

## **On the Cyclicalities of Irish Fiscal Policy**

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*Abstract:* In this paper, we tackle the important issue of cyclicalities in the behaviour of Irish fiscal policy. We first review arguments in favour of the optimality of countercyclical fiscal policy. Next we outline a political economy model that explains procyclical fiscal policy as the rational, albeit suboptimal, outcome of an allocation game among competing fiscal groups. In our empirical work, we find the evidence generally rejects countercyclicalities in Irish fiscal policy. We conclude by briefly discussing some institutional reforms that may improve the operation of fiscal policy over the economic cycle.

### I INTRODUCTION

The conduct of fiscal policy in Ireland has attracted much domestic and international interest. Recent research has focused on the remarkable success of the structural fiscal reform that was initiated in 1987 (see Giavazzi and Pagano, 1990; Alesina and Perotti 1995, 1996a; and the April 1992 special issue of *The Economic and Social Review*). However, even if the non-cyclical component of the budget deficit has declined, lately there has been some concern that the fiscal policy stance in the 1990s has been inappropriately procyclical (see McDowell, 1996). This paper addresses the issue of cyclicalities in Irish fiscal policy.<sup>1</sup>

As is discussed further in Section II below, optimal fiscal policy is countercyclical in nature. Suboptimal fiscal policy imposes substantial, and

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1. Norton (1975), Bacon *et al.* (1982) and Bradley *et al.* (1985) have highlighted procyclicalities in the budget deficit during the 1960s and 1970s, suggesting that this problem is not just a recent phenomenon. The recent ESRI medium term forecast notes the procyclical behaviour of the exchequer borrowing requirement.

avoidable, costs on the domestic economy. Moreover, these costs are likely to be significantly magnified if Ireland becomes a member of a future European Monetary Union: with the loss of monetary policy as a stabilisation tool, it becomes all the more important that fiscal policy acts as a stabilising force by moving countercyclically (see also Lane, 1997).<sup>2</sup> It is important, therefore, to understand the cyclical determinants of fiscal policy in Ireland: if fiscal policy has indeed been procyclical, it may be necessary to consider institutional reforms of the fiscal policy process in order to achieve a superior outcome.

At this point, in the interests of being absolutely clear about the scope of this paper, it is worth entering a *caveat*. As my focus is on the cyclical properties of fiscal policy, I do not address the “levels” characteristics of Irish fiscal policy such as the appropriate average shares for government spending and revenue in GDP over the long run. This is in line with standard procedure in macroeconomic research, which is to separately analyse the cyclical and long-run behaviour of the economy and various subcomponents of macroeconomic activity (i.e., macroeconomics is split between business cycle research and the study of economic growth). As such, any criticisms in this paper about the suboptimal nature of Irish fiscal policy over the economic cycle is not to deny the real achievement of the 1987 programme in successfully reducing the *structural* levels of government spending and the budget deficit.

The plan of the paper is as follows. In Section II, I review theoretical arguments in favour of countercyclical fiscal policy. I also describe a new political economy literature that can generate procyclicality in fiscal policy as the rational outcome of an allocation game among competing fiscal groups. In Section III, I consider some basic empirical evidence on the behaviour of Irish fiscal policy over the economic cycle. I find that the hypothesis of countercyclical fiscal policy can be generally rejected for recent Irish data. In Section IV, I conclude by discussing a potential role for institutional reform in improving the conduct of fiscal policy in Ireland.

## II FISCAL POLICY OVER THE ECONOMIC CYCLE

According to the neo-classical theory of fiscal policy, the ratio of government spending to GDP should behave countercyclically. One reason is that, if agents have concave preferences over the level of government spending, they will prefer a smooth absolute level of government spending. Accordingly,

2. The Stability Pact, if credibly implemented, would place an upper bound on national budget deficits. However, this need not rule out a role for countercyclical fiscal policy, so long as the average deficit lay strictly within this upper bound. In bad times, the deficit could then be widened without breaching this upper bound.

during booms, government spending should decline as a proportion of GDP and, conversely, increase during recessions. This is just the corollary of the consumption-smoothing hypothesis: the “government spending function” should take as its argument permanent income, not current income.

Second, if government spending is perceived as capable of stabilising output, a government that cares about smoothing the path of production will want to operate a countercyclical fiscal policy. The idea here would be that a negative shock to demand for domestic goods can be partially offset by an increase in government demand. This could take the form of government purchases from the domestic private sector or, more directly, an increase in public sector activity. Symmetrically, the government will want to contract its activities during a boom period, in order to avoid an overheating of the domestic economy. Although Ireland has a large tradables sector that is only trivially affected by domestic demand conditions, a substantial non-traded sector also exists that is exclusively reliant on the level of domestic aggregate demand and hence can be stabilised by countercyclical fiscal policy.

Third, the social insurance component of government expenditure is naturally countercyclical. Unemployment benefits and similar programmes are designed to offset fluctuations in income and so should be negatively correlated with the economic cycle. This holds so long as these schemes are interpreted as having a primarily insurance function.<sup>3</sup>

Fourth, in a world of uncertainty, there exists a prudential motive to run a countercyclical fiscal policy. Any given change in the level of economic activity likely has both a permanent and a temporary component. Typically, there will be uncertainty as to how to decompose an output change into its permanent and temporary components and this uncertainty is only slowly resolved over a period of time. Recognising this, a prudent government that wants to maintain a constant ratio of government spending to *permanent* GDP, will be slow to increase spending during periods of expansion and to cut spending during periods of recession. The uncertainty surrounding the measurement of GDP and GNP in Ireland, due to the distortions of transfer pricing by multinational corporations with Irish operations, provides another motive for the government to act cautiously in adjusting fiscal policy.

As Barro (1979) points out, the distortionary costs of taxation, coupled with a countercyclical programme for government spending as a ratio of GDP, generates “tax-smoothing” as the optimal fiscal policy. That is to say, a constant tax rate is chosen, which avoids the intertemporal distortion that

3. If, conversely, these schemes are operated mostly for redistributive purposes, the cyclical behaviour of these payments depends on the nature of the “redistribution game” played by society. For instance, social security expenditure will rise during a boom if the fall in employment is more than offset by increases in benefit rates.

would arise if tax rates were to change over the economic cycle, so that the budget is on average balanced over the economic cycle. As a result, tax revenues as a ratio to GDP are acyclical: with a constant tax rate, revenues rise sharply during a boom and decline during a recession. It also follows that the budget deficit behaves countercyclically, given the countercyclical path for government spending and the acyclicity of the tax to GDP ratio.

Accordingly, a fiscal policy that attempts to stabilise the ratio of the budget deficit to GDP is highly likely to be suboptimal. With a constant tax rate, a constant deficit to GDP ratio implies also a constant ratio of government spending to GDP over the economic cycle. In other words, the level of government spending actually becomes procyclical, as it expands and contracts at the same rate as the level of overall economic activity. This appears to correspond to the actual fiscal policy currently operated in Ireland.

What can explain such a procyclical stance in fiscal policy? One approach is to explain procyclicality in terms of "irrational exuberance": politicians, and society in general, may mistakenly perceive all improvements in output as fully permanent and hence opt to expand government spending in line with the rate of growth of the overall economy. However, given the significant benefits to a countercyclical fiscal policy (as outlined above), this explanation relies heavily on self-defeating irrationality.

A more satisfactory approach is to attempt to explain procyclicality in fiscal policy as the rational, albeit suboptimal, outcome of a competitive political process. In recent literature, several authors have built theoretical models in which such a result can be generated. For instance, Lane and Tornell (1996, 1997) and Tornell and Lane (1997) consider a set-up in which multiple political groups have influence over the determination of government spending and act non-co-operatively. In the absence of sufficient institutional safeguards, these groups regard tax revenues as a "common pool", in the sense that each group perceives that the cost of withdrawing resources is jointly shared and so is borne only fractionally by itself. Moreover, in the event of a positive shock to output, and hence tax revenues, groups will increase their rate of appropriation. This is because the payoff to acting prudently is low: each group knows that if it does not increase its appropriation during good times, the result is not that the government runs a budget surplus but that the other groups can increase their appropriation rate by an even greater amount. The net effect is that fiscal policy moves procyclically, with groups grabbing resources opportunistically.<sup>4</sup> Clearly, this

4. A related model has been proposed by Svensson (1996). Rather than treat fiscal groups as behaving non-co-operatively, Svensson explores a collusive equilibrium and obtains similar findings. As such, the result appears robust to different assumptions about the strategic interaction among the multiple fiscal groups.

outcome is collectively suboptimal, as is typically the case in a common pool problem. (Other examples of common pools include fishing waters, the ozone layer and public road networks and these are subject to similar over-exploitation problems.)

The notion of powerful fiscal groups is open to a number of interpretations. On a narrow basis, it can refer to individual parties in a coalition government or to rival factions or individual government ministers within even a single party government (see Velasco, 1994). A broader interpretation is that it also includes interest groups, state-owned enterprises, labour unions and business organisations in corporatist societies that form a “social partnership” with the official government (see Olson, 1982). At still another level, Easterly and Levine (1997) have explored the role of socio-ethnic fragmentation on government performance in sub-Saharan Africa.

Some features of the Irish politico-economic system suggest that this model can be helpful in understanding fiscal policy determination in Ireland. Such elements include: the tendency towards coalition governments under the PR-STV electoral system, even among parties with significantly different ideologies over the role of government; the tradition of regional balance in the allocation of cabinet positions; the strength of public sector unions; and the corporatist system of tripartite agreements between the government, labour unions and employer federations. Each of these features has the characteristic of establishing multiple groups with a claim to exercising powerful influence over the setting of Irish fiscal policy.

Finally, it has been suggested that, in order to achieve the first-best equilibrium in which an optimal countercyclical fiscal policy is attained, institutions can be designed to place limits on the ability of such groups to freely influence fiscal policy. I return to this issue in Section IV of this paper.

### III EMPIRICAL EVIDENCE

In this section, I consider some basic empirical evidence on the behaviour of Irish fiscal policy over the economic cycle. The purpose is to evaluate whether there is support in the data for the notion that fiscal policy in Ireland has indeed deviated from an optimum countercyclical pattern.

As an illustration, we present data in Table 1 on the general government deficit and the GDP growth rate in recent years. From the table, the stability of the deficit to GDP ratio is remarkable, remaining in the [-2.3,-2.4] per cent range each year over 1990-95. In contrast, the GDP growth rate has been reasonably volatile over this period, with a slowdown in 1991 and an acceleration in the growth rate since 1994. What the data in Table 1 indicate is that the government budget deficit has been insensitive to the stage of the

economic cycle. This is at odds with the typical behaviour of OECD economies: Gavin and Perotti (1996) find in a panel of OECD countries that the fiscal deficit is significantly countercyclical, as predicted by economic theory. Moreover, the stability of the unadjusted headline fiscal deficit is masking a deterioration in the primary budget position (i.e., the deficit net of interest payments), given the decline in debt servicing requirements during this period. It should additionally be recognised that if the unadjusted deficit is not varying with fluctuations in GDP then the structural (i.e., cyclically adjusted) fiscal deficit is behaving procyclically.

Table 1: *Deficit Targeting, 1990-96*

<i>Year</i>	<i>Deficit</i>	<i>GDP Growth</i>
1990	-2.3	7.8
1991	-2.3	2.2
1992	-2.4	3.9
1993	-2.4	3.1
1994	-2.3	6.4
1995	-2.4	7.7
1996	-2.7	6.0

*Notes:* Deficit is general government deficit as a ratio of GDP. GDP growth is in constant prices. 1996 values are estimates.

*Source:* OECD *Main Economic Outlook*, June 1996.

We turn now to a more systematic analysis of the behaviour of government spending. We consider a regression specification of the form<sup>5</sup>

$$Dx_t = \alpha + \beta * CYC_t + \gamma * x_{t-1} + \phi * R_t + e_t$$

where  $x_t$  is the fiscal policy variable of interest (as a ratio to GDP),  $Dx_t$  is the first difference of the variable,  $CYC_t$  is the measure of the economic cycle,  $R_t$  is a dummy variable and  $e_t$  is an error term. The dummy variable  $R_t$  takes the value 1 in each year up to 1986 and the value 0 from 1987 to the end of the sample period. This is intended to capture the once-off step adjustment in fiscal policy that took place at the beginning of 1987 in Ireland. This adjustment can be interpreted as structurally required for long-term sustainability reasons and hence is orthogonal to the cyclical factors we are addressing in this paper.<sup>6</sup>

5. This empirical approach is also followed by Bayoumi and Eichengreen (1995) and Gavin and Perotti (1996) in their studies of cyclicity in fiscal policy in US states and in Latin America and the OECD respectively.

6. See Bertola and Drazen (1993). As discussed by Honohan (1992), the exact timing of the fiscal structural adjustment in Ireland is hard to pin down. We select 1987 as the most appropriate break-point as it was the year that the socio-political consensus in favour of reform was robustly established.

Omitting this dummy variable would bias the results as the data would be dominated by the discrete permanent step adjustment initiated in 1987, which is correlated with the improvement in the rate of economic growth. The lagged level of  $x_t$  is included in order to allow for long-term mean reversion in the fiscal policy variable, which is again required for long-term sustainability. The role of this variable is to incorporate the long-run restriction imposed by the government's intertemporal budget constraint that fiscal policy variables are not allowed to drift without bound. Estimation is by ordinary least squares.

We measure the economic cycle as the growth rate of actual GDP in excess of the growth rate of potential GDP (PGDP)

$$CYC_t = \log(GDP_t / GDP_{t-1}) - \log(PGDP_t / PGDP_{t-1}).$$

This is a useful measure as the OECD publishes estimates of potential GDP, which are known to the government and other participants in the fiscal process.<sup>7</sup> Growth in excess of the expansion in potential GDP is therefore predicted by the OECD to be temporary in nature. Under the hypothesis of countercyclical fiscal policy, we predict  $\beta < 0$ .

A number of different measures of fiscal policy are examined. Our focus is primarily on measures of government spending, as it is with respect to government expenditure that the differences between optimal and non-optimal fiscal policy are starkest. With respect to government revenue, the "tax-smoothing" hypothesis predicts a constant tax rate, and hence procyclical tax revenues. However, non-optimal fiscal policy may also generate a constant tax rate: the revenue-maximising tax rate may be a constant or the adjustment costs in varying the tax rate may be prohibitive. With respect to the budget deficit, the measurement problems are severe: multiple definitions exist (in the national accounts and by the standards of international organisations), the distinction between current and capital budgets may be arbitrary, creative accounting is frequently exercised (e.g., shifting the recording of revenues or expenditures between adjacent fiscal years) and

7. A data limitation is that the OECD series on potential output begins only in 1978 for Ireland. Kenny (1996) discusses different approaches to measuring the cyclical component in Irish output. The OECD measure is attractive because it is contemporaneously and publicly available. The OECD calculates potential output using a production function approach, taking into account available quantities of capital and labour, the structural rate of unemployment and the rate of technical progress (see Giorno *et al.* (1995)). Alternative measures that rely on statistical filtering techniques, such as the Hodrick-Prescott filter, use data from periods  $t+i$  to calculate the cyclical component in period  $t$  and so are only ex-post measures of the cycle. As a practical matter, the correlations between the cyclical measures we use and the Hodrick-Prescott measure are over 0.95 and so the precise choice of cyclical indicator is unlikely to be important. Using the change in the unemployment rate as the cyclical indicator gave similar results.

there are subtle problems of inflation adjustment in the real burden of nominal public debt. These problems notwithstanding, we examine tax revenues and the budget deficits in subsequent tables but in Table 2, we initially concentrate on government spending.

Table 2: *Fiscal Policy and the Economic Cycle I*

	<i>C</i>	<i>CYC</i>	<i>LAG</i>	<i>DUM</i>	<i>R</i> <sup>2</sup>	<i>BG-LM</i>	<i>N</i>	<i>Period</i>
(1) GNEXPY	0.168 (.058) [.015]	-0.35 (.25) [.191]	-0.44 (.15) [.013]	0.037 (.015) [.031]	0.48	0.44	15	1980-94
(2) GEXPY	0.181 (.057) [.009]	-0.271 (.25) [.3]	-0.421 (.127) [.007]	0.04 (.013) [.0096]	0.55	0.24	15	1980-94
(3) EGT	0.018 (.016) [.305]	-0.031 (.046) [.512]	-0.108 (.092) [.26]	0.005 (.016) [.03]	0.47	0.79	16	1979-94
(4) SSPGY	0.023 (.017) [.2]	-0.227 (.097) [.037]	-0.141 (.103) [.199]	0.003 (.004) [.5]	0.45	0.61	16	1979-94
(5) IGY	0.007 (.005) [.23]	-0.042 (.071) [.56]	-0.3 (.21) [.17]	0.006 (.006) [.32]	-0.019	0.02	16	1979-94
(6) CGWY	0.052 (.013) [.002]	-0.078 (.044) [.102]	-0.48 (.116) [.002]	0.007 (.002) [.007]	0.65	0.72	16	1979-94
(7) CGNWY	0.041 (.01) [.0012]	-0.055 (.035) [.136]	-0.66 (.15) [.002]	0.007 (.002) [.002]	0.65	0.04	16	1979-94

*Notes:* Standard errors in parentheses; p-values in square brackets. BG-LM is p-value from Breusch-Godfrey Lagrange Multiplier test for first-order serial correlation in the residuals. Dependent variables: GNEXPY is general government expenditure (net of interest payments) as a ratio of GDP. GEXPY is general government expenditure (inclusive of interest payments) as a ratio of GDP. EGT is ratio of government employment to total private employment. SSPGY is ratio of social security benefits (government account) to GDP. IGY is ratio of government investment to GDP. CGWY is ratio of government consumption (wages) to GDP; CGNWY is ratio of government consumption (excluding wages) to GDP. CYC is measure of economic cycle, as described in text. LAG is lagged level of dependent variable; DUM is dummy variable as described in text.

*Sources:* OECD *Main Economic Outlook*, June 1996, and OECD *Main Economic Outlook* data tape.



In row (1) of Table 2, we begin with the preferred measure, total government expenditure, net of interest payments on the public debt (GNEXPY).<sup>8</sup> This is the preferred measure as it corresponds to the notion of government spending in the standard dynamic government budget constraint.<sup>9</sup> The estimate for  $\beta$  is insignificantly different from zero, rejecting the hypothesis of countercyclicality in Irish fiscal policy. Rather, an estimated value of  $\beta$  insignificantly different from zero is consistent with a constant ratio of government spending to GDP over the economic cycle: this is consistent with a “constant deficits” rule for fiscal policy and implies procyclicality in the level of government spending.

To check the sensitivity of this result to the stripping out of interest payments from government expenditure, we examine government spending, inclusive of debt servicing, (GEXPY) in row (2) of Table 2. The estimated  $\beta$  is very similar to that in row (1) and again is insignificantly different from zero.

In rows (3)-(7), we examine various subcomponents of government expenditure. The purpose is to investigate whether the procyclical pattern in aggregate spending is common to all subcomponents or is rather driven by procyclicality in particular categories of public expenditure. In row (3), the fiscal policy variable is the ratio of government employment to total private employment (EGT). The most important component of government expenditure is the public sector wage bill. Given the difficulty of ever achieving reductions in public sector employment, the prudential motive to avoid increasing public sector employment during economic expansions should be quite strong. However, from the estimated value of  $\beta$  in row (3), there is again no evidence of countercyclicality in the ratio of government employment to total employment.

Social security payments (SSPGY) are considered in row (4). This component of public expenditure might be expected to be the most strongly countercyclical: for example, unemployment benefits will automatically rise during a recession as the jobless number increases. It turns out that social security payments have indeed a countercyclical element, with  $\beta=0$  rejected at a p-value of 0.037.

We next examine government investment (IGY). This should be the most acyclical component of fiscal policy: public investment projects are typically multi-year affairs, with long planning lead times and substantial completion

8. See “Sources and Methods: OECD Economic Outlook” (available at <http://www.oecd.org>) for details on the construction of the fiscal variables used in this paper.

9. If  $B_{t+1}$  is the level of the government debt in period  $t+1$ , the dynamic budget constraint is  $B_{t+1} - B_t = r_t B_t + G_t - T_t$  where  $r_t B_t$  are interest payments on government debt,  $G_t$  is government expenditure and  $T_t$  are tax revenues. As such,  $G_t$  corresponds to non-interest government expenditure and  $r_t B_t + G_t$  to total government expenditure.

lag times. Indeed, in row (5), we can reject the null of the countercyclicality of government investment. Moreover, the strong autocorrelation in the residuals of this and the poor explanatory power (a negative adjusted R2) suggests that a cyclical model is inappropriate in explaining government investment.

Finally, in rows (6)-(7), we decompose government consumption into its wage and non-wage components. Wage government consumption (CGWY) proxies the total public sector wage bill. There is mild evidence of countercyclicality in this variable:  $\beta=0$  can be rejected at a p-value of 0.102. However, the point estimate is small: a 1 per cent cyclical increase in output reduces the ratio of wage government consumption to GDP by 0.078 percentage points. For non-wage government consumption (CGNWY), countercyclicality can be rejected in the data, as the estimate of  $\beta$  is insignificantly different from zero.

Overall, the evidence in Table 2 indicates that the data in general do not support a countercyclical pattern in Irish fiscal policy. However, there is some support for countercyclicality in social security payments — that is to say, “automatic” stabilisers are in fact stabilising — and for a weak effect in wage government consumption. Notice that the acyclicity of government employment and the weak countercyclicality of wage government consumption suggest that it is government wage rates that are mildly countercyclical. This is in accord with the notion that the incomes of public sector workers are “sheltered” from economic fluctuations.

In Table 3, with the caveats discussed above, we consider the cyclical behaviour of government revenues and different measures of the fiscal balance. In row (1) of Table 3, the dependent variable is the ratio of general government revenues to GDP (GREVY). If this ratio is acyclical, the estimated coefficient on the economic cycle measure  $CYC_t$  should be zero. This cannot be rejected at the 10 per cent significance level but the negative point estimate and the p-value of 0.112 suggests that a competing alternative hypothesis is that the ratio of government revenue to GDP may actually fall during booms and rise during recessions.

In rows (2)-(4) of Table 3, three different measures of the fiscal balance are considered. In row (2), the dependent variable is the unadjusted general government fiscal surplus as a ratio to GDP (a negative value represents a deficit situation) GFBY. The p-value of 0.918 for  $CYC_t$  provides strong support for the acyclicity of the unadjusted deficit. That is to say, the suggestive evidence in Table 1 is backed up in regression analysis: it appears as if a “constant deficit” rule nicely summarises the cyclical component of fiscal policy in Ireland. A similar picture emerges in row (3), where the dependent variable is the primary budget surplus (i.e., the budget surplus net

Table 3: *Fiscal Policy and the Economic Cycle II*

	<i>C</i>	<i>CYC</i>	<i>LAG</i>	<i>DUM</i>	<i>R</i> <sup>2</sup>	<i>BG-LM</i>	<i>N</i>	<i>Period</i>
(1) GREVY	.143 (.055) [.024]	-.269 (.16) [.112]	-.35 (.135) [.026]	.0015 (.0063) [.823]	0.48	0.49	15	1980-94
(2) GFBY	.008 (.007) [.294]	.018 (.173) [.918]	-.412 (.128) [.008]	-.039 (.012) [.007]	0.42	0.97	15	1980-94
(3) GPBY	.012 (.005) [.042]	.12 (.185) [.53]	-.343 (.14) [.032]	-.028 (.014) [.072]	0.23	0.94	15	1980-94
(4) GSBY	.0025 (.0071) [.73]	-.351 (.221) [.139]	-.33 (.159) [.063]	-.036 (.016) [.054]	0.23	0.24	15	1980-94

*Notes:* Standard errors in parentheses; p-values in square brackets. BG-LM is p-value from Breusch-Godfrey Lagrange Multiplier test for first-order serial correlation in the residuals. Dependent variables: GREVY is general government revenues as ratio to GDP; GFBY is general government fiscal balance as a ratio to GDP; GPBY is general government primary balance as a ratio to GDP; GSBY is general government structural balance as a ratio to GDP. 1996 data are estimates.

*Sources:* OECD *Main Economic Outlook*, June 1996.

of interest payments on government debt) GPBY. From the evidence in row (4), acyclicity in the structural budget balance (i.e., the budget position adjusted by the OECD to take into account fluctuations in components of the fiscal position that automatically behave cyclically such as unemployment benefits and tax revenues) also cannot be rejected. As in row (1), however, there is some support for an alternative hypothesis that the structural budget deficit is actually procyclical, given the negative point estimate for the coefficient on  $CYC_t$  and the p-value of 0.139.

#### IV ROBUSTNESS CHECK

In Tables 4-5, we employ the actual growth rate of GDP as the proxy for the economic cycle. This is done as the series for potential output begins only in 1978, forcing us to drop observations prior to that date.<sup>10</sup> Bayoumi and Eichengreen (1995) and Gavin and Perotti (1996) also adopt this procedure.

10. Our data on overall government expenditure and on social security payments also only extend back to the late 1970s but the other fiscal policy measures are available from the early 1960s.

The justification is that temporary (cyclical) changes in output are correlated with actual changes in output so the latter is a reasonable proxy for the economic cycle. In addition, using the actual growth rate of GDP avoids controversies concerning the calculation of the process for potential output.

Table 4: *Fiscal Policy and the Economic Cycle III*

	<i>C</i>	<i>CYC</i>	<i>LAG</i>	<i>DUM</i>	<i>R</i> <sup>2</sup>	<i>BG-LM</i>	<i>N</i>	<i>Period</i>
(1) GNEXPY	0.2 (.057) [.004]	-0.235 (.227) [.32]	-0.505 (.14) [.003]	0.041 (.014) [.011]	0.46	0.89	17	1980-96
(2) GEXPY	0.207 (.055) [.003]	-0.257 (.226) [.277]	-0.458 (.116) [.0017]	0.042 (.012) [.004]	0.552	0.36	17	1980-96
(3) EGT	-0.003 (.004) [.41]	-0.015 (.022) [.5]	0.011 (.018) [.55]	0.006 (.0014) [.0002]	0.471	0.61	33	1962-94
(4) SSPGY	0.048 (.019) [.024]	-0.261 (.085) [.009]	-0.22 (.1) [.051]	-0.003 (.005) [.558]	0.456	0.85	17	1978-94
(5) IGY	0.005 (.004) [.182]	0.038 (.034) [.27]	-0.331 (.109) [.005]	0.008 (.003) [.005]	0.212	0.02	34	1961-94
(6) CGWY	0.013 (.008) [.102]	-0.076 (.038) [.058]	-0.099 (.06) [.111]	0.0013 (.002) [.531]	0.143	0.04	34	1961-94
(7) CGNWY	0.002 (.004) [.59]	-0.0003 (.027) [.992]	-0.068 (.052) [.2]	0.003 (.0014) [.04]	0.151	0.95	34	1961-94

*Notes:* Standard errors in parentheses; p-values in square brackets. BG-LM is p-value from Breusch-Godfrey Lagrange Multiplier test for first-order serial correlation in the residuals. Dependent variables: GNEXPY is general government expenditure (net of interest payments) as a ratio of GDP. GEXPY is general government expenditure (inclusive of interest payments) as a ratio of GDP. EGT is ratio of government employment to total private employment. SSPGY is ratio of social security benefits (government account) to GDP. IGY is ratio of government investment to GDP. CGWY is ratio of government consumption (wages) to GDP; CGNWY is ratio of government consumption (excluding wages) to GDP. CYC is measure of economic cycle, as described in text. LAG is lagged level of dependent variable; DUM is dummy variable as described in text.

*Sources:* OECD *Main Economic Outlook*, June 1996, and OECD *Main Economic Outlook* data tape.

Table 5: *Fiscal Policy and the Economic Cycle IV*

	<i>C</i>	<i>CYC</i>	<i>LAG</i>	<i>DUM</i>	<i>R</i> <sup>2</sup>	<i>BG-LM</i>	<i>N</i>	<i>Period</i>
(1) GREVY	.177 (.054) [.006]	-.286 (.145) [.071]	-.41 (.129) [.008]	.0004 (.0071) [.953]	0.515	0.43	17	1980-96
(2) GFBY	.006 (.011) [.556]	.043 (.156) [.786]	-.421 (.115) [.003]	-.04 (.01) [.002]	0.452	0.70	17	1980-96
(3) GPBY	.015 (.01) [.166]	-.066 (.173) [.71]	-.362 (.14) [.019]	-.031 (.014) [.038]	0.215	0.38	17	1980-96
(4) GSBY	.0025 (.0012) [.05]	-.519 (.185) [.015]	-.28 (.136) [.061]	-.037 (.014) [.019]	0.45	0.98	17	1980-96

*Notes:* Standard errors in parentheses; p-values in square brackets. BG-LM is p-value from Breusch-Godfrey Lagrange Multiplier test for first-order serial correlation in the residuals. Dependent variables: GREVY is general government revenues as ratio to GDP; GFBY is general government fiscal balance as a ratio to GDP; GPBY is general government primary balance as a ratio to GDP; GSBY is general government structural balance as a ratio to GDP. 1996 data are estimates.

*Sources:* OECD *Main Economic Outlook*, June 1996.

The results in Table 4 are generally similar to those in Table 2. Countercyclicality is still rejected for the variables GNEXPY, GEXPY, EGT, IGY and CGNWY but the evidence in favour of countercyclical patterns in the behaviour of SSPGY and CGWY is strengthened. However, the point estimates of  $\beta$  for these variables remain small, so that the countercyclical effect is weak at best. In Table 5, the evidence in favour of countercyclicality in government revenues (row (1)) and procyclicality in the structural budget deficit (row (4)) is strengthened: in the former case, the null of acyclicity can be rejected at a p-value of 0.071; in the latter case at a p-value of 0.015.<sup>11</sup>

In summary, the results in Tables 2 and 4 generally point to acyclicity in the ratios of different elements of government spending to GDP. It is important to emphasise that acyclicity in the ratio of public expenditure to GDP indicates that fiscal policy is actually procyclical, as the level of government spending expands and contracts in line with fluctuations in GDP. In addition, from Tables 3 and 5, there is suggestive evidence that tax

11. Although our strong prior is that 1987 makes the most sense as a break-point, we also experimented with other dates for the structural break in the Irish fiscal process, considering 1985 or 1988 instead of 1987. Generally, similar point estimates were obtained for the cyclical indicator but the estimated standard errors were often somewhat smaller.

revenues (as a ratio to GDP) perversely move countercyclically and that the structural budget deficit is procyclical. This latter result of course follows directly from the acyclicity of the unadjusted, or headline, budget deficit. In contrast, the prediction of an optimising theory of fiscal policy would be that the unadjusted fiscal deficit should be countercyclical and the structural budget deficit be acyclical.

The theoretical discussion in Section II provided numerous reasons why optimal fiscal policy is countercyclical, so that our empirical results suggest that the perverse cyclical behaviour of Irish fiscal policy has a deleterious effect on national economic welfare.<sup>12</sup> In the next section, we consider some institutional reforms that may assist in improving the cyclical performance of fiscal policy in Ireland.

## V CONCLUSIONS

The evidence in this paper is that fiscal policy in Ireland has in general not behaved countercyclically. This imposes costs on the Irish economy that are likely to become more severe in any future European monetary union. What can be done to improve the conduct of fiscal policy?

The Maastricht rule setting an upper bound of 3 per cent on the budget deficit as a proportion of GDP and the German-proposed “stability pact” may indeed be useful devices in disciplining the *average* behaviour of fiscal policy but are not helpful in guiding the cyclical behaviour of fiscal policy. As was argued in Section II of this paper, procyclicality in fiscal policy can be the rational outcome of an allocation game among competing fiscal groups. This suggests that the key to improving the cyclical performance of fiscal policy is to “change the rules of the game”. By analogy with the monetary policy literature that advocates ceding control of monetary policy to an independent central bank in order to avoid the political temptation to inflate, an institutional reform that strengthens the power of the finance minister relative to the spending ministries and outside interest groups may be helpful. Of course, this would work only if the reputation of the finance minister were linked to the outcome for fiscal policy. This would require an individualistic approach to evaluating political performance, in which ministers are considered personally responsible for the management of their portfolios. In contrast, a “politics of consensus” precisely creates the conditions in which a common pool co-ordination problem can arise.

12. It is beyond the scope of this paper to explore possible asymmetries in the pattern of fiscal policy over the economic cycle. For instance, is procyclical behaviour mostly driven by excessive laxity during boom periods? A potentially interesting future direction for research is precisely to address such questions.

The proposed switch to multi-year budgeting in Ireland may have ambiguous effects on the cyclical behaviour of fiscal policy. On the positive side, a multi-year framework may permit fiscal actors to be forward-looking and act in a more prudent fashion. For instance, if commitments to future spending could be made binding, competing fiscal groups may be able to form agreements to refrain from increasing current spending during a boom in exchange for higher expenditure during a future recession. On the other side, multi-year budgeting may foster a *manana* culture in which fiscal restraint will always be practised next year, as has been the US experience (see Alesina and Perotti, 1996b).

Clearly, this paper is only a first step in attempting to understand the cyclical behaviour of recent Irish fiscal policy. There is a general awareness that this problem exists: the challenge now is to identify its root causes and, with luck, design mechanisms that can lead to improvements in the future conduct of fiscal policy.

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