Figures 9 thru 16 on succeeding pages.

TABLE 6
CUMULATIVE PERCENTAGE INCREMENTS
(BASED ON UNADJUSTED FY DOLLARS)

<u>Budget Outlays</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	9.11%	31.32%	3.55%	11.89%
77	23.33%	35.29%	12.20%	26.94%
78	34.24%	42.43%	19.92%	39.22%
79	46.11%	57.90%	31.54%	46.65%
80	60.01%	81.23%	47.04%	63.95%
81	73.30%	100.44%	64.55%	72.49%
82	85.35%	86.81%	81.69%	80.58%
83	101.20%	88.95%	93.81%	84.74%
84	105.84%	106.48%	101.53%	92.73%
85	106.68%	111.45%	112.64%	112.18%
86	103.65%	122.28%	120.90%	116.52%

<u>Budget Authority</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	18.46%	-49.62%	11.54%	-2.95%
77	36.71%	-62.41%	24.82%	15.02%
78	45.60%	-11.55%	31.18%	21.47%
79	54.24%	18.62%	39.58%	30.32%
80	65.29%	23.94%	53.67%	48.57%
81	83.73%	55.10%	78.75%	52.52%
82	107.87%	38.24%	98.57%	58.47%
83	105.08%	70.36%	110.60%	61.37%
84	117.78%	78.84%	118.40%	76.31%
85	110.44%	80.31%	129.50%	96.43%
86	98.74%	78.81%	127.62%	93.88%

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

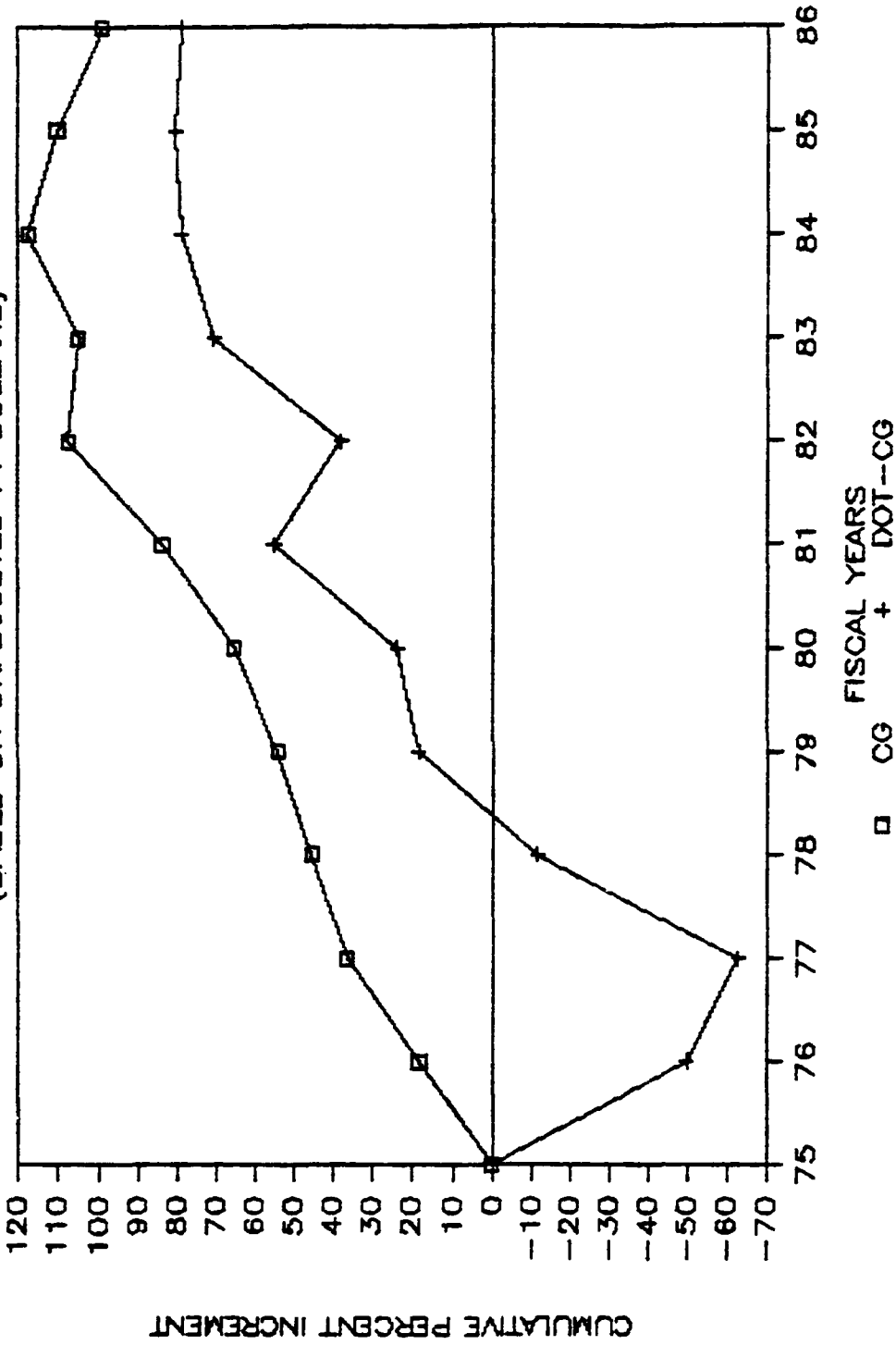


Figure 9 - Cumulative Unadjusted Budget Authority Change
CG vs. DOT-CG

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

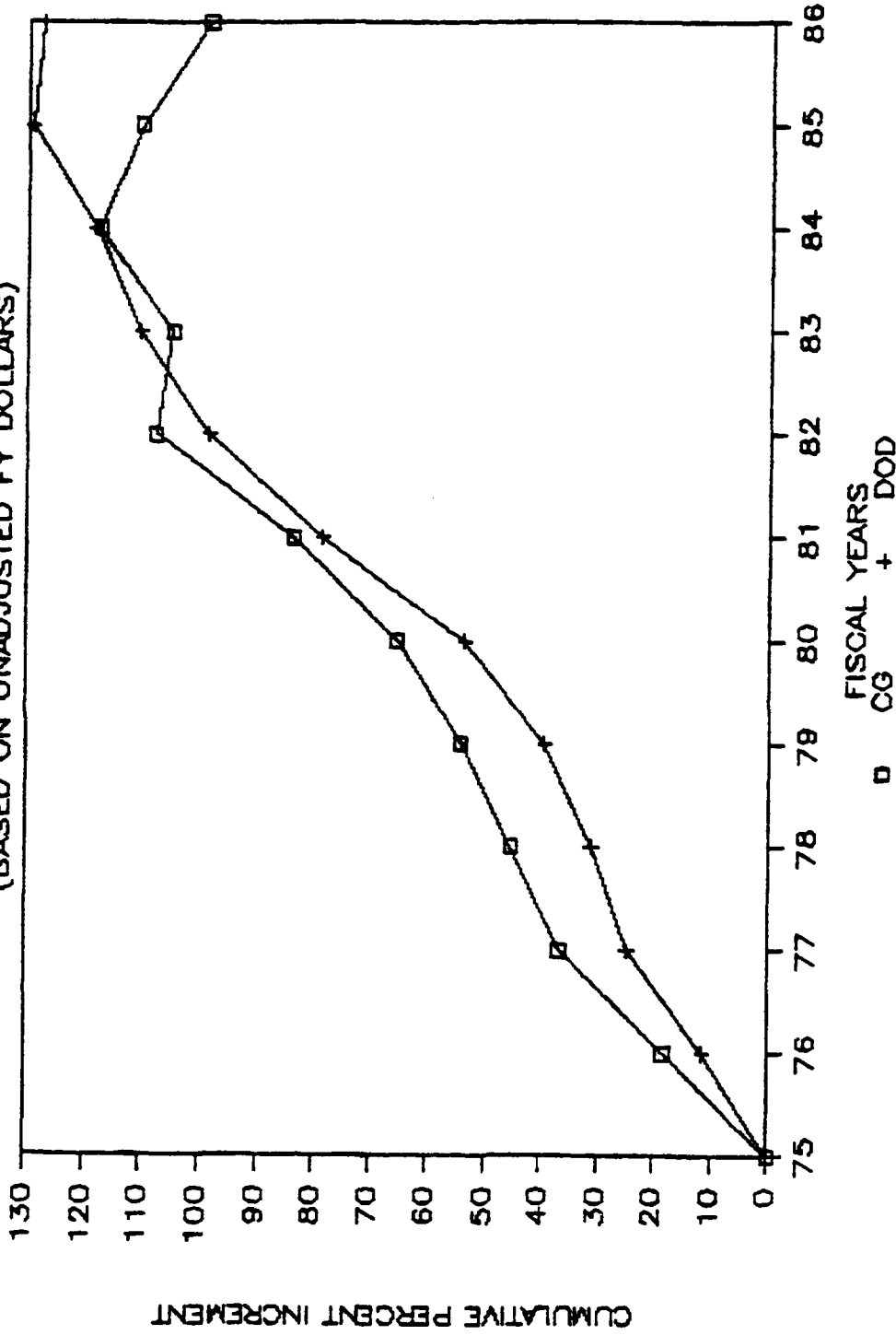


Figure 10 - Cumulative Unadjusted Budget Authority Change
CG vs. DOD

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

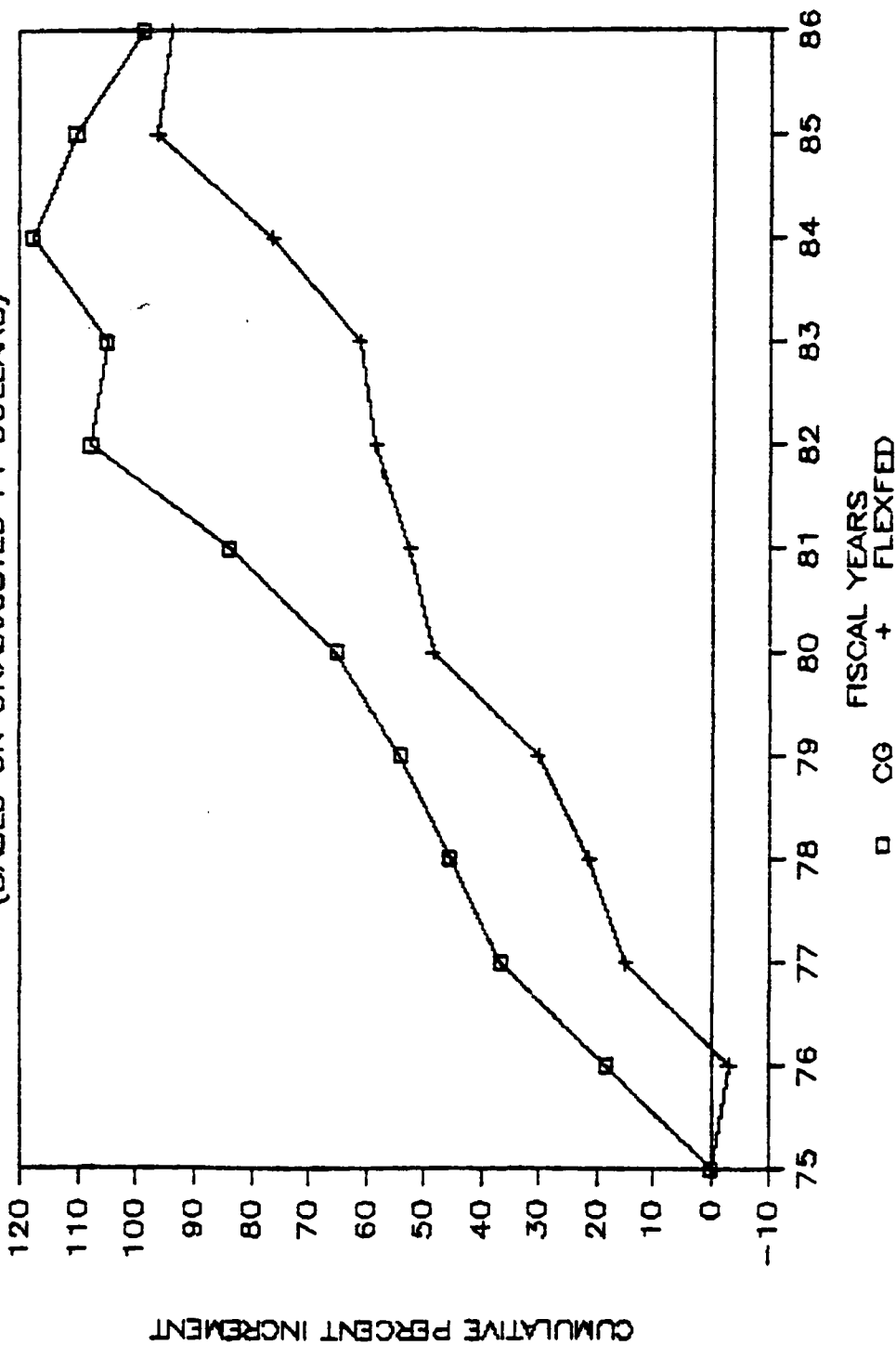


Figure 11 - Cumulative Unadjusted Budget Authority Change
CG vs. FLEXFED

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

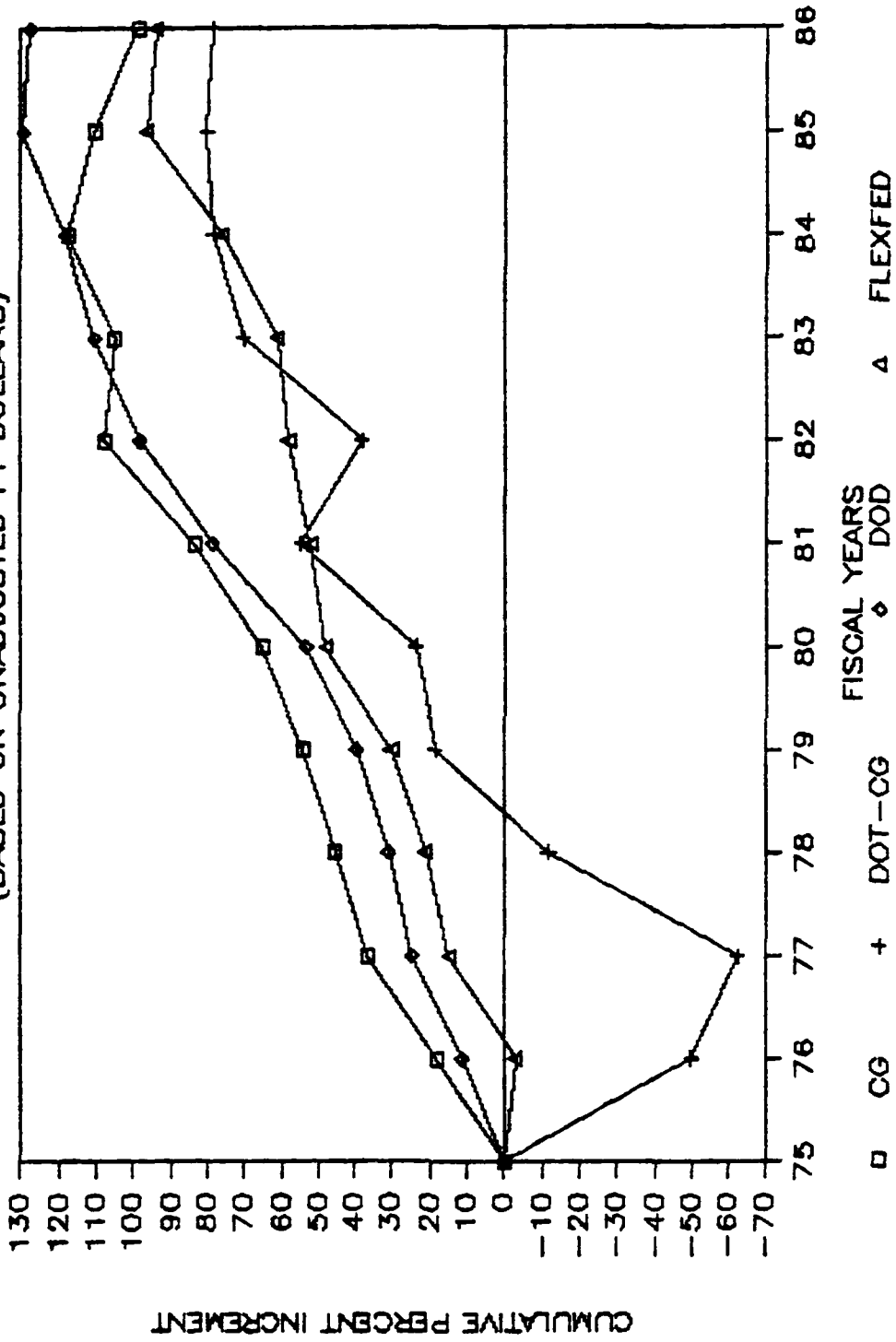


Figure 12 - Cumulative Unadjusted Budget Authority Change Composite

CUMULATIVE OUTLAY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

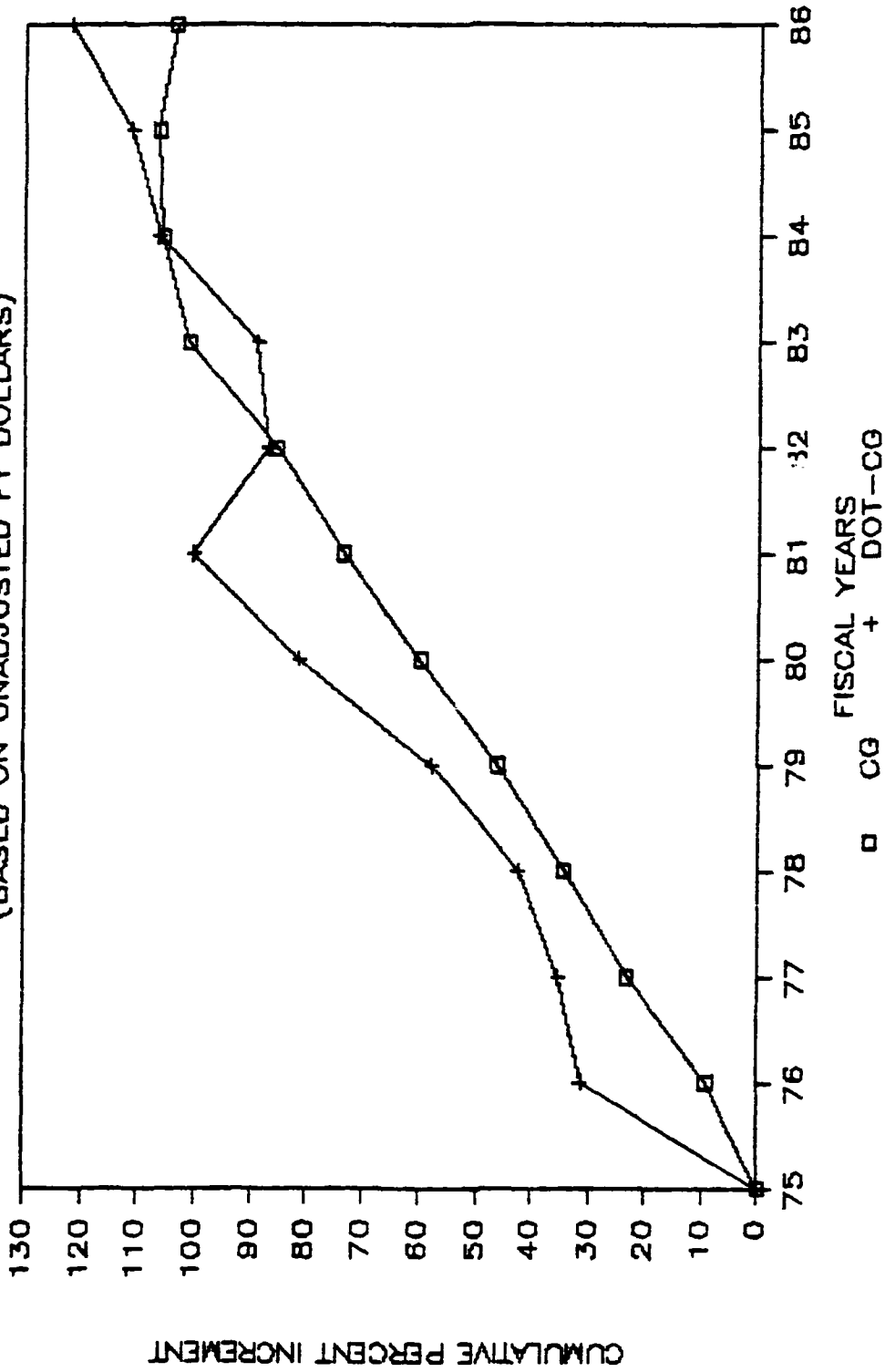


Figure 13 - Cumulative Unadjusted Outlay Change
CG vs. DOT-CG

CUMULATIVE OUTLAY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

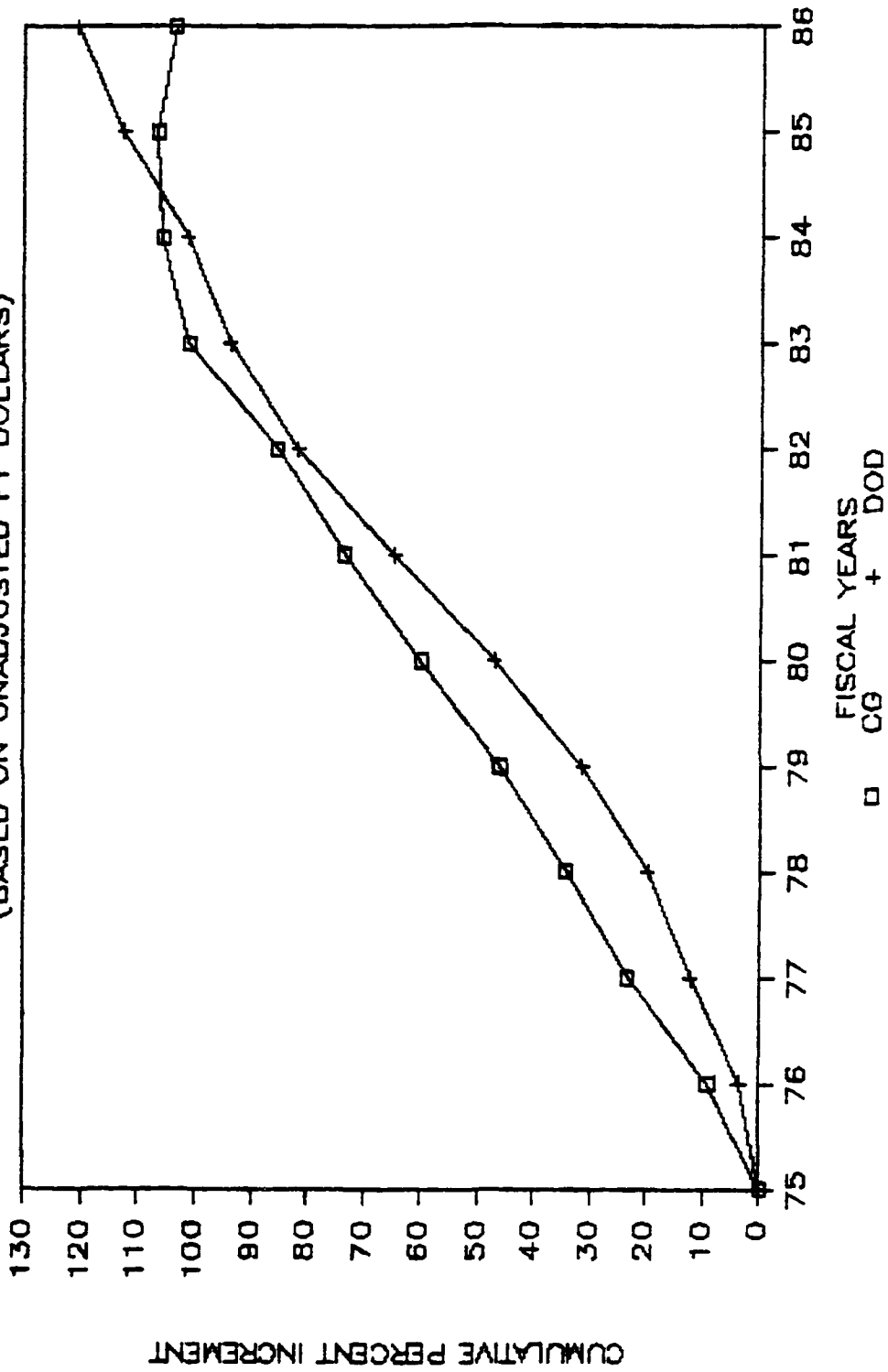


Figure 14 - Cumulative Unadjusted Outlay Change
CG vs. DOD

CUMULATIVE OUTLAY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

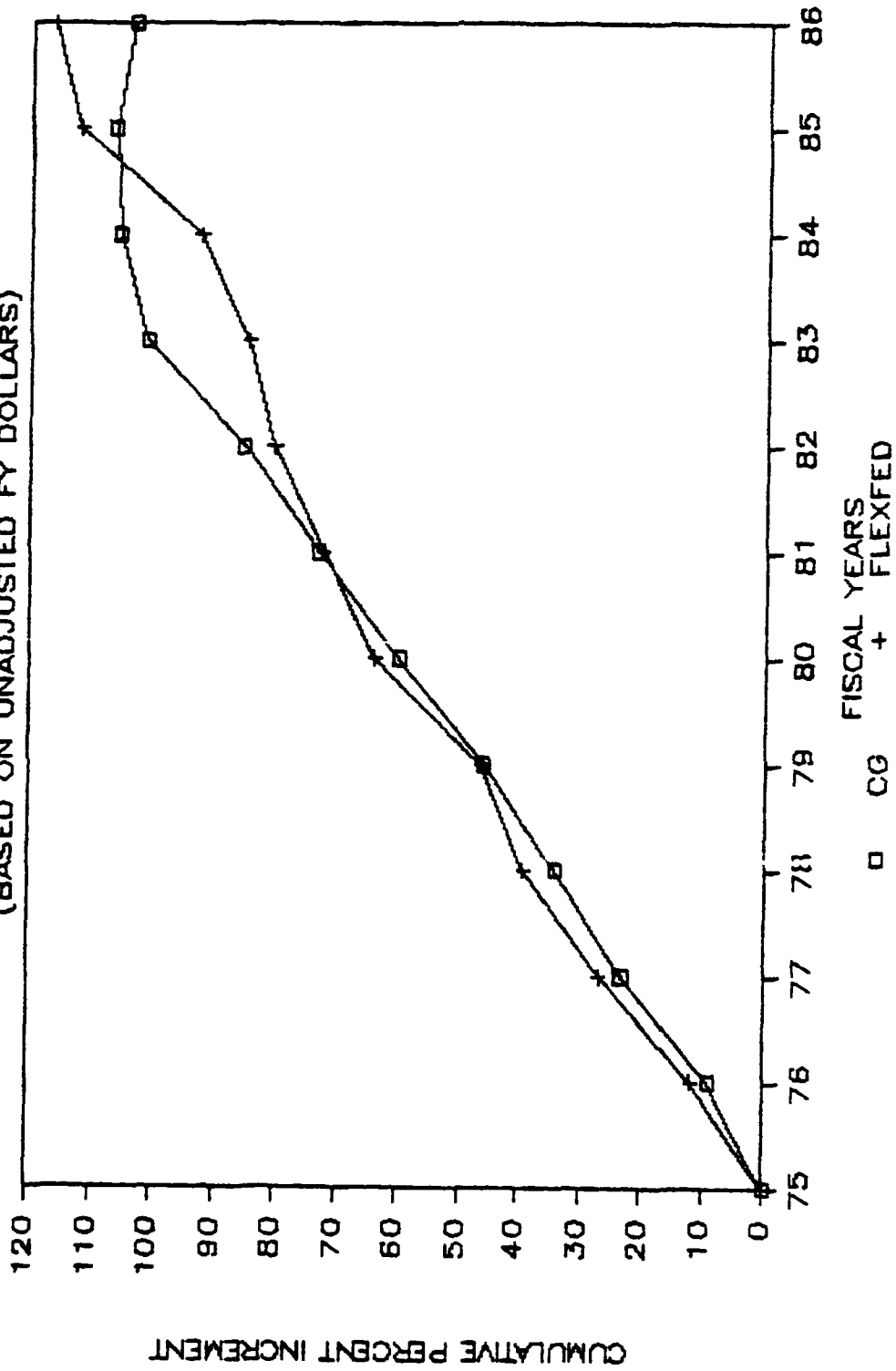


Figure 15 - Cumulative Unadjusted Outlay Change
CG vs. FLEXPED

CUMULATIVE OUTLAY CHANGE

(BASED ON UNADJUSTED FY DOLLARS)

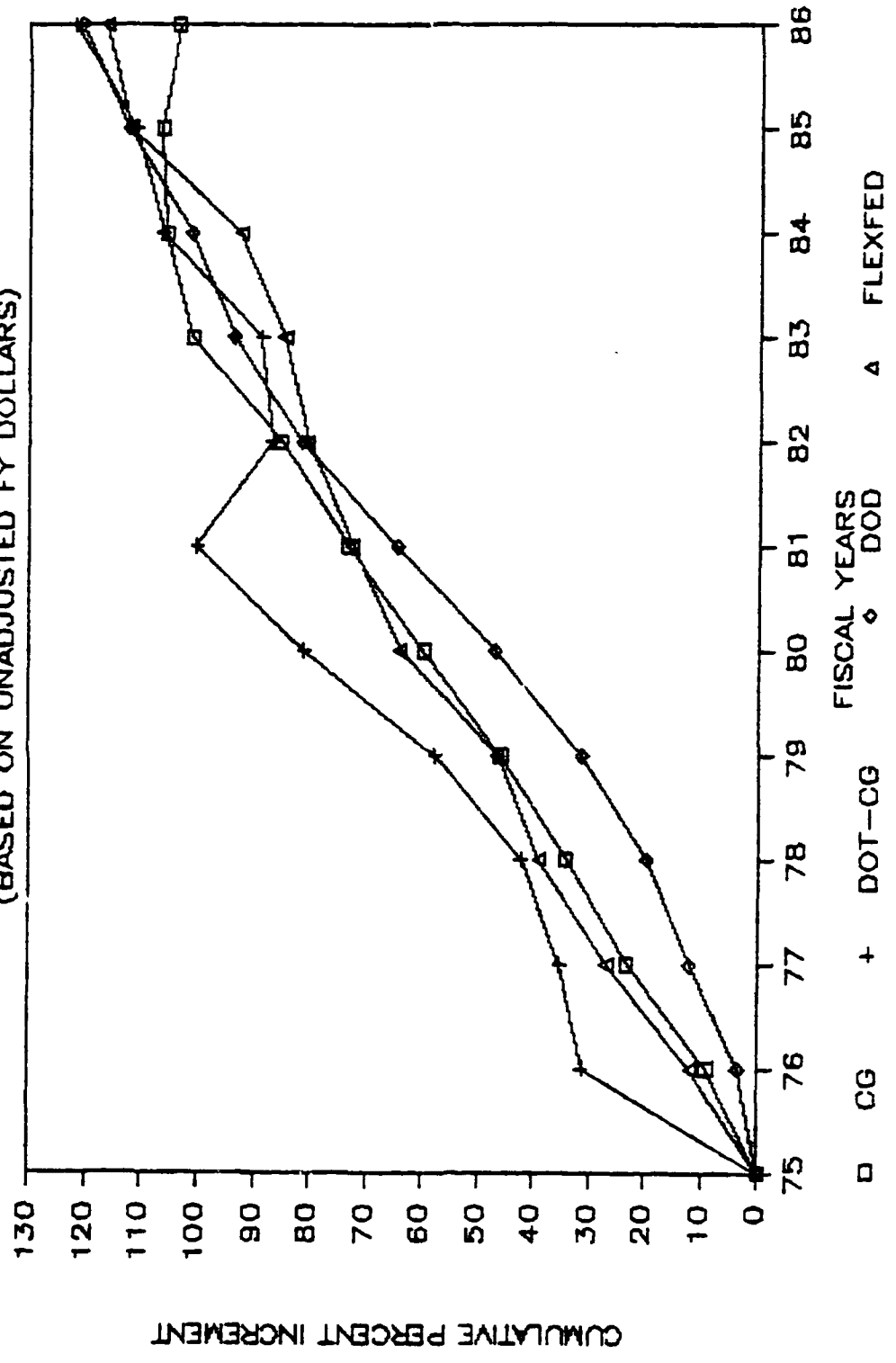


Figure 16 - Cumulative Unadjusted Outlay Change Composite

D. BUDGET ANALYSIS

The annual percentage increments in Table 5 (p. 14) and Figures 1-8 (pp. 15-22) indicate that Budget Authority is much more volatile than Budget Outlays. This is especially true with DOT-CG, which oscillates from a negative 49.62% increment to a positive increment of 50.86% within three years. However, the Budget Outlays for the same period are all positive increments ranging from 3.97% to 31.32%. When the data are converted into cumulative percentage terms, the Cumulative Outlays in Table 6 show a steady increase from FY-76 thru FY-81. Therefore, when the multi-year Budget Authority is spread out over the appropriate years of expenditure, the Budget Outlays present a much clearer picture for analysis.

The annual Outlays for the Coast Guard are greater than DOT-CG in only 4 of the 11 years under study. However, the cumulative percentage increase over the 11 years shows the Coast Guard with 98.74% compared to only a 78.81% increase for DOT-CG. The major reason for this effect is the wide variation of incremental change for DOT-CG due to large incremental funding for major procurements, such as upgrades of FAA control centers (Budget Authority 1975), followed by a return to normal levels of spending in the succeeding years, which results in a negative percentage increment. While the Coast Guard can implement procurement changes over a period of several years, DOT-CG may have to

implement some major safety transportation related changes in a short time frame (one or two years) to ensure commonality throughout the system.

The Coast Guard comparison with DOD is much more straight-forward. During the Carter Administration, DOD experienced a reduced rate of growth following the Vietnam build-up. Therefore, the Coast Guard fared well in comparison with incremental increases in outlays exceeding DOD from FY-76 thru FY-79. After several years of decline, and in the wake of the Iran hostage affair, the Carter Administration started to increase the DOD budget. The trend was escalated when the Reagan Administration took office. As a result, DOD has received a greater annual percentage increase in outlays than the Coast Guard in every year since FY-80 except for FY-83. In FY-83, the Coast Guard received additional funding (primarily in operating expenses) for combating the Cuban refugee exodus and related drug interdiction. The increased national emphasis on drug interdiction has resulted in continued high levels of funding for the Coast Guard in this area, but at the expense of other operations as the Coast Guard budget was cut in subsequent years.

Table 5 and Figures 5 thru 8 indicate that the overall trend is that the Coast Guard is not treated quite the same as the other military services. In times of military decline, the Coast Guard has received slightly greater

percentage increments in outlays as a rule, while in times of military resurgence the Coast Guard receives smaller increments than DOD.

The comparison of the Coast Guard to the flexible portion of the Federal Budget (FLEXFED) indicates that the Coast Guard has been budgeted at a growth pattern similar to that of DOD. The percentage increment of Budget Outlays for the Coast Guard was less than FLEXFED for each year that DOD is less than FLEXFED. Likewise, each year that the incremental percentage for DOD exceeded FLEXFED, the Coast Guard increment also exceeded FLEXFED except for FY-86.

As the national mood for fiscal austerity increased and with the Gramm-Rudman deficit targets beginning in FY-86, the Coast Guard appears to be getting less than its fair share of the Federal Budget when compared to any of the other categories under consideration.

However, as indicated earlier in the study, the test of Fair Share should not be decided on an annual basis. Therefore, in addition to the analysis previously discussed, a statistical analysis was conducted. Using the Naval Postgraduate School's main-frame computer and "SPSSX" statistical package, the annual percentage increments for both Budget Authority and Budget Outlays for each category were compared. The tests were conducted at the 95% confidence level ($\alpha = .05$) and included a "ONEWAY" analysis of variance and a "SCHEFFE" range test for the annual mean

percentage increments for each category. The pooled variance estimate "T PROB" values all exceeded the alpha value for the test of variance of annual percentage increments between the Coast Guard and each of the other categories. This indicates that there is no significant variance differential at the 95% confidence level [SPSS, Inc., 1983, pp. 453-462]. The SCHEFFE test of the means was also conducted at the standard 95% confidence level and the printout for both Budget Authority and Budget Outlays stated "NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL", which indicates that the mean annual percentage increments are not significantly different at the 95% confidence level [SPSS, Inc., 1983, pp. 453-462].

The next chapter will convert the budgets into constant FY-82 dollars and compare the budget increments after discounting the effects of inflation.

III. CONSTANT DOLLAR BUDGETS

A. OMB DEFLATORS

One problem of converting annual dollars into constant dollars is selecting the appropriate index for conversion. The consumers price index and GNP deflators measure different goods and service costs than the Federal Budget utilizes. The Office of Management and Budget (OMB) produces deflators for the Federal Government as a whole, the Department of Defense, and the non-military portions of the Federal Government. The difference between types of deflators is minimal and resulted in the decision to utilize the same OMB deflator for all categories to simplify the analysis. OMB publishes the Historical Tables of the United States Government (series); the FY-88 edition of the tables covering the period under study was selected and a FY-82 base year was employed to adjust the raw data.

TABLE 7

CONSTANT FY-82 DOLLAR DEFLATORS FOR THE FEDERAL BUDGET

<u>FISCAL</u> <u>YEAR</u>	<u>ANNUAL</u> <u>DEFLATOR</u>	<u>FISCAL</u> <u>YEAR</u>	<u>ANNUAL</u> <u>DEFLATOR</u>
1975	1.7633	1981	1.0712
1976	1.6402	1982	1.0000
1977	1.5215	1983	0.9606
1978	1.4218	1984	0.9274
1979	1.3113	1985	0.8961
1980	1.1831	1986	0.8751

[Office of Management and Budget, 1987, pp. 6.1(6)-6.1(8)]

B. BUDGET DATA IN CONSTANT DOLLARS

The budget data from Table 4 are converted into FY-82 dollars and displayed below in Table 8. Although the converted dollar amounts are not significant by themselves, they are provided to permit the reader to follow the conversion to percentage terms in Table 9 on page 38.

TABLE 8

ADJUSTED COMPARISON BUDGETS
(IN MILLIONS OF FY-82 DOLLARS)

<u>Budget Outlays</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	\$1,638	\$14,666	\$149,915	\$356,997
76	\$1,663	\$17,915	\$144,399	\$371,569
77	\$1,762	\$17,278	\$145,531	\$396,555
78	\$1,826	\$17,299	\$146,500	\$416,056
79	\$1,844	\$18,423	\$150,818	\$412,223
80	\$1,936	\$20,498	\$157,159	\$436,273
81	\$1,986	\$22,126	\$167,210	\$428,760
82	\$2,077	\$17,840	\$182,850	\$432,629
83	\$2,312	\$17,504	\$196,943	\$432,892
84	\$2,335	\$19,860	\$204,794	\$451,291
85	\$2,275	\$20,145	\$219,878	\$520,870
86	\$2,155	\$21,804	\$232,462	\$530,758

<u>Budget Authority</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	\$1,646	\$32,067	\$151,313	\$503,880
76	\$1,814	\$15,027	\$156,988	\$454,863
77	\$1,990	\$12,157	\$164,968	\$497,759
78	\$2,024	\$17,138	\$163,960	\$495,165
79	\$2,028	\$20,575	\$163,920	\$497,086
80	\$2,032	\$19,551	\$168,731	\$530,327
81	\$2,179	\$23,219	\$191,087	\$499,155
82	\$2,526	\$18,021	\$213,751	\$493,687
83	\$2,358	\$22,872	\$230,048	\$488,047
84	\$2,566	\$23,951	\$239,396	\$541,495
85	\$2,297	\$23,484	\$257,005	\$628,561
86	\$1,981	\$22,591	\$246,248	\$598,176

C. ANNUAL PERCENTAGE INCREMENTS

With the budgets restated in FY-82 dollars, the annual percentage increments were computed in the same manner as discussed in Chapter II. The adjusted percentage increments are depicted below in Table 9 and shown graphically in Figures 17 thru 24.

TABLE 9

ANNUAL PERCENTAGE INCREMENTS
(BASED ON CONSTANT FY-82 DOLLARS)

<u>Budget Outlays</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	1.50%	22.15%	-3.68%	4.08%
77	5.95%	-3.55%	0.78%	6.72%
78	3.64%	0.12%	0.67%	4.92%
79	3.18%	6.49%	2.95%	-0.92%
80	2.77%	11.27%	4.20%	5.83%
81	2.57%	7.94%	6.40%	-1.72%
82	4.60%	-19.37%	9.35%	0.90%
83	11.29%	-1.88%	7.71%	0.06%
84	1.02%	13.46%	3.99%	4.25%
85	-2.56%	1.43%	7.37%	15.42%
86	-5.30%	8.23%	5.72%	1.90%
<u>Budget Authority</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	10.19%	-53.14%	3.75%	-9.73%
77	9.70%	-19.10%	5.08%	9.43%
78	1.75%	40.97%	-0.61%	-0.52%
79	0.20%	20.05%	-0.02%	0.39%
80	0.19%	-4.98%	2.93%	6.69%
81	7.24%	18.76%	13.25%	-5.88%
82	15.89%	-22.39%	11.86%	-1.10%
83	-6.61%	26.92%	7.62%	-1.14%
84	8.80%	4.72%	4.06%	10.95%
85	-10.47%	-1.95%	7.36%	16.08%
86	-13.77%	-3.80%	-4.19%	-4.83%

BUDGET AUTHORITY ANNUAL CHANGE (BASED ON CONSTANT FY-82 DOLLARS)

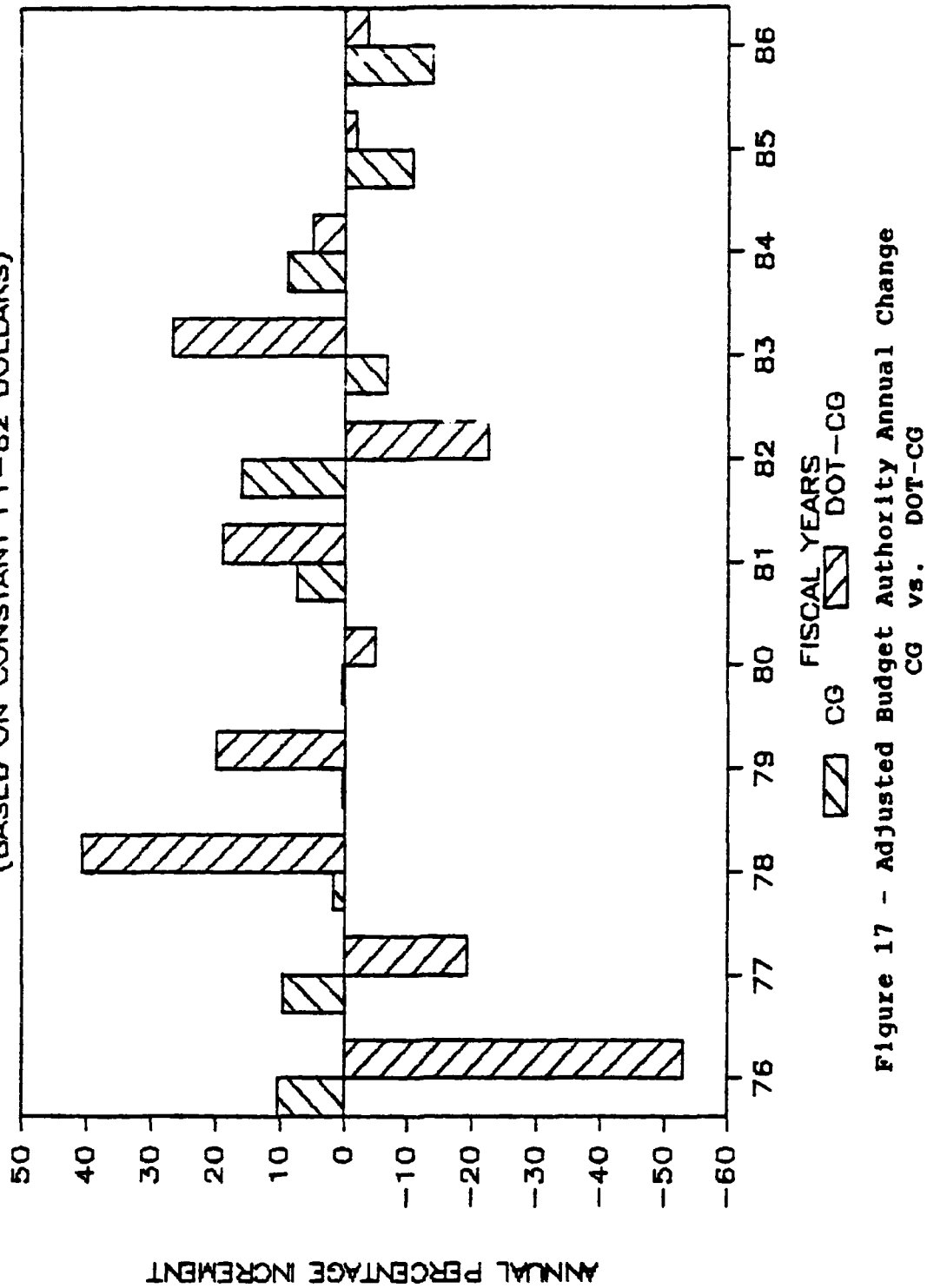


Figure 17 - Adjusted Budget Authority Annual Change
CG vs. DOT-CG

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

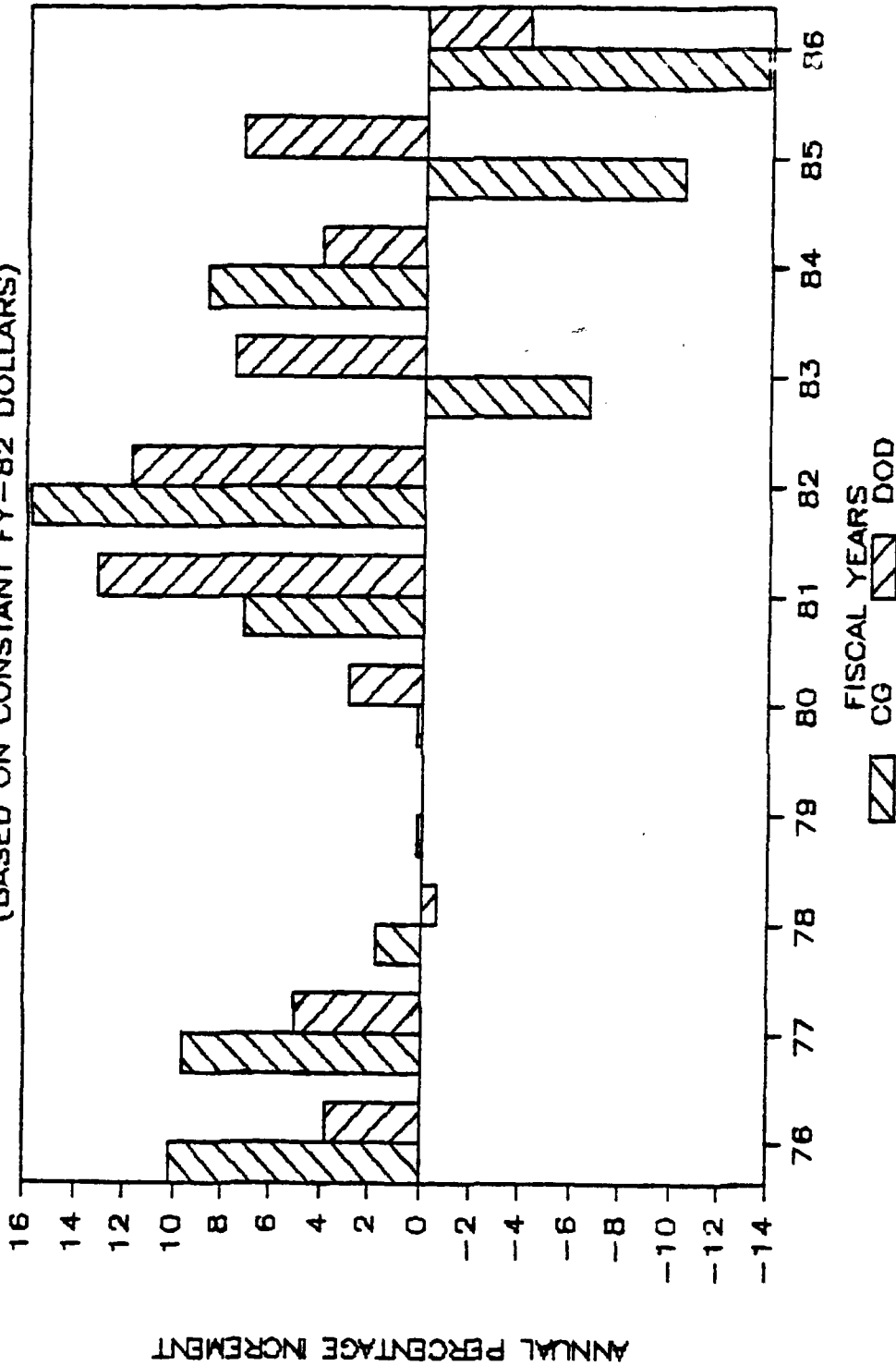


Figure 16 - Adjusted Budget Authority Annual Change
CG vs. DOD

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

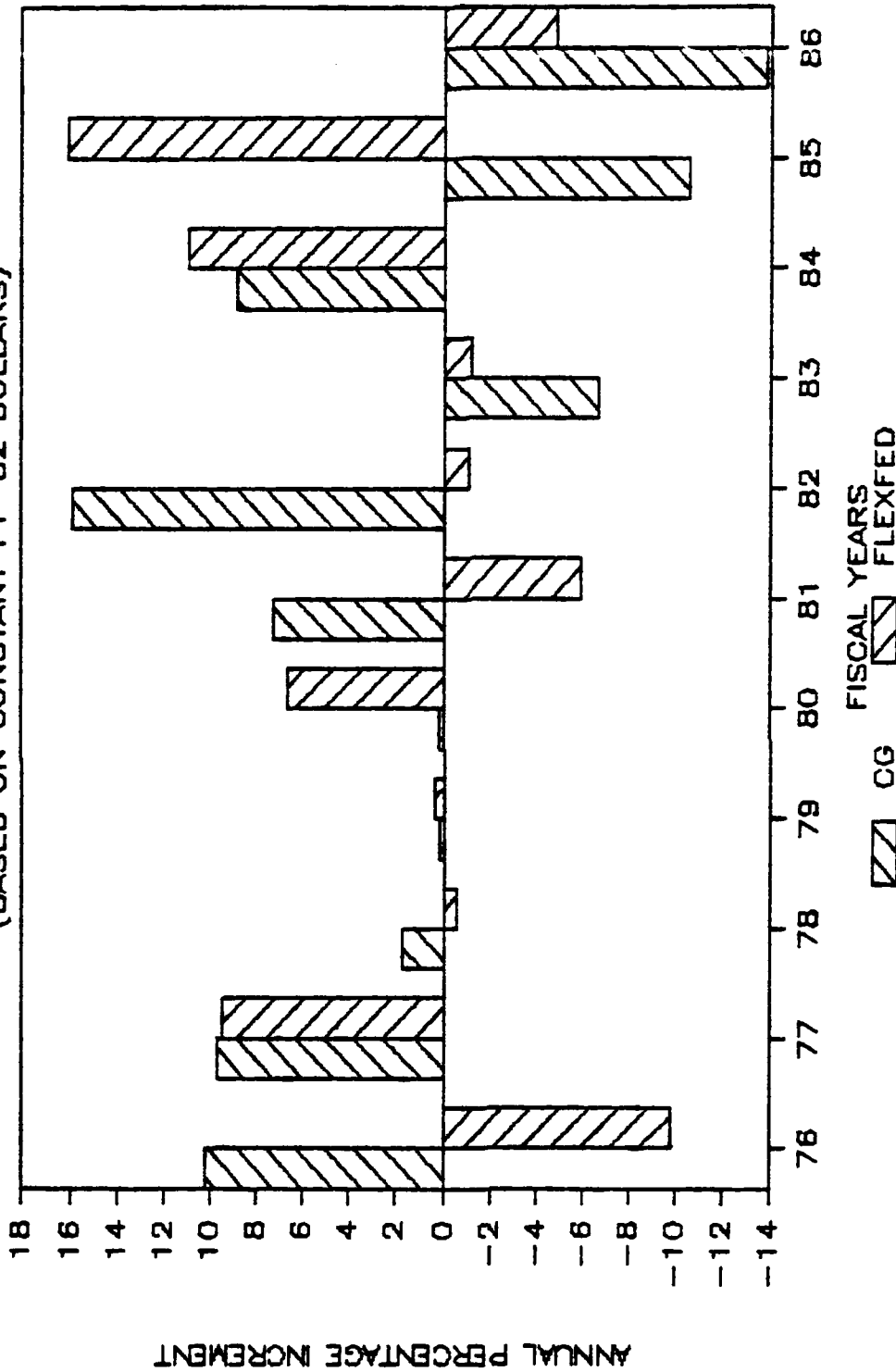


Figure 19 - Adjusted Budget Authority Annual Change
CG vs. FLEXFED

BUDGET AUTHORITY ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

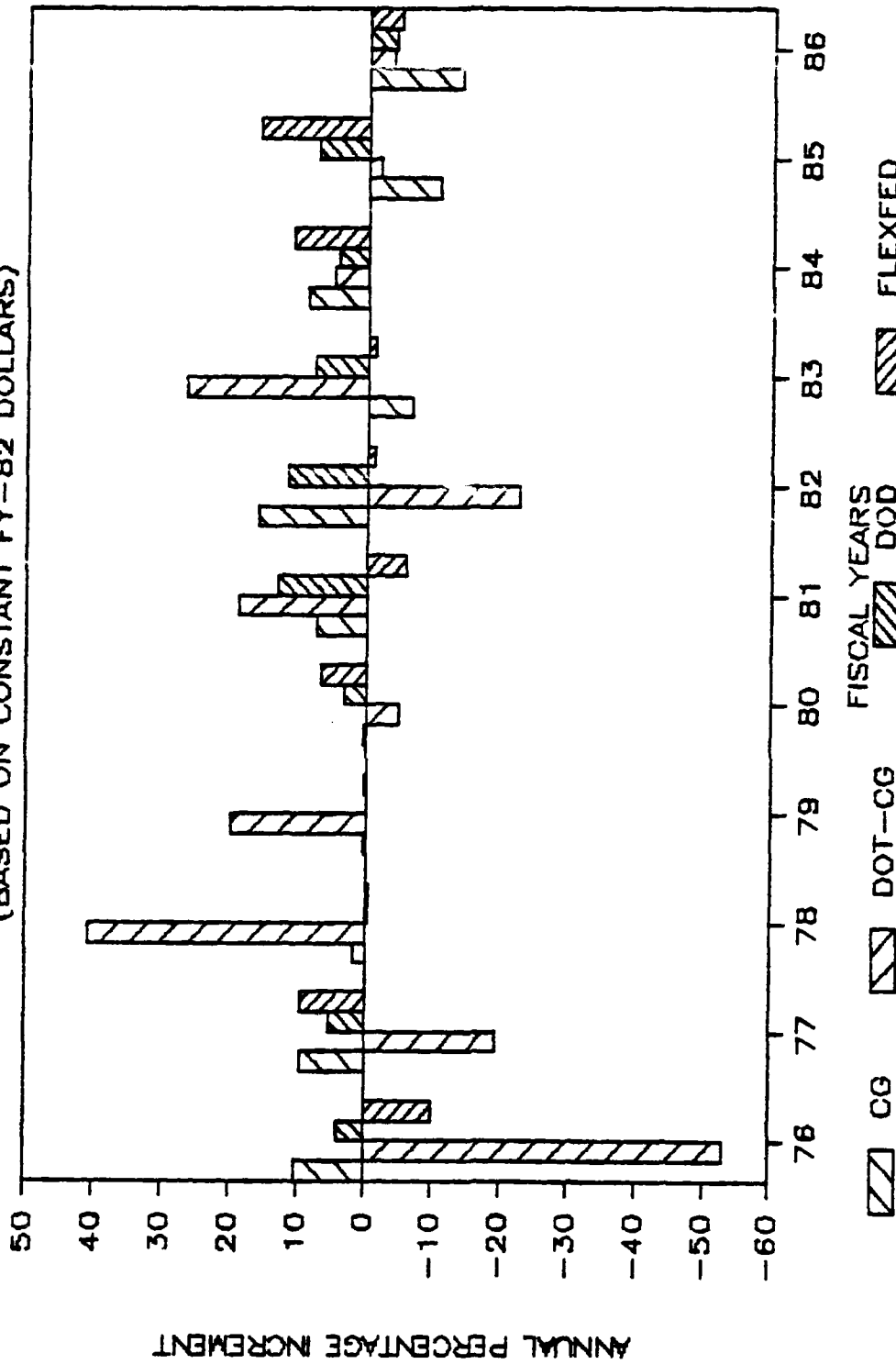


Figure 20 - Adjusted Budget Authority Annual Change Composite

OUTLAYS ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

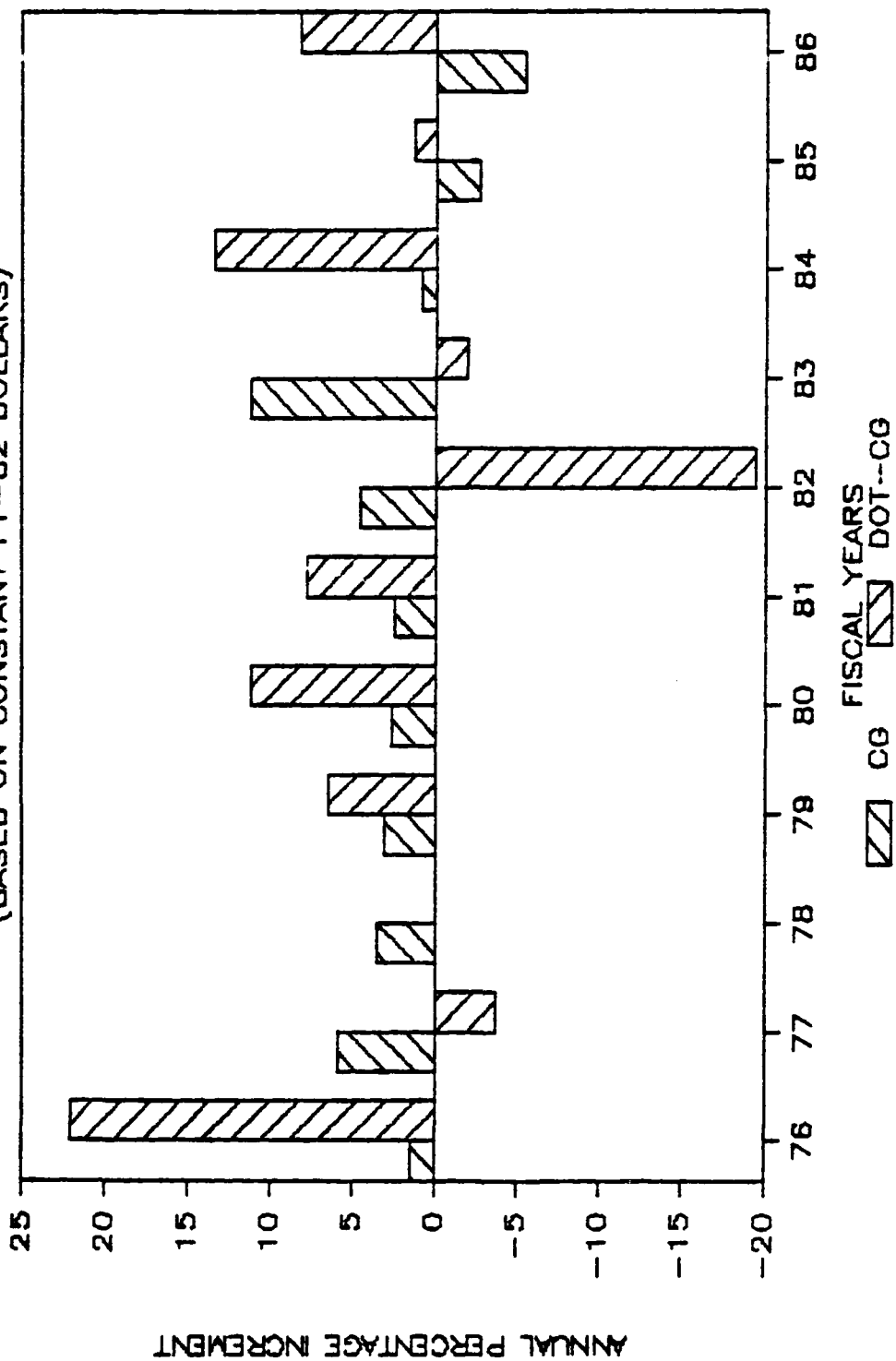


Figure 21 - Adjusted Outlays Annual Change
g vs. DOT-CG

OUTLAYS ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

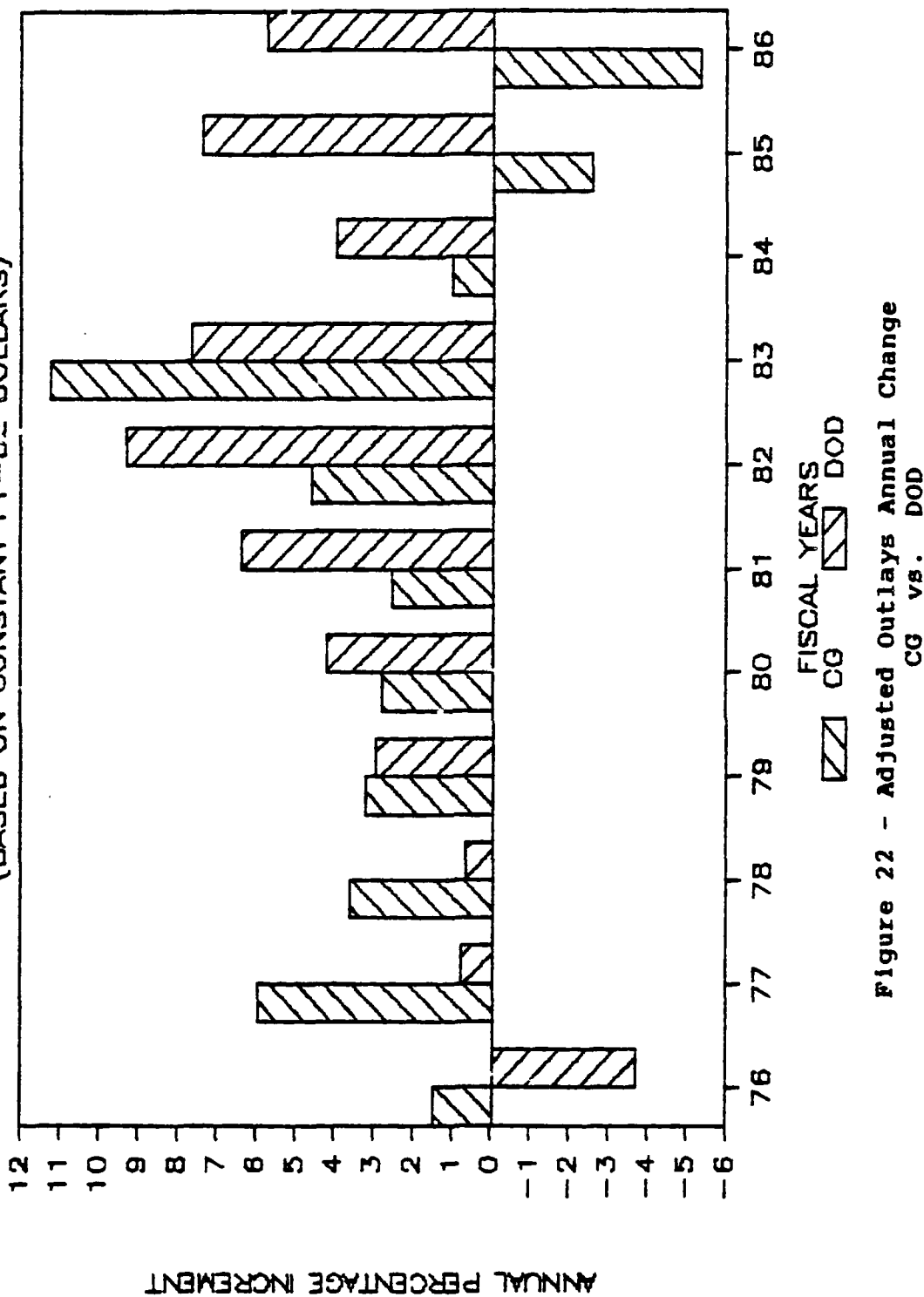


Figure 22 - Adjusted Outlays Annual Change
CG vs. DOD

OUTLAYS ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

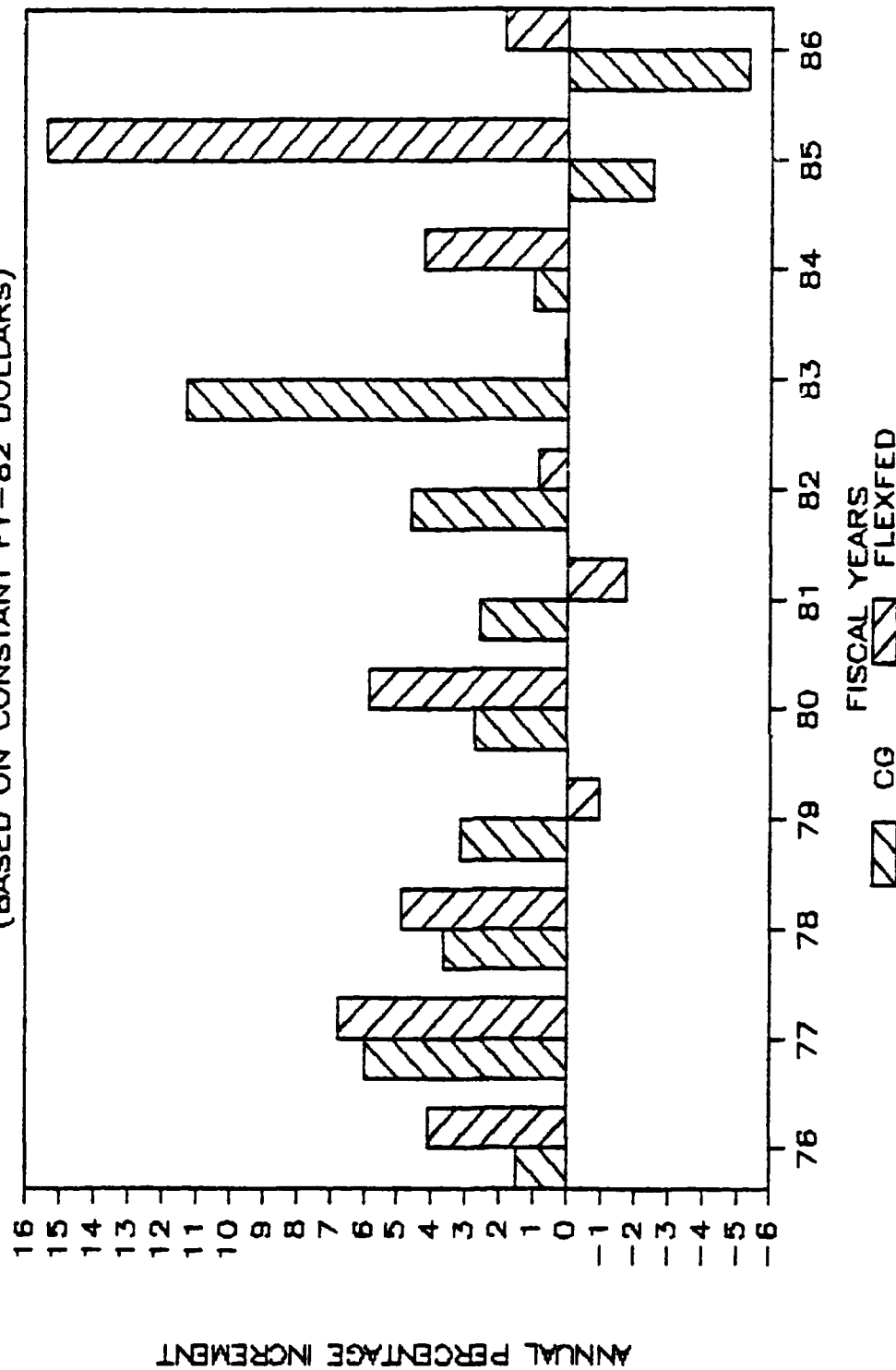


Figure 23 - Adjusted Outlays Annual Change
CG vs. FLEXFED

OUTLAYS ANNUAL CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

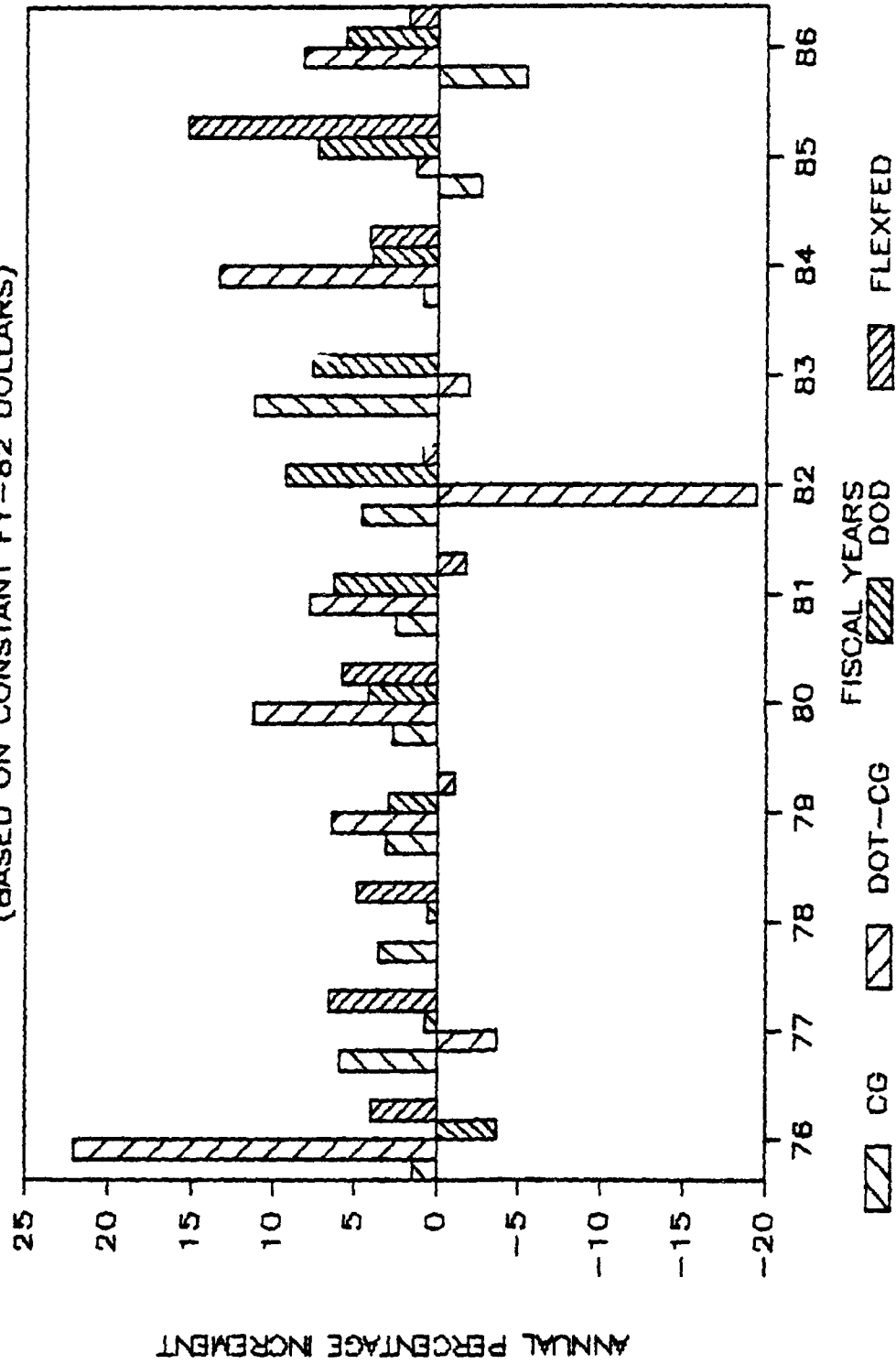


Figure 24 - Adjusted Outlays Annual Change Composite

D. CUMULATIVE PERCENTAGE INCREASES

The preceding graphs compare the annual percentage increases in constant FY-82 dollars. The cumulative percentage increases are depicted below in Table 10 and presented graphically in Figures 25 thru 32.

TABLE 10
CUMULATIVE PERCENTAGE INCREMENTS
(BASED ON CONSTANT FY-82 DOLLARS)

<u>Budget Outlays</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	1.50%	22.15%	-3.68%	4.08%
77	7.45%	18.60%	-2.90%	10.81%
78	11.09%	18.72%	-2.23%	15.72%
79	14.27%	25.21%	0.72%	14.80%
80	17.03%	36.48%	4.92%	20.64%
81	19.60%	44.42%	11.32%	18.91%
82	24.21%	25.05%	20.67%	19.82%
83	35.49%	23.17%	28.38%	19.88%
84	36.51%	36.63%	32.37%	24.13%
85	33.95%	38.06%	39.73%	39.55%
86	28.65%	46.29%	45.45%	41.44%

<u>Budget Authority</u>				
<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
75	*****	*****	*****	*****
76	10.19%	-53.14%	3.75%	-9.73%
77	19.89%	-72.24%	8.83%	-0.30%
78	21.64%	-31.27%	8.22%	-0.82%
79	21.83%	-11.21%	8.20%	-0.43%
80	22.02%	-16.19%	11.13%	6.26%
81	29.26%	2.57%	24.38%	0.38%
82	45.15%	-19.81%	36.24%	-0.72%
83	38.54%	7.10%	43.87%	-1.86%
84	47.33%	11.82%	47.93%	9.09%
85	36.87%	9.87%	55.29%	25.17%
86	23.10%	6.07%	51.10%	20.34%

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

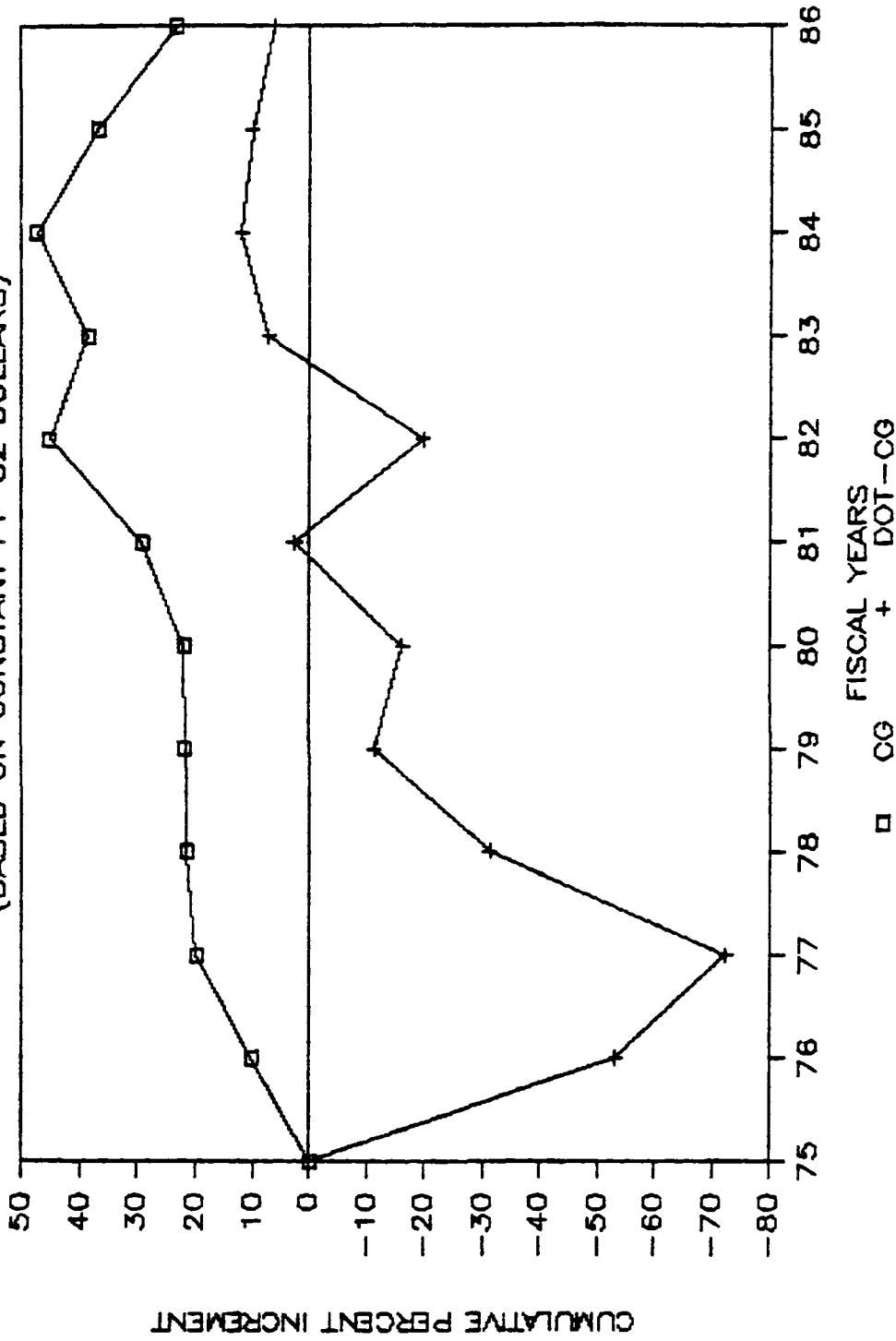


Figure 25 - Cumulative Adjusted Budget Authority Change
CG vs. DOT-CG

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

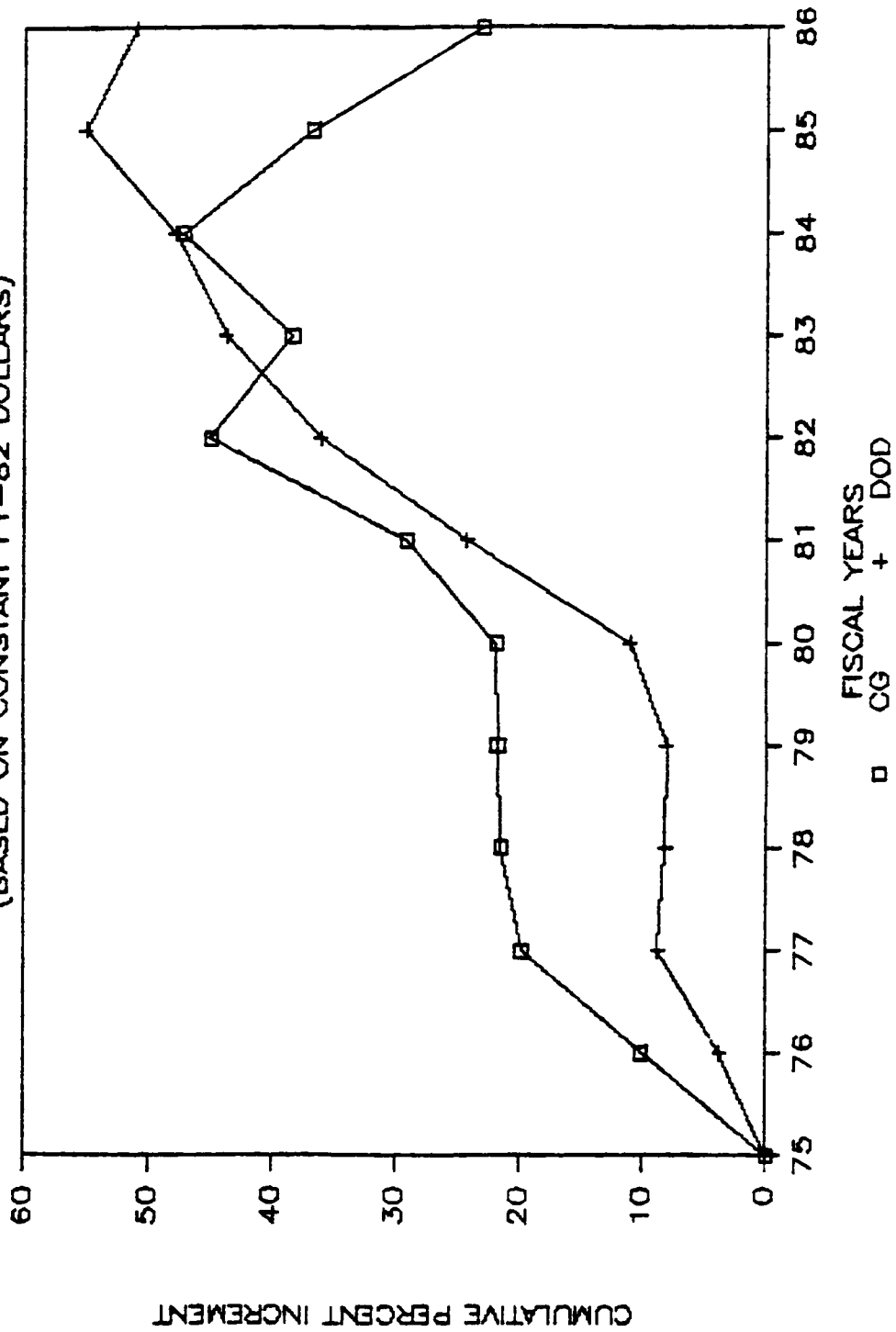


Figure 26 - Cumulative Adjusted Budget Authority Change
CG vs. DOD

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

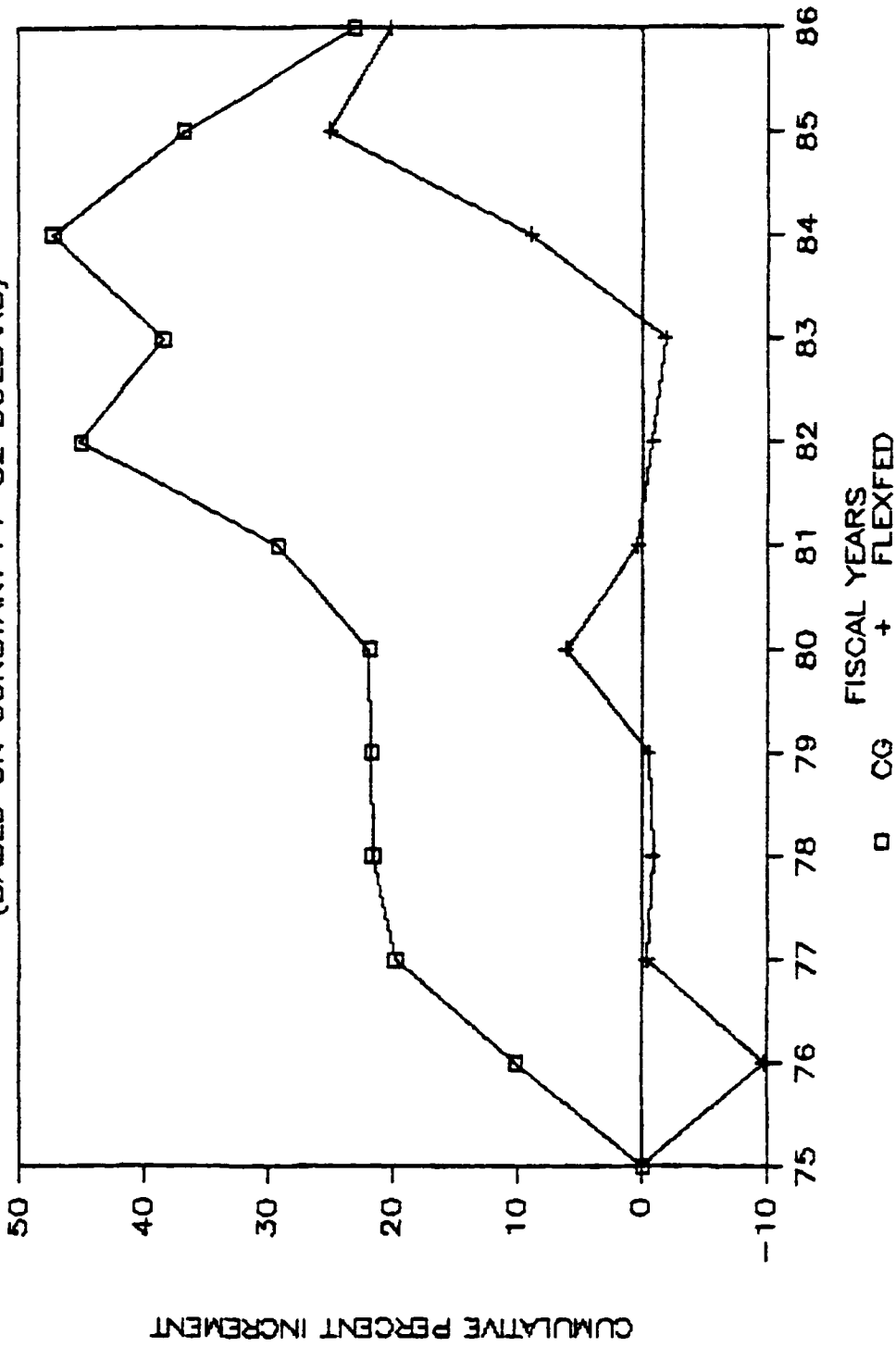


Figure 27 - Cumulative Adjusted Budget Authority Change CG vs. FLEXFED

CUMULATIVE BUDGET AUTHORITY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

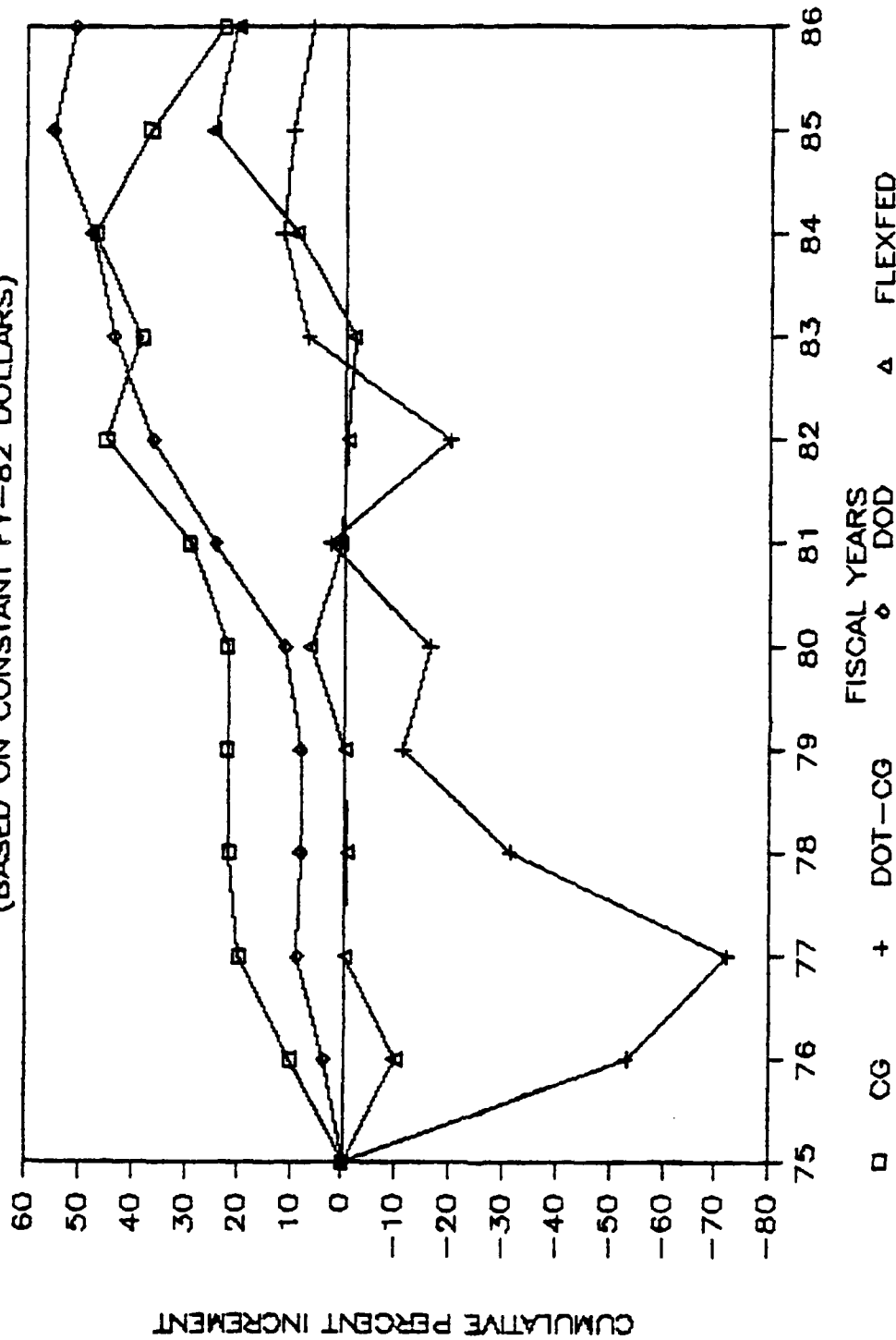


Figure 26 - Cumulative Adjusted Budget Authority Change Composite

CUMULATIVE OUTLAY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

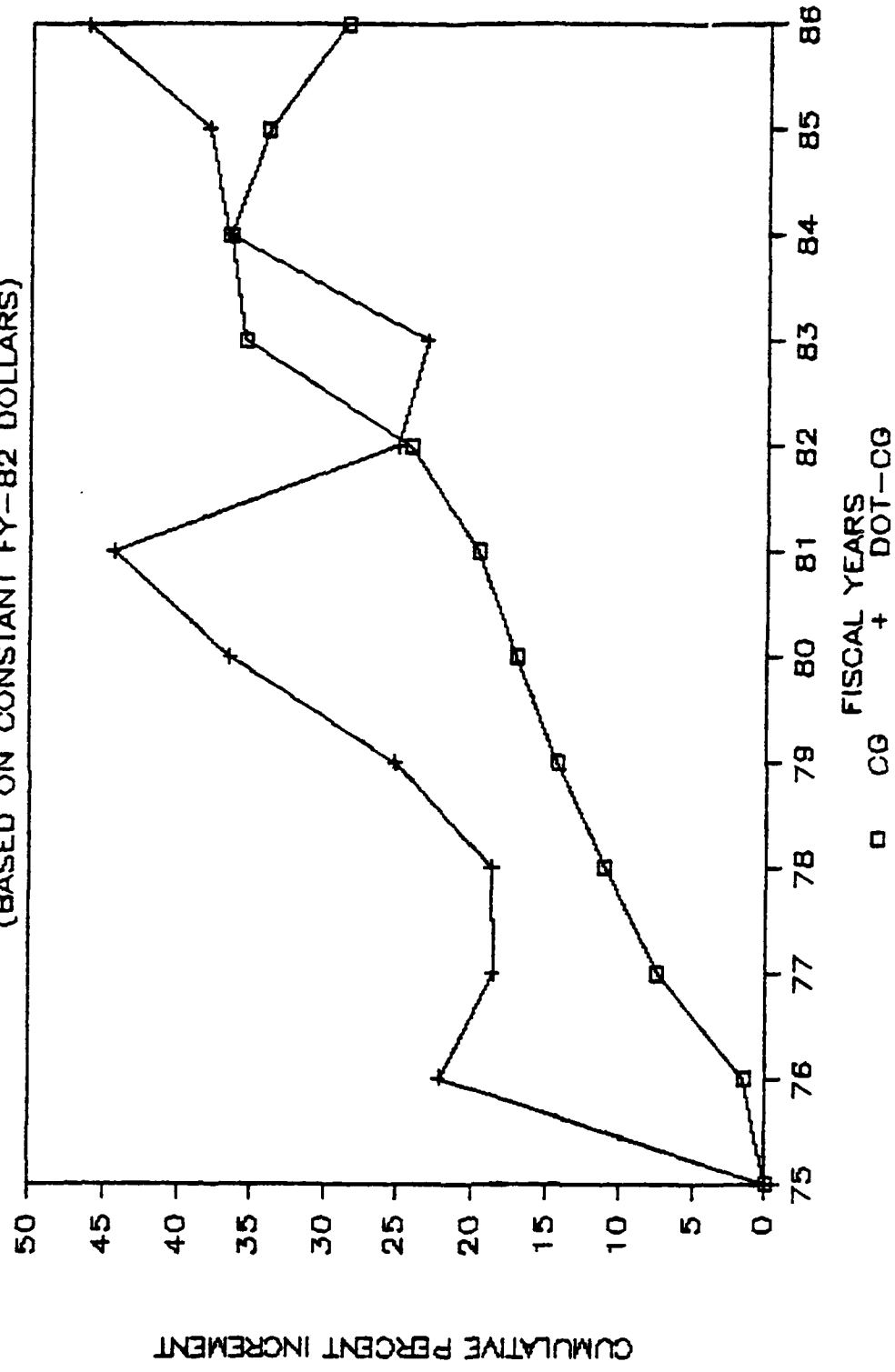


Figure 29 - Cumulative Adjusted Outlay Change
CG vs. DOT-CG

CUMULATIVE OUTLAY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

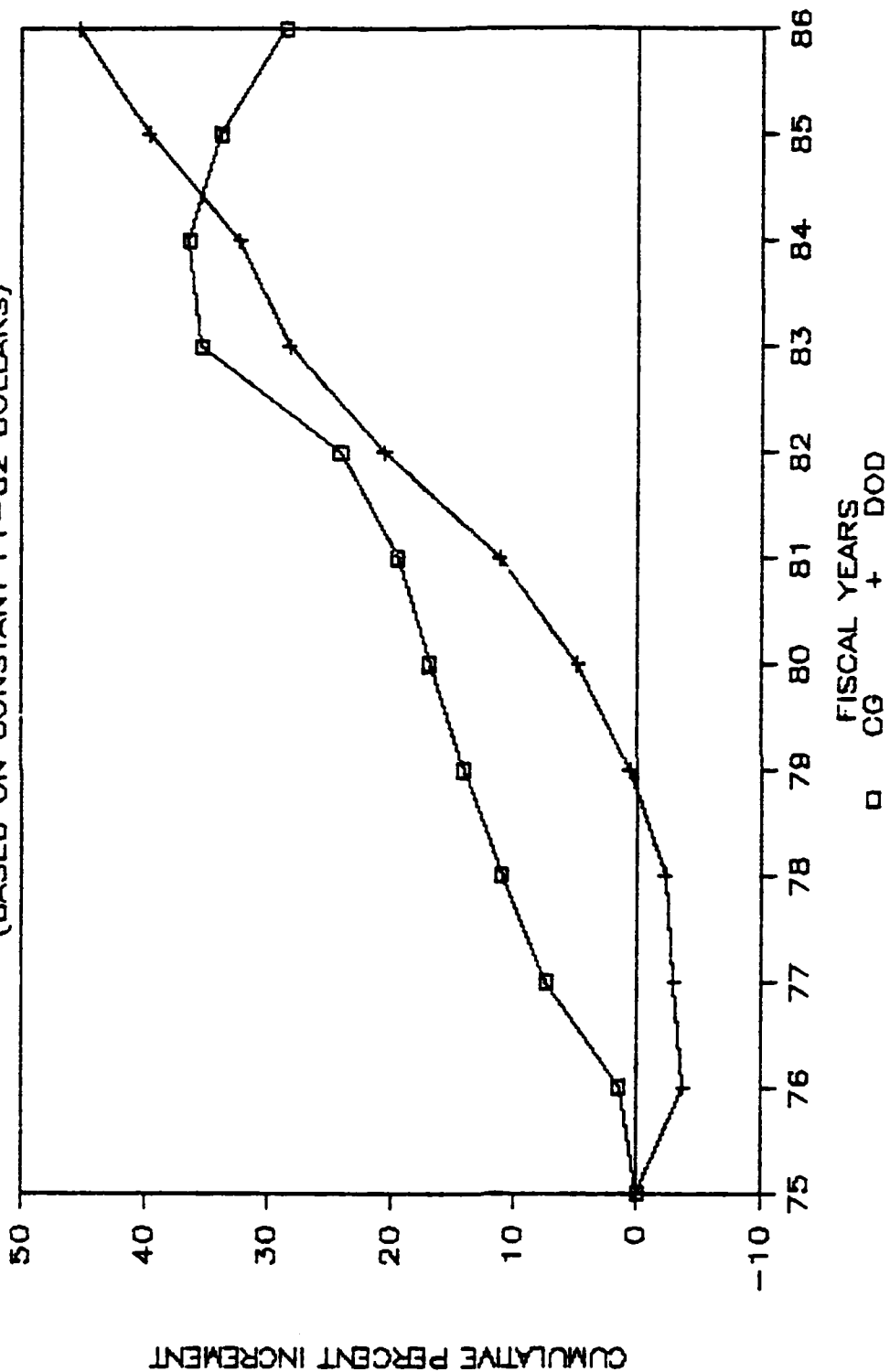


Figure 30 - Cumulative Adjusted Outlay Change
CG vs. DOD

CUMULATIVE OUTLAY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

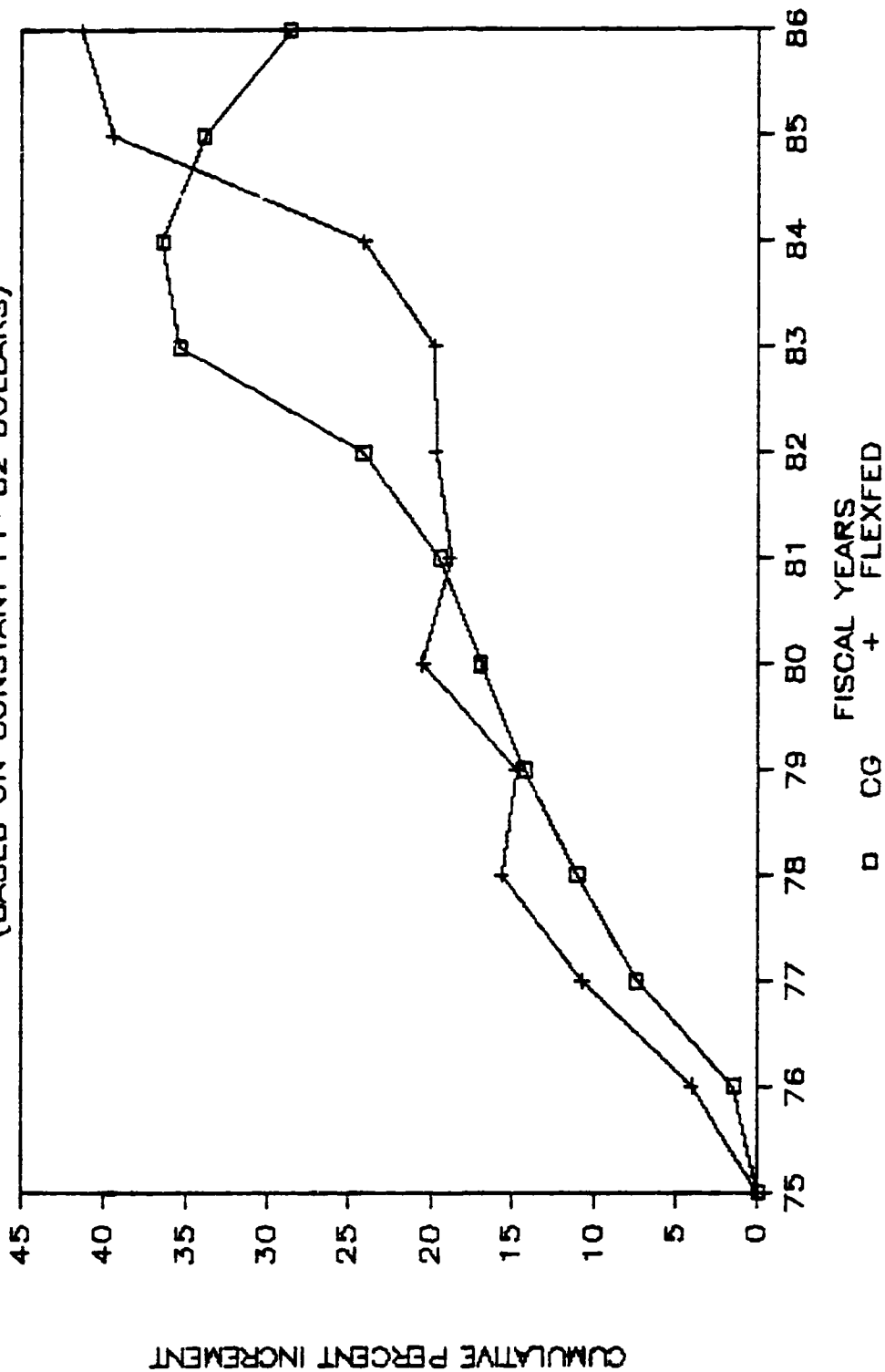


Figure 31 - Cumulative Adjusted Outlay Change
CG vs. FLEXFED

CUMULATIVE OUTLAY CHANGE

(BASED ON CONSTANT FY-82 DOLLARS)

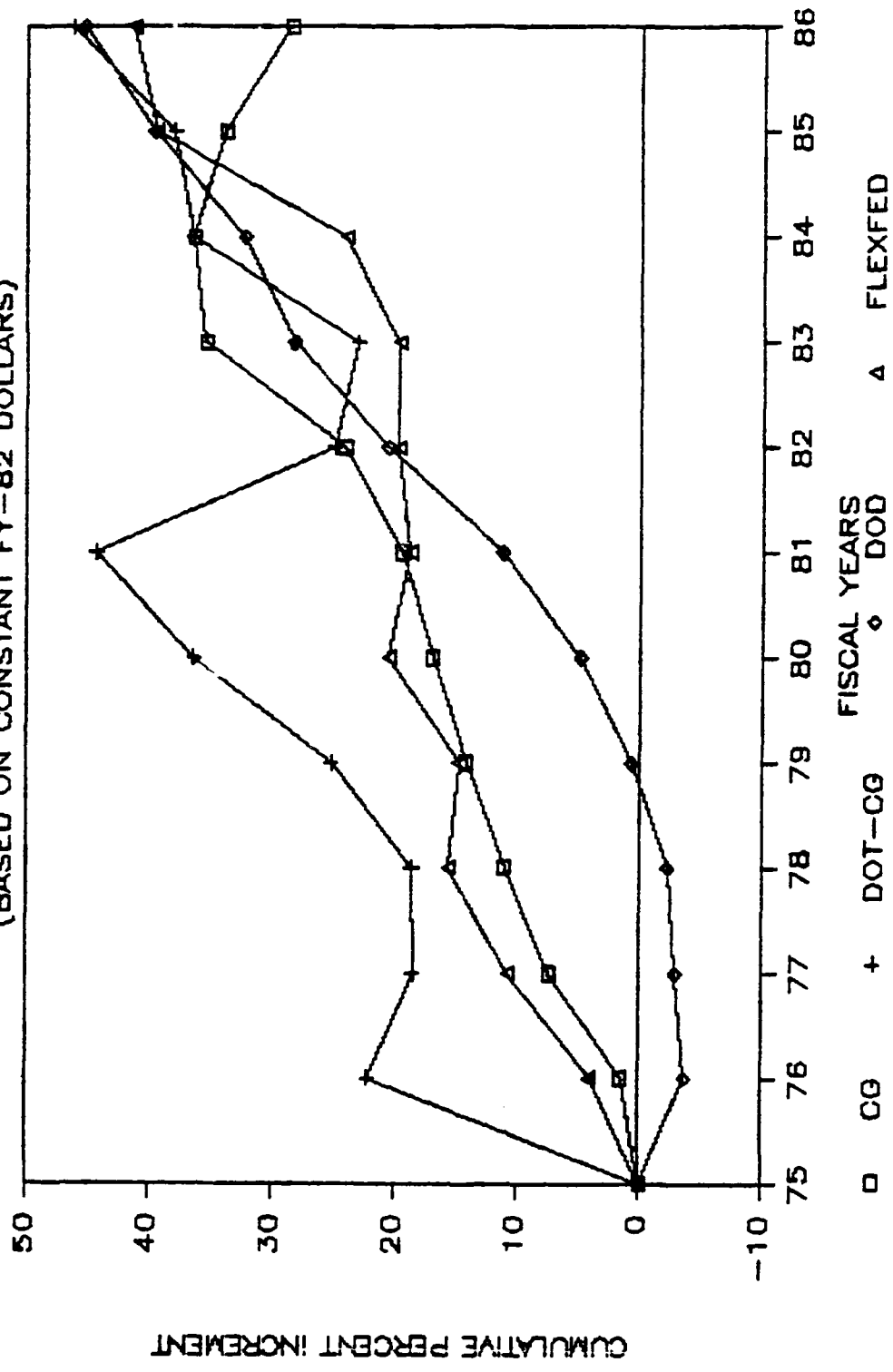


Figure 32 - Cumulative Adjusted Outlay Change Composite

E. BUDGET ANALYSIS

The annual percentage increments (based on constant FY-82 dollars) in Table 8 (p. 37) and Figures 17-24 (pp. 39-46) indicate that less variation in annual percentage increments is present when budgets are adjusted for inflation. Although the trends indicated in the graphs are flatter in constant dollar terms, the comparisons between the Coast Guard and the other categories remain the same.

A significant comparison can be made of the Cumulative Percentage Increments in Table 10 and the corresponding graph for Budget Outlays in Figure 32. The apparent bottom line is that everyone but the Coast Guard has received a cumulative increase exceeding 40%, while the Coast Guard has only received 28.65% for the period. At first glance, the obvious conclusion is that the Coast Guard did not receive its Fair Share for the period under consideration. However, if you consider only the years up to FY-83, the Coast Guard appears to have received over eight percent more cumulative increase in Budget Outlays for the fiscal years 1976 thru 1983. The choice of years to be analyzed can change the results to make a particular point in the budgetary process.

The same statistical tests of the adjusted annual percentage data were conducted using SPSSX. The tests again indicated that no significant variance differential existed at the 95% confidence level when utilizing the "ONEWAY"

contrasts. The SCHEFFE test results were also the same. The mean annual percentage increments (based on constant FY-82 dollars) are not significantly different at the 95% confidence level.

The table below presents the means and standard deviations from the statistical analysis of annual percentage increments of Budget Outlays (Based on Constant FY-82 Dollars) in Table 9 on page 38.

TABLE 11
MEANS AND STANDARD DEVIATIONS
(BASED ON CONSTANT FY-82 BUDGET OUTLAYS ANNUAL CHANGES)

<u>CATEGORY</u>	<u>MEANS</u>	<u>STANDARD DEVIATIONS</u>
COAST GUARD	2.6055	4.3003
DOT-CG	4.2082	10.8180
DOD	4.1327	3.7928
FLEXFED	3.7673	4.7744
FOR ENTIRE POPULATION	3.6784	6.3706

The significance of the above data is that the mean annual percentage increase for the Coast Guard is well below the average increase for the other categories. If it were not for the high standard deviations, the Coast Guard increase would not be considered the same with a 95% confidence level. However, referring back to Table 10 on page 47 and Figure 32 on page 55, the 1983 cumulative percentage for the Coast Guard was over 7% greater than all other categories. If the cumulative percentage is divided by the 8 years considered (FY-76 thru FY-83), the Coast Guard

would have a mean increase almost 1% greater than the average increase of the other categories. Therefore, it can again be seen how the choice of years to be analyzed can change the results.

Another way to view Fair Share is to conduct a common size analysis. Each budget category is represented as a percent of the total Federal Budget. The following table represents the common analysis for outlays in constant FY-82 dollars.

TABLE 12
COMMON SIZE ANALYSIS FOR BUDGET OUTLAYS
(BASED ON CONSTANT FY-82 DOLLARS)

<u>FY</u>	<u>CG</u>	<u>DOT-CG</u>	<u>DOD</u>	<u>FLEXFED</u>
76	0.28%	2.98%	24.02%	61.82%
81	0.28%	3.14%	23.75%	60.90%
86	0.24%	2.46%	26.21%	59.84%

The above common size analysis seems to reflect the administrations emphasis on military spending and a slight decrease in FLEXFED. The Coast Guard has remained relatively unchanged during the period with only 4/100 of one percent decrease in overall share of the budget. Therefore, the common size analysis also confirms that the Coast Guard has maintained it's Fair Share of the budget.

The next chapter summarizes the analysis, states the conclusions, and provides topics for consideration in future studies.

IV. CONCLUSIONS

A. REVIEW OF THE STUDY

The purpose of this thesis was to determine if the Coast Guard has received its "Fair Share" of increases in the federal budget over time. The time frame selected was fiscal years 1976 thru 1986 which included administrations from both major political parties. In addition, the time frame selected included periods of military decline and military resurgence.

The concept of incrementalism and fair share were discussed. The Coast Guard's budget was compared to the following budgets:

- (1) Department of Transportation less the Coast Guard portion of the budget (DOT-CG).
- (2) Department of Defense (DOD).
- (3) The flexible portion of the Federal Budget. This was defined as the Federal Budget less Social Security, interest on the National Debt, and excluding the Coast Guard portion of the budget (FLEXFED).

Budget data were presented in annual fiscal year dollars, annual percentage increments, and cumulative percentage increments for both Budget Authority & Budget Outlays. The data were then adjusted for inflation using the Office of Management and Budget (OMB) deflators for the Federal Government. The budget data were then restated in constant dollars, annual percentage increments (based on

constant dollars), and cumulative percentage increments (based on constant dollars). The data were also presented in graphical form to clarify the analysis.

B. CONCLUSIONS

Based on the statistical analysis over the test period, the conclusion is that the Coast Guard has receive its Fair Share of the Federal Budget. The statistical SCHEFFE test results indicated that "NO TWO GROUPS ARE SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL". The means listed in Table 11 (page 57) range from 2.6055% for the Coast Guard to 4.2082% for DOT-CG. If it was not for the high standard deviations (up to 10.8180 for DOT-CG), the Coast Guard increase would not be considered the same at a 95% confidence level. However, if only the data thru FY-83 were utilized, the Coast Guard would have almost a percent higher mean increase than each of the other categories.

A rough common size analysis was conducted and displayed in Table 12 (page 58). The data indicate that the Coast Guard's share of the budget held constant at 0.28% from FY-76 to FY-81. However, the Coast Guard's share dropped to 0.24% by FY-86. Since the drop is only 4/100 of one percent, the conclusion is that the Coast Guard has maintained it's Fair Share of the budget. The 2.19% increase of DOD's share and FLEXFED's share decrease of 1.96% of the budget over the selected time frame is viewed as the

result of the changing national priorities during the period.

The time period selected can significantly affect the subjective judgement based on the presentation of the data, especially with respect to cumulative percentage increase of outlays. For this reason, the ten year time frame was selected to reduce the bias inherent in the Fair Share analysis.

Budget Authority shows significantly more variance than Budget Outlays when analyzing annual percentage increments. Budget Outlays are more stable. Therefore, if an agency advocate is attempting to depict the agency as not receiving its Fair Share, the advocate would use Budget Authority over the relatively short period which is most advantageous to the argument.

The Coast Guard is treated more like DOD than non-military agencies with respect to the Federal Budget. In the years that DOD's annual percentage increment (in both fiscal year and constant dollars) was less than FLEXFED, the Coast Guard's increment was also less than FLEXFED. With the exception of FY-86, each year that DOD's annual percentage increment was greater than FLEXFED, the Coast Guard's increment was also greater than FLEXFED. However, when comparing DOD and Coast Guard directly, it should be noted that in the years of military decline (FY-76 thru FY-79), the Coast Guard had a greater percentage increase

than DOD. With the exception of FY-83 (Cuban exodus), the Coast Guard received a lower incremental percentage change than DOD during the period of military build-up (FY-80 thru FY-86).

C. AREAS FOR FURTHER RESEARCH

A more comprehensive look at why the Coast Guard received a lower increase than DOD in times of military build-up, and has taken a lower percentage cut in times of military decline, is also suggested. This might involve an analysis of the roles and strategies utilized by the Coast Guard in the budget process.

This study covered only a short period in the history of the Coast Guard. A more comprehensive study covering a greater period of time would eliminate the possible bias of the short time frame.

A comparison of the internal accounts between the Coast Guard and DOD budgets might indicate portions of the DOD budget that could be utilized as indices for similiar internal accounts in the Coast Guard budget.

An expanding agency requires increases in personnel as well as equipment to expand the scope of operations. Therefore, an analysis of the incremental change of personnel within agencies could be considered as another measure of Fair Share for further study.

The Coast Guard's "Index Adequacy" and validity could be explored. Due to the unique nature of the Coast Guard, the problem of whether to use the defense deflators, the deflators for non-defense, or the overall federal government deflators was a concern. An analysis of exactly what "basket of goods" is used by OMB to develop each of the deflators could be studied. The goods and services consumed by the Coast Guard is a mixture of defense and non-defense items. Therefore, a unique deflator for the Coast Guard could be developed.

LIST OF REFERENCES

- Anderson, John P. Distribution of Budgeted Outlays with Regard to the Availability of Funds in the DOD Budget. Master's Thesis, Naval Postgraduate School, Monterey, California, June 1983.
- Bailey, John J., and O'Connor, Robert J. "Operationalizing Incrementalism: Measuring the Muddles." Public Administration Review, January/February 1975, pp. 60-66.
- Bozeman, Barry, and Straussman, Jeffrey D. "Shrinking Budgets and the Shrinkage of Budget Theory." Public Administrative Review, November/December 1982, pp. 509-515.
- Office of Management and Budget. Budget of the United States. (series). Washington, D.C.: U.S. Government Printing Office, 1977-1988.
- Dye, Thomas. Understanding Public Policy. Englewood Cliffs, N.J.: Prentice Hall, 1972.
- Fenno, Richard P. Power of the Purse. Boston: Little, Brown and Company, 1966.
- Gergen, David. "Pentagon Follies." U.S. News & World Report, June 3, 1985, p. 76.
- Office of Management and Budget. Historical Tables, Budgets of the United States Government. FY-88 edition. Washington, D.C.: U.S. Government Printing Office, 1987.
- Housley, Jack B. Roles, Strategies, and Program Budgeting Within the Operations and Maintenance, Navy Appropriation Account. Master's Thesis, Naval Postgraduate School, Monterey, California, December 1986.
- LeLoup, Lance T. Budgetary Politics: Dollars, Deficits, Decisions. Brunswick, Ohio: King's Court Communications, Inc., 1980.
- LeLoup, L. T., and Moreland, William B. "Agency Strategies and Executive Review: The Hidden Politics of Budgeting." Public Administration Review, May/June 1978, p. 239.
- Pitsvada, B.T., and Draper, F.D. "Making Sense of the Federal Budget the Old Fashioned Way - Incrementally." Public Administration Review, September/October 1984, pp. 401-425.

Puckett, Dale L. "Concern." Commandant's Bulletin. October 24, 1987.

Sharkansky, Ira. The Politics of Taxing and Spending. New York: The Bobbs-Merrill Company, Inc., 1979.

SPSS, Inc. SPSSX User's Guide. New York: McGraw-Hill, 1983.

Stark, Jeffrey B. Analysis of Budget Behavior for the U.S. Coast Guard. Master's Thesis, Naval Postgraduate School, Monterey, California, December 1985.

Tucker, H.J. "Incremental Budgeting: Myth or Model?" Western Political Quarterly, September 1982, pp. 333-335.

Wildavsky, Aaron. The Politics of the Budgetary Process. 4th ed. Boston: Little, Brown and Company, 1984.

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