ON THE CYCLICAL BIAS IN GOVERNMENT SPENDING

by
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ABSTRACT

First, this paper reports findings that the prolonged rise in the spending/output ratio in OECD countries is related to a cyclical bias: countercyclical spending in contractions and procyclical spending in expansions. Then, after briefly discussing the policy implications of the cyclical bias, the paper adresses the recent experience of Israel under the Budget Deficit Reduction Law.

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1. Introduction

Since the 1970s the OECD countries have witnessed a persistent increase in government spending/output ratios. On average, this ratio rose from 27.4 percent of GDP in 1974 to 38.5 percent of GDP in 1995, i.e., by 11.1 percentage points. Revenues increased from 26.7 to 33.8 percent of GDP, i.e., by 7.1 percentage points, which implies an increase in government deficit. The partial adjustment of revenues suggests that the increasing share of government spending is not due only to a change in the demand for public goods, but it also reflects a political bias, as extensively documented by the growing literature on fiscal institutions.

Was this increase a reflection of asymmetric fiscal behavior in expansions and contractions? First, this paper presents empirical results reported in Hercowitz and Strawczynski (1998) about this issue using data from the OECD countries for the period 1975-1995. The main finding is that the persistent increase in the government spending/output ratio was linked to a cyclical bias; a stylized description is that this ratio went up during contractions and then it remained at its new high level during expansions. Second, following a brief discussion of the policy implications of the cyclical bias we addres the recent experience in Israel, and the possibility of a cyclical bias in the framework of the Budget Deficit Reduction Law.

The paper is organized as follows: Sections 2 and 3, based on Hercowitz and Strawczynski (1998), present the procedure for estimating the cyclical bias and the empirical results. Section 4 briefly discusses policy implications of the cyclical bias and focuses on the Budget Deficit Reduction Law in Israel. Finally, Section 5 summarizes and concludes.

2. Methodology

The focus of the analysis is on the changes in the government spending/output ratio over time. The basic equation is:

(1) $dg_t - dy_t = \alpha_0 + \alpha_1(dy_t - d\bar{y})^{(+)} + \alpha_2(dy_t - d\bar{y})^{(-)}$

where g is total government spending, y is GDP, dx represents the annual rate of change in variable x, $d\bar{y}$ is the average growth rate of GDP, $(dy\text{-}d\bar{y})^{(+)}$ and $(dy\text{-}d\bar{y})^{(-)}$ are positive and negative deviations of output growth from average growth, α_1 and α_2 represent the response of the g/y ratio in expansions and recessions, and α_0 is a constant term, unrelated to the cycle. In what follows we refer to a negative deviation as a recession and to a positive one as an expansion.

Note that when $\alpha_1 = \alpha_2 = 0$, the g/y ratio is unrelated to the business cycle. If, for example, α_1 , $\alpha_2 > 0$, g/y increases in expansions and decreases in recessions. The opposite is true for α_1 , $\alpha_2 < 0$. Regardless of the sign of these coefficients, so long as $\alpha_1 = \alpha_2$, the cyclical response is symmetric and unrelated to the cycle.

A positive cyclical bias is generated when $\alpha_1 + \alpha_2 > 0$. This is the case where the cycle is accompanied by an increasing spending/output ratio. Note that a cycle-related bias could be associated with many different combinations of spending behavior in recessions and expansions. For example, a bias in a country where g/y is procyclical -both α_1 and α_2 are positive- may be identical to the bias in another country where g/y is countercyclical -both α_1 and α_2 are negative. An increasing spending/output ratio that is unrelated to the cycle is indicated by $\alpha_0 > 0$. Equation (1) is generalized by including lags:

$$\text{(2)} \quad dg_t - dy_t = \alpha_0 + \alpha_1(dy_t - d\bar{y})^{(+)} + \alpha_2(dy_t - d\bar{y})^{(-)} + \alpha_3(dy_{t-1} - d\bar{y})^{(+)} + \alpha_4(dy_{t-1} - d\bar{y})^{(-)}$$

This formulation enriches the cyclical behavior and its link with the generation of the bias - which is now defined as $(\alpha_1 + \alpha_3) - (\alpha_2 + \alpha_4) > 0$. The coefficients on the lagged variables are also of particular interest given a possible lag in tax collection.

From an econometric point of view there maybe a problem of simultaneity, since changes in g may cause changes in y. Note, however, that this possible simultaneity affects the individual coefficients but does not affect the estimate of the cyclical bias.[1]

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[1] Still, a Keynesian analysis would imply that the effect of g on y is stronger during recessions than in expansions. If this is the case, after controlling for this effect output in contractions should be lower than the one actually measured, and consequently the cyclical bias higher; i.e., the estimate of the cyclical bias is a lower bound.

3. OECD Countries

3.1 Data

The panel data set used to estimate equation 2 is composed by the OECD countries except Iceland, Luxemburg and Mexico (22 countries). The data, from the Government and Financial Statistics (GFS) are annual over the sample 1975-1995. The variable g is matched to consolidated central government spending (including interest payments) and y is GDP. Both variables are obtained by deflating the nominal values by the GDP deflator. The alternative counterpart of g is spending in constant prices- as it is usually measured. The problem with the usual measure is that changes in public sector wages are not captured because they are considered price changes, while changes of this type is one of the mechanisms for increasing spending.

Spending of the consolidated central government includes central government and social security funds, but it excludes regional governments. In terms of composition it includes four categories: I) expenses on goods and services, ii) transfers and subsidies, iii) capital expenditure, and iv) interest payments.

3.2 Estimation results

3.2.1 Total government expenditure

The panel estimation of equation (2) is carried out both with a common constant and allowing for idiosyncratic constants for each country (fixed effects). The data is unweighted. A seemingly unrelated regressions procedure is adopted, where the

covariance matrix across countries is estimated in a preliminary regression and then applied in a generalized least squares form. The estimation[2] applied to total government expenditure is reported in Table 1. All the regressions exclude observations affected by substantial changes in the method of accounting.[3]

The results show the following:

- The point estimates indicate the existence of a sizable cyclical spending bias. The difference of the sum of coefficients in booms and recessions is 1.495 using the common constant estimates, and 1.675 for the regression with fixed effects[4]. These estimates imply, for example, that following a four-year business cycle of a one percent amplitude, the spending/output ratio is higher by 1.5 percentage points than prior to the cycle.[5] (In what follows we refer only to the common constant estimates).

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[2] In order to confirm the robustness of the estimated equation we runned the same regression with dy appearing only in the left hand side (i.e., adding dy in both sides of equation 2); in this case the simultaneous coefficients become $1+\alpha_1$ and $1+\alpha_2$. Except for minor differences, we obtained the same results.

[3] The excluded observations are Japan 1991 and Greece 1991. There were additional minor changes (8 in total) which once excluded we got very minor changes in the results of the regressions (for space considerations we do not report these regressions).

[4] By performing Wald tests it is found that the bias is significant at 1 percent level.

[5] In the first year 1 percent positive (negative) deviation from normal growth, normal growth in the second, 1 percent negative (positive) deviation in the third and normal growth in the fourth. Since the standard deviation is 2.3, the amplitude of the cycle is 3.4. This implies that the ratio goes up by 5 percent (3.4*1.5=5.1); since in 1975 g/y was in average 0.3, it goes up by 1.5 percents of GDP. In 20 years, the accumulated increase of 5 such cycles is aproximately 7.5 percents of GDP.

• The positive bias is due to a highly asymmetric cyclical pattern. The sum of the coefficients on recessions is -1.506, which implies that *g/y* is *counter-cyclical* in recessions. In contrast, the sum of the coefficients on expansions is -0.011, which is small and close to zero. Correspondingly, g/y remains roughly constant after an expansion. The positive spending bias is generated by a ratchet-type effect: an increasing spending/output ratio in recessions and a roughly constant ratio in

• Given that the sum of coefficients in recesions is lower than -1, not only g/y is counter-cyclical in recessions: also *g* is. For comparison, if this sum was -1, *g* would be neutral, i.e., would grow at the normal rate, and the counter-cyclicality of *g/y* would be due exclusively to the lower-than-normal growth of the denominator. The constant spending/output ratio during expansion implies that *g* increases by the higher than normal growth of output, i.e., *g* is procyclical in expansions. A possible explanation of this result is that as the tax revenues are high during expansions, they are used to increase spending at a rate higher than normal GDP growth.

• Timing is also asymmetric. The countercyclical policy during recessions is mostly simultaneous: a coefficient of -1.261, while the lagged coefficient,-0.245, is much smaller. The negative contemporaneous coefficient on expansions implies that *g/y* tends to decline contemperaneously in an expansion year[6]. With a lag of one year, however, *g*

[6] The fact that the coefficient of expansions is -0.386, i.e., it is higher than -1, indicates that spending growth is higher than normal. Hence, the contemporaneous decline in *g/y* in expansion years is due to a higher-than-normal increase in the numerator and a still higher increase in the denominator.

increases by an additional fraction 0.375 (of the previous positive deviation from average increase in output), approximately restoring the g/y ratio to the level prior to the expansion. This result maybe influenced by the timing of collecting tax revenues (see Section 3.2.4 where the response of tax revenues to the cycles is analyzed).

To obtain further insights into the cyclical bias we proceed as follows. First, interest payments, which react to past events, and thus cannot be considered as a fiscal policy response, are excluded from the spending variable in order to check the robustness of the results. Second, the secular increase in unemployment benefits, which contributes to generating the spending bias, is controlled for. Third, we perform a regression for tax revenues. Fourth, we control for the political structure in order to learn on tthe interaction between political strength\weakness and the cyclical bias.[7]

3.2.2 Total expenditure excluding interest payments

The results, presented in Table 2, are similar to those in Table 1. The difference is quantitatively small. For expansions the new sum of coefficients is equal to 0.012, compared to -0.011 for total expenditure: i.e., during expansions the exclusion of interest payments increases slightly the pro-cyclicality of spending. For contractions the sum of coefficients is 1.378, i.e., slightly lower than in the case of total expenditure.

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[7] It is interesting to analyze how do the different components of expenditure (goods and services, transfers and capital expenses) react to cycles. This analysis, presented in Hercowitz and Strawczynski (1998), shows that the cyclical bias acts through the three components.

3.2.3 The rising trend of unemployment

It is well-known that unemployment in OECD counties during the period under study is characterized by a rising trend[8]. Consequently, part of the increase in the spending/output ratio is related, at least partially, to unemployment. Table 3 shows the results from a regression that includes as an additional variable the change in a long-run trend in unemployment, estimated as a third degree polynomial of time.

The trend in unemployment contributes substantially to the spending/output ratio, but the constant turns now negative and significant. From the beginning to the end of the sample these two factors cancel out quantitatively. Hence, given that the coefficients on the cyclical variables remain similar to those in Tables 1 and 2, the results in Table 3 imply that the cyclical bias is the only source of the increase in the spending/output ratio during the sample period.

The sum of the coefficients for contraction periods is -1.441, i.e., lower in absolute value than in previous cases, and hence spending policy in contractions is closer to be neutral. The sum of the coefficients for expansions is still low (-0.099).

3.2.4 Tax revenues

Table 4 shows the results from a regression for tax revenues with the same structure as the one for spending.

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[8] Regressing unemployment on a linear trend shows a positive and very significant relationship: a coefficient of 0.26 with a t-statistic of 16.6.

From the results we stress:

• the sum of coefficients in expansions is 0.223 and in recessions -0.085. These results imply changes in the tax rate and/or an elasticity higher than one.

• the lagged response of tax revenues in expansion is high and significant. This finding may explain the strong lagged response of spending in expansions.

• the constant term is positive and significant, which implies that the persistent increase in the tax rate is not related to the cycle.

3.2.5 Political Variables

It is interesting to see whether the cyclical bias is stronger in countries characterized by weaker governments. For this purpose we use a measure of government strength along the lines of Roubini and Sachs (1985), who define numbers between 0 and 3 according to the government structure; in the two extremes, 0 represents a one-party majority parliamentary government and 3 represents a minority parliamentary government. We use actual estimates of the political variable (POL) from de Haan, Sturm and Beekhuis (1997), who apply the same method for all the countries in our sample (except Turkey) during the period 1979-1995. Since there is no consensus on the right value that should be assigned to the different political structures we built a dummy variable which takes the value of 1 when the political index is higher than average (across countries and time) and 0 when it is lower than average. Besides the advantage of minimizing possible mistakes in constructing the right index, this procedure has the advantage of being easy to

interpret; the dummy variable coefficient shows the addition to the cyclical coefficients due to weaker governments. The results are exposed in Table 5.

The results show that there is a high and significant counter-cyclical response in recessions for weaker governments, which is partially mitigated by a less pro-cyclical policy in expansions. For the common constant case, weaker governments add to the normal bias of 0.93 an additional bias of 0.25, which is not significant according to the Wald test. Hence, similarly to other papers in this literature[9], we do not find a clear cut conclusion concerning the relationship between political variables and government spending.[10]

4. Policy Implications

4.1 Discussion

The rising trend of the spending output/ratio may reflect both an increase in the demand for government intervention and a political spending bias. According to Barro's (1979) tax smoothing hypothesis, if the entire increase of g/y over the period is permanent and anticipated, a central planner should raise the tax rate at the beginning of the period; if the increases in g/y are permanent but not anticipated, the central planner should raise

[9] See f.e. de Haan, Sturm and Beekhuis (1997).

[10] Another interesting extension is to test whether there was a reversal of the cyclical bias during the 1990's. We found there was no reversal in the cyclical pattern of spending, while there was a significant drop in the constant term, i.e., not related to the cycle (see Hercowitz and Strawczynski, 1998).

the tax rate one-to-one with increasing spending, in contradiction with the persistent deficits during the period. This evidence suggests that political pressures tended to increase expenditure in an unplanned manner, in contrast to what one may expect from a central planner optimization.

The traditional explanation for the increase in spending is the 'common pool' problem (see Von Hagen and Harden, 1996): the different ministers (or sectors) consider the utility of expenditure for their own ministry, while they underestimate the negative externality related to the rise in total spending. This explanation suits the cyclical pattern we found in the paper: in expansions, the availability of revenues makes easy for the different ministers to demand (and get) funds in order to increase their ministry spending; in contractions, however, it is difficult both politically and socially to reduce expenditure from it normal growth, and hence the spending/output ratio increases.[11] Note, however, that this mechanism is not necessarily captured by the traditional tests performed in the literature, which check the spending bias as a function of the political strength of governments; as reported in section 3.2.5, this process takes place independently of the type of government.

What is the implication of these results for budget rules? First, note that budget rules are not relevant for the part of spending related to the increase in the demand for public spending. Rules are relevant in order to deal with political pressures, since their goal is to enhance budgetary discipline. However, balanced budget rules do not constitute the

[11] Clearly, this mechanism is not sustainable in the long run.

adequate tool to deal with a political bias of the pattern described above for the OECD. Given that during expansions the spending/output ratio remains approximately constant, it complies with the balanced-budget rule. Hence, the rule does not constitute a constraint during expansions. The observed countercyclical spending during recessions --because of the impossibility of reducing spending-- suggests that higher taxes are required to balance the budget. The increase of the tax rate implies higher sources to be used in future expansions, and thus, an exacerbation of the political spending bias.[12]

The policy implications of these considerations are that in order to avoid a political spending bias the relevant rules should be *spending* rules; or a cyclically adjusted budget rule. This channel is still unexplored in the literature of fiscal institutions.

4.2. Cyclical bias in Israel and The Budget Deficit Reduction Law

The historical spending pattern in Israel is different from that in the OECD countries, mainly because of developments in defence spending (Diagram 1). The ratio of defence expenditure/GNP rised sharply until the 1970s and declined consistently since then. This development was accompanied by a decline in the shares of public deficit, public debt and interest payments.

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[12] A simulation of the bias assuming the estimated behavioral coefficients and that revenues are adjusted in recessions (in order to comply with the law) shows that government spending rises by an additional 2 percent of GDP (compared to the actual increase).

Diagrams 2 and 3 show the relationship between changes in spending and in GDP during expansions and recessions[13], where expansions (recessions) are defined as years with growth above (below) average growth in the period 1960-1997. From the diagrams it is clear that during expansions there is a strong positive correlation (coefficient of 0.68) between the rate of increase in GDP and in spending, while during recesions the correlation is low (coefficient of 0.19).

From a policy point of view, Israel constitutes an interesting case study because of the existence of the budget deficit reduction law. This law was implemented in 1992 with the goal of signaling to the economic agents that the high deficit needed to finance public spending in immigration from the former USSR is transitory, since the government is committed to a declining deficit during the following years. The performance of fiscal variables before and after the law is described in Table 6.

From this table the following pattern emerges:

• In 1994, a year characterized by a high growth rate of GDP and tax revenues (42.6 of GNP), the deficit was close to the target (2.4 percent of GDP compared to a target of 3.2); i.e., in a year of high tax revenues the budget deficit reduction law does not avoid an increase in expenditure (which occurred, as it is well-known, through an additional budget that included a substantial increase in public sector wages). Moreover, the increase in spending occured without a loss in credibility, given that in this same year actual deficit was actually lower than target.

[13] Excluding the effect of the Heath Law in 1995 (see Bank of Israel Report for that year).

• The increase in spending affected the deficit performance in the following years: in 1995, when there was a small deviation from target, and mainly in 1996 when actual deficit was higher than target by 2.2 percents of GDP.

• In 1997 both a rise in the tax rate (2.1 billon increase in statutory tax rates) and a reduction in spending in infrastructure (from 3.5 to 3.1 of GNP) were needed for the deficit to return to its declining path. This development occurred in an year of low growth; i.e., the increase in the tax rate and the decline in infrastructure investment were strongly procyclical.

This evidence suggests that a balanced budget law does not deal efficiently with a cyclical bias of the type analyzed in this paper. During expansions the different political groups of the ruling coalition and other lobbies exercise pressure on the government to assure for themselves part of the incoming tax revenues --or alternatively to achieve government commitments for the near future. These commitments imply a persistent increase in the size of government, which under a balanced budget law imply an increase in the tax rate in following recession years. Since during a recession it is difficult to reduce spending granted to the different sectors or interest groups, the most viable way to make a consolidation in order to return to the framework of the budget deficit reduction law is to raise taxes (or alternatively to cut infrastructure spending, which is not identified with a specific lobby). This policy implies negative effects on the supply side of the economy, and that in a future expansion the higher tax rate may back up a further increase in the public sector.

5. Summary and Conclusions

This paper reported results that the persistent increase of government spending in OECD countries in the 1975-1995 period is related to a cyclical bias: during recessions the spending/output ratio rises, and during expansions it remains at its higher level. This pattern works through all the main components of government spending and there is partial evidence that it is stronger in countries characterized by weaker political structures. The policy implications of our findings, discussed also in the context of Israel's Budget Deficit Reduction Law, is that balanced budget laws are not efficient in avoiding a cyclical bias in government spending. In order to deal with this type of bias other tools should be considered, like government spending rules or cyclically adjusted budget rules.

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Table 1: Total Government Expenditure

Dependent Variable: dg_t-dy_t

Adjusted Sample: 1976-1995 (standard errors in parantheses)

Variable	Common Constant	Fixed effects
Constant	0.000 (0.001)	-
$(dy_t - \overline{dy})^{(+)}$	-0.386 (0.064)	-0.337 (0.062)
$(dy_{t-1} - \overline{dy})^{(+)}$	0.375 (0.065)	0.416 (0.062)
$(dy_t - \overline{dy})^{(-)}$	-1.261 (0.055)	-1.316 (0.050)
$(dy_{t-1} - \overline{dy})^{(-)}$	-0.245 (0.051)	-0.280 (0.047)
R^2	0.14	0.15
D.W.	2.02	2.10

Observations: 20; Number of countries: 22

Total panel observations: 424

Table 2: Total Expenditure Excluding Interest Payments

Dependent Variable: dg_r_t-dy_t

Adjusted Sample: 1976-1995 (standard errors in parantheses)

Variable	Common Constant	Fixed effects
Constant	-0.004 (0.001)	-
$(dy_t - \overline{dy})^{(+)}$	-0.417 (0.068)	-0.357 (0.064)
$(dy_{t-1} - \overline{dy})^{(+)}$	0.429 (0.070)	0.476 (0.065)
$(dy_t - \overline{dy})^{(-)}$	-1.273 (0.058)	-1.326 (0.055)
$(dy_{t-1} - \overline{dy})^{(-)}$	-0.0145 (0.053)	-0.064 (0.044)
R^2	0.12	0.14
D.W.	2.04	2.09

Observations: 20; Number of countries: 22

Total panel observations: 419

Table 3: A Rising Trend in Unemployment

Dependent Variable: dg_t-dy_t

Adjusted Sample: 1976-1995 (standard errors in parantheses)

Variable	Common Constant	Fixed effects
Constant	-0.015 (0.001)	-
$(dy_t - \overline{dy})^{(+)}$	-0.425 (0.059)	-0.389 (0.055)
$(dy_{t-1} - \overline{dy})^{(+)}$	0.326 (0.060)	0.358 (0.057)
$(dy_t - \overline{dy})^{(-)}$	-1.293 (0.050)	-1.331 (0.045)
$(dy_{t-1} - \overline{dy})^{(-)}$	-0.148 (0.047)	-0.183 (0.042)
d (unemployment trend)	0.053 (0.004)	0.054 (0.003)
R^2	0.17	0.17
D.W.	2.10	2.23

Observations: 20; Number of countries: 22

Total panel observations: 424

Table 4: Total Tax Revenue

Dependent Variable: $dtax_t$-dy_t

Adjusted Sample: 1976-1995 (standard errors in parantheses)

Variable	Common Constant	Fixed effects
Constant	0.005 (0.001)	-
$(dy_t - \overline{dy})^{(+)}$	-0.364 (0.055)	-0.345 (0.053)
$(dy_{t-1} - \overline{dy})^{(+)}$	0.587 (0.055)	0.630 (0.052)
$(dy_t - \overline{dy})^{(-)}$	-0.240 (0.055)	-0.298 (0.051)
$(dy_{t-1} - \overline{dy})^{(+)}$	0.155 (0.045)	0.127 (0.042)
R^2	0.05	0.07
D.W.	1.83	1.88

Observations: 20; Number of countries: 22

Total panel observations: 424

Table 5: Political Variables

Dependent Variable: dg_t-dy_t

Adjusted Sample: 1979-1995 (standard errors in parantheses)

Variable	Common Constant
Constant	-0.003 (0.001)
POL	-0.002 (0.002)
$(dy_t - \overline{dy})^{(+)}$	-0.310 (0.061)
$(dy_t - 1 - \overline{dy})^{(+)}$	0.334 (0.062)
$(dy_t - \overline{dy})^{(-)}$	-1.391 (0.063)
$(dy_{t-1} - \overline{dy})^{(-)}$	0.112 (0.061)
$POL * (dy_t - \overline{dy})^{(+)}$	-0.288 (0.095)
$POL * (dy_{t-1} - \overline{dy})^{(+)}$	-0.160 (0.092)
$POL * (dy_t - \overline{dy})^{(-)}$	-0.382 (0.086)
$POL * (dy_{t-1} - \overline{dy})^{(-)}$	-0.504 (0.091)
R^2	0.22
D.W.	2.06
Wald test for bias increase	0.0539 (0.817)

Observations: 17; Number of countries: 21

Total panel observations: 345

Table 6 - Fiscal performance during the Balanced Budget deficit law

Central Government (percent of GDP)

	1990	1991	1992	1993	1994	1995	1996	1997
target deficit			6.2	3.2	3.0	2.75	2.5	2.8 (overall deficit)
actual deficit			4.9	2.0	2.4	3.2	4.7	2.8

Public Sector (percent of GNP)

	1990	1991	1992	1993	1994	1995	1996	1997
domestic deficit	7.5	7.7	6.4	3.8	2.3	4.5	5.3	4.0
overall deficit	4.6	4.5	3.2	2.1	1.1	3.1	4.2	2.5
tax rate[14]	40.9	40.3	41.2	41.4	42.6	41.8	40.7	42.1
statutory changes (nis billions)	0.42	3.6	1.2	-0.9	-1.5	-2.4	-0.2	2.1
investment in infrastructure	2.9	3.5	3.7	3.9	3.7	3.7	3.5	3.1
growth rate of GDP (annual)	6	5.5	6.6	3.4	6.8	7.1	4.5	1.9

[14] Includes property and health taxes (between 1990 and 1994 through payments to health funds).

Diagram 1: Public Expenditure in Israel
(percent of GNP)

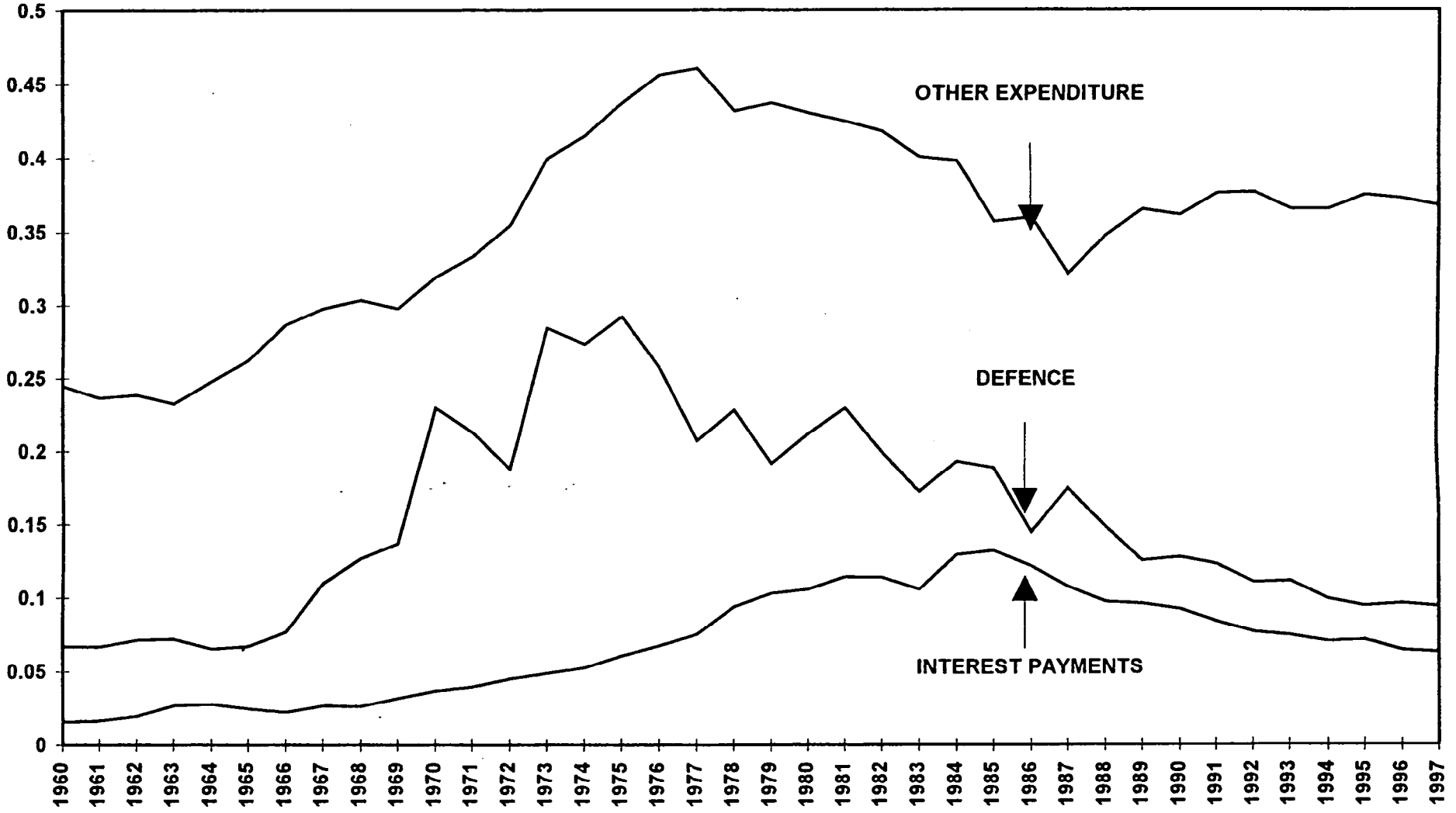
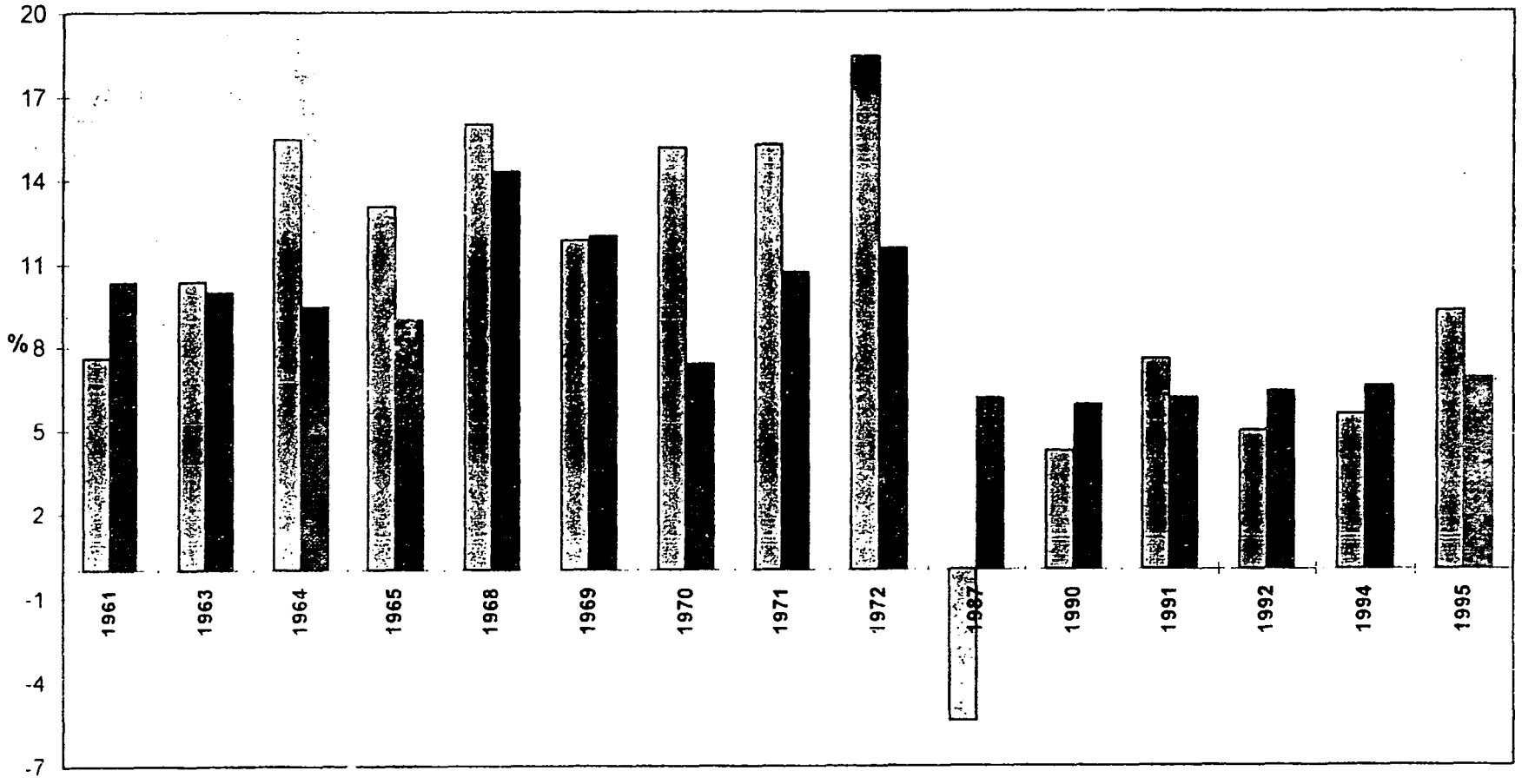


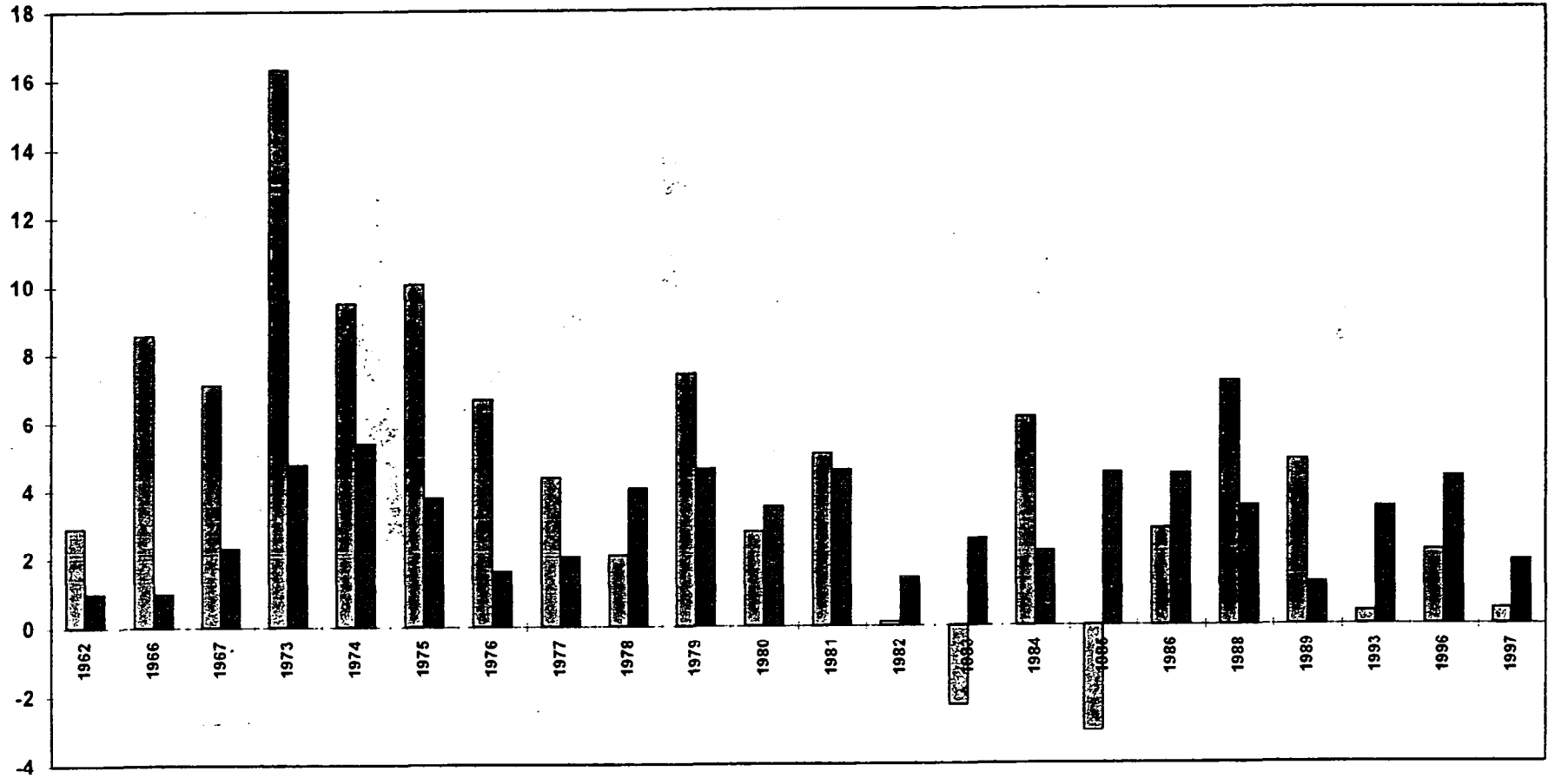
Diagram 2: dg and dy
in Israel
EXPANSIONS



dg - rate of change in total expenditure (excluding defence), deflated by GDP prices.

dy - rate of change of GDP in constant prices

Diagram 3 : dg and dy
in Israel
RECESSIONS



dg - rate of change in total expenditure (excluding defence), deflated by GDP prices.
dy - rate of change of GDP in constant prices.

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