What Happened to Fiscal Policy During the EU Accession Process 1996-2004?

Abstract

This paper analyses the evoloution of fiscal policy in the 8 New EU member states during the accession process, testing for country and time specific effects. We do this by constructing both taylor-type policy "rules" and by calculating three measures of fiscal stance. We find the differences across countries more significant than those across time. Baltic countries tended to have tight fiscal policy which responded to the output gap, larger central European countries had more lax (and increasingly lax) fiscal policies which were unresponsive to the output gap. These differences correlate closely with cross-country differences in exchange rate regimes and we find no link to either spending composition or political variables. Taken together our results suggest that the exchange rate regime is by far the most significant determinant of fiscal performance. These results suggest that the "soft power" of the prospect of EU entry did not act as a spur to greater fiscal discipline and that higher budget deficits in recent years cannot be blamed on costs of accession.

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1. Introduction

Better policymaking and institutional reforms are often cited as key benefits of the of closer European integration. The experience of the EU expansions to the South and to the East (not to mention the contemporary experience of Bulgaria, Romania and Turkey) provides compelling evidence for the accession process as an impetus for rapid and far reaching institutional reform in states seeking EU membership. On the economic front, as Berger et al (2004) note, one of the strongest arguments for an early enlargement of the EU to Central and Eastern Europe was that the accession process would provide an external anchor for macroeconomic policies.

In addition, the run-up of Economic and Monetary Union (EMU) is also associated with major changes to policymaking. In the 1990s, following the signing of the Maastricht Treaty, the goal of EMU membership provoked strenuous efforts to meet the strict criteria governing entry. Inflation and exchange rate criteria required (and achieved) a substantial reduction in inflation rates in many countries, and on the fiscal side the need to comply with the debt and deficit criteria of the Maastricht Treaty led to a concerted and historically exceptional period of fiscal retrenchments across many countries.[1]

In this paper we analyse whether the recently completed accession process fostered a similar improvement in fiscal policymaking alongside the political and institutional reforms already mentioned. We define this "accession period" to be from 1996 to 2004. By 1996, all aspiring members the bulk of reforms concerning privatisation, property rights, banking and other market institutions had been made and all eight countries had lodged applications to become accession candidates. This process concluded on May 1 2004 with the full accession of 8 New Member States[2] (NMS) from central and Eastern Europe.

[1] For example, von Hagen et al (2001) provide strong evidence of a "Maastricht Effect" in prompting fiscal consolidations, Turini and In 't Veld (2004) show fiscal policy became more counter cylical after 1993.

[2] The eight countries were: The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. Malta and Cyprus also joined on this date but are not considered here as we focus on Central and Eastern European countries.

There are no fiscal, monetary or exchange rate criteria for joining the EU. The only economic criteria are a functioning market economy plus commitment to the single market for labour, goods and capital. However, all the NMS are committed to joining the Euro as part of the *accquis communitaire.* This means that unlike the original Maastricht signatories, the accession phase and the run-up to EMU membership are not two distinct and very separate epochs. For the NMS these two epochs will overlap to a greater or lesser extent, depending on the speed with which policymakers target membership of the single currency. Thus we might expect so see some of the economic policy gains associated with the run-up to EMU occurring prior to May 1st 2004.

To test for the presence of any such *accession effects* in fiscal policy, we consider a variety of fiscal policy indicators, pooling our data across groups of similar countries. In section 2, we describe fiscal policy in terms of a Taylor-type rule, where fiscal policy responds to the output gap, adding in additional variables to capture regime effects. In section 3 we consider the problem of sustainability and debt dynamics more explicitly, deriving measures of fiscal stance directly from the theory of sustainable fiscal policy. In section 4 we consider how the composition of government spending may account for the differences across countries and time.

2. Fiscal Policy Rules

In this section we describe fiscal policy by means of a simple rule, analogous to the "Taylor Rule" in the literature on monetary policy, where the observed budget deficit is given as a function of the output gap. This gives a measure of the pro or counter cyclicality of fiscal policy, and the extent to which fiscal policy is geared towards stabilising output.

Kattai and Lewis (2004) estimate such country-specific equations, but with a maximum of eight observations per country, only two parameters- an intercept and output gap co-efficient- may be estimated. To test for the impact of other variables such as country size, time effects, political factors etc requires us to pool data across countries to conserve degrees of freedom. Pooling the data into a single sample (but allowing for fixed or random effects) is a widely used methodology in studies aiming to quantify such other influences on fiscal policy (See for example Turini and In 't Veld, 2004, Berger et al, 2004).

Previous theoretical and empirical work suggest various factors which may be influence fiscal policy in NMS between 1996-2004. Empirical work on the first wave of entrants (Von Hagen et al 2001, Lewis and Hughes Hallett 2004) suggest there was a marked improvement in fiscal discipline in the run up to EMU, but a loosening after EMU entry was assured. Smaller countries tended to make greater efforts to consolidate than larger countries, which is generally attributed to the fact that smaller countries have less political power, and are easier to exclude.

Similarly for NMS, Berger et al (2004) find a significant loosening in the larger central European economies fiscal policy post-1999, once they believed their membership was assured. Again part of the explanation put forward is that the Czech Republic, Hungary and Poland were of greater geopolitical importance, and that having joined NATO, they believed they could not be excluded by the EU; whereas the Baltic states had to maintain discipline, because their lesser geopolitical importance made it credible to threaten to exclude them.

There are also other factors, which suggest a natural split between the *Baltic* states (Estonia, Latvia and Lithunia) and the large central European countries- *Large Hapsburgs*- (Czech Republic, Hungary and Poland.

A well developed strand of literature on exchange rate regimes (see for example, Canzoneri, Cumber and Diba, 1999) suggests that currency boards or hard pegs are only successful if fiscal policy is sustainable and thus act to anchor fiscal policy[3],. Estonia and Lithuania have Euro backed currency boards, Latvia has a very tight peg to the SDR; whereas the Hapsburgs have followed a variety of looser exchange rate regimes. In addition, within-group trading patterns, linkages to the Former Soviet Union as well as country size, suggest a natural division between the Baltics and Large Hapsburgs. We also identify a third group of *Small Hapsburgs* (Slovakia and Slovenia)- who, like the Baltics are of small size, but who are more similar to the bigger Hapsburgs in economic terms.

2.1 Econometric Methodology

In this section we estimate fiscal rules of the form:

$$d_{it} = \alpha + \beta \hat{y}_{it} + \gamma z_{it} \qquad (9)$$

Where d is the deficit ratio, $\hat{y}$ is the output gap, and z is a vector capturing country-group and time specific effects. The methodology utilised is instrumental variables regression, where the money supply, inventories and gross fixed capital formation and its own lag are used to instrument the output gap. To capture time effects, we include a pre-1999 time trend (equal to 0 from 2000 onwdards), a post-1999 dummy, and a post-1999 slope dummy. This corresponds to the date at which the Large Hapsburgs joined NATO, considered by Berger et al (2004) to be the point at which these countries

[3] However, whether the threat of exchange rate regime collapse is sufficient to discipline fiscal policy is a separate issue. Recent empirical work (e.g. Tornell and Valasco, 1998 and Yan Sun, 2003) has suggested that tight exchange rate regimes are not sufficient to discipline fiscal policy.

felt EU accession was assured. Diagnostic tests also support the choice of 1999 as a "focal year" for time effects.

To account for country differences we split the sample up into the three groups described above, and experimented with both fixed and random effects to capture country specific effects.[4] We experimented with economic variables expressed as ratios to potential as well as actual GDP, but no differences were found between the results. The results are shown below.

[4] There is no consensus between similar studies on whether to use fixed or random effects. To preserve generality, enhance comparability, and to demonstrate that our results are robust to estimation method chosen, we report both results.

Table 3: Fiscal Policy Rule by Country Group

Independent Variable (deficit ratio to GDP ratio)	Country Group					
	Baltics		**Big Hapsburgs**		**Small Hapsburgs**	
	Fixed	**Random**	**Fixed**	**Random**	**Fixed**	**Random**
Constant	-1.507 *(0.380)*	0.252 *(0.908)*	0.859 *(0.813)*	**-3.699** ***(0.035)***	-4.794 *(0.166)*	-2.228 *(0.617)*
Output Gap	**0.859** ***(0.002)***	***0.758*** ***(0.075)***	0.265 *(0.340)*	0.344 *(0.304)*	-1.215 *(0.123)*	-0.657 *(0.573)*
Interest Payments	1.115 *(0.275)*	-0.568 *(0.454)*	-1.083 *(0.202)*	0.119 *(0.672)*	-1.976 *(0.144)*	**-3.200** ***(0.007)***
Pre99	-0.582 *(0.241)*	-0.671 *(0.286)*	-0.376 *(0.502)*	0.061 *(0.910)*	**1.425** ***(0.015)***	**1.600** ***(0.004)***
D99	1.579 *(0.526)*	1.431 *(0.656)*	-0.577 *(0.778)*	1.136 *(0.573)*	2.253 *(0.388)*	**3.699** ***(0.040)***
Post99	**-1.002** ***(0.083)***	*-0.989* *(0.152)*	**-1.119** ***(0.018)***	**-1.262** ***(0.011)***	**0.768** ***(0.074)***	0.540 *(0.159)*
R^2 Within	0.7284	0.6850	0.5948	0.5136	0.8694	0.8453
R^2 Between	0.9658	0.9158	0.2706	0.9957	1.000	1.000
R^2 Overall	0.5670	0.6984	0.2307	0.6097	0.9323	0.9397
Number of observations	21		18		13	

The results suggest a marked difference between the three groups. The output gap is only significant for the Baltic states, suggesting that the in the large and small Hapsburgs fiscal policy is not used for stabilisation purposes. This could reflect that fact the Baltics have surrendered monetary policy to pursuing an exchange rate goal, and so fiscal policy is the only instrument left for stabilisation policy, whereas countries with more flexible exchange rates, are using monetary policy to stabilise, and fiscal policy for other objectives.

The time dummies also reveal an post-1999 fiscal expansion of around 1% per year in the Large Hapsburgs, and a smaller contraction in the Small Hapsburgs. This is consistent with the view that smaller countries made efforts to consolidate fiscal policy prior to EU entry, whereas larger countries felt the pressure had eased once their accession was perceived to be secure. However, we also found that fiscal policy expanded by around 1% per year in the Baltic states. This could well be explained by the observation that following the budget deficit rise in response to the 1999 Russian crisis, Lithuania and Latvia struggled to recover their budgetary position in the upswing (See the graphs of fiscal policy stance in the appendix or the figures in Lewis and Kattai (2004) for a demonstration of this point)

We find no significant role for interest rates in the Baltics or Smaller Habsburgs, suggesting that the falling interest rate burden in the latter was simply used to expand the primary position. The co-efficient sign in the Large Hapsburgs random effects regression is implausibly high, suggesting that it could reflect the unsuitability of treating Slovenia and Slovakia as a homogenous group. This may also explain why the constant term is not significantly different from zero in this group.[5]

Lastly, the constant term is only significant for the Large Hapsburgs- equal to some 3.6% per year, meaning that the bulk of the difference in fiscal performance between the Baltics and Large Hapsburgs was constant across the sample period. The post 1999 loosening only explains a small fraction of the difference between the groups, suggesting that some other factor must have been at work.

In addition to the variables shown in table 1, we also experimented with a wide variety of other variables which may affect fiscal policymaking, such as the electoral cycle, population, decentralisation of government etc. However, none of these country specific factors turned out to be significant. We also experimented with replacing the output gap with economic growth[6], but found that it produced similar results- the only difference being that the expansion in the Baltic states showed up in the step dummy, rather than in the post-1999 trend.

[5] The t-statistic turns out not to be significant, due to high variance of the co-efficient estimate rather than a estimated co-efficient close to zero.
[6] This was the approach used by Berger et al (2004)

3. Fiscal Stance and Fiscal Sustainability

In this section we shift the focus from budget deficits, to measures of fiscal stance which are explicitly derived from the economic theory of sustainable fiscal policy. We now consider the role of interest payments on the existing debt stock, economic growth, inflation, alongside the primary and total budget balance.

We use the same analytical framework for the dynamics of debt in relation to economic growth following Hughes Hallett (2002). Our starting point is the government's budget constraint at time t, expressed in real terms:

$$G_t + (1 + i_t)B_{t-1} \leq T_t + B_t \qquad (1)$$

Suppose the government debt takes the form of one period bonds. Debt may be rolled over if the government does not have sufficient tax revenues to pay off all of its national debt at time t. Equation (1) says that, in any given period, government spending *G* plus the costs of servicing the stock of debt, *B*, accumulated in previous periods must be less than or equal to the sum of tax revenue, T, plus the current period's debt.

Dividing both sides by output, Y_t, enables us to carry out analysis with all variables expressed as ratios to GDP. Equation (1) then becomes:

$$g_t + \frac{(1 + i_t)}{(1 + x_t)} b_{t-1} \leq t_t + b_t \qquad (2)$$

where x is the growth rate of *nominal* GDP, and we have used $Y_t = (1 + x_t)Y_{t-1}$. This then yields the following equation for the dynamics of the debt burden[7]:

[7] From here on, time subscripts are suppressed for simplicity

$$\dot{b} = (g - t) + (i - x)b \qquad (3)$$

But x can be decomposed into the sum of real GDP growth, γ, and the rate of inflation, π. Similarly, the nominal interest rate can be decomposed into the sum of the real interest rate, r, and the rate of inflation. Making those substitutions, equation (3) can be re-written in real terms.

$$\dot{b} = (g - t) + (r - \gamma)b \qquad (4)$$

Inserting $\dot{b} = 0$ into equation (4) and re-arranging, gives the following condition for stability of debt ratio

$$(t - g) = (r - \gamma)b \qquad (5)$$

From this analysis we may generate three "benchmark" fiscal policies and, by comparing actual fiscal policy with these benchmarks, three measures of fiscal stance. The first benchmark is where the government runs a primary surplus sufficient to cover all interest payments:

$$(t - g) = ib \qquad (5)$$

The government issues no new debt, but simply rolls over its existing nominal debt stock which remains constant over time. The debt to GDP *ratio*, falls over time as output increases.

We may modify this equation to take into account fluctuations in the rate of output. To do this, we assume that the government increases real expenditures in line with long-run economic growth each year, setting a (time invariant) average tax rate consistent with running a primary surplus equal to

interest payments over the cycle. When output is above trend, the government will run a surplus to compensate for the deficits in bad times. This yields:

$$(t - g) = g_0 - G_0(1 + \gamma)^t + ib \tag{6}$$

where γ is the long rate rate of growth obtained by calculating the average compound growth rate over the sample. This implies that there is no net borrowing over the cycle, and so again, the debt stock is constant, but the debt to GDP ratio declines over time due to economic growth.

The last benchmark is that of debt stability. This is, by definition, more liberal than the previous two benchmarks which imply a falling debt ratio over time. From our earlier equation we have:

$$(t - g) = (i - \pi - \gamma)b \tag{5}$$

Since nominal GDP growth will serve to reduce the debt to GDP ratio for a given stock of nominal debt, the governments budget surplus need only be $(i-\pi-\gamma)b$, rather than ib. Moreover, as Buiter (2004) has pointed out, given the higher rates of inflation and economic growth implied by price and output convergence with the EU-25, the sign of $(i-\pi-\gamma)b$ may well be negative for our countries. Therefore debt stability requires a primary deficit rather than a surplus, and hence this measure, when taking into account how inflation and economic growth may lower debt ratios, implies that governments have some scope to run modest primary deficits during the accession process. It also captures explicitly the role of inflation and economic growth in "paying off" a debt stock.

We may plug in the observed values of inflation and economic growth to calculate these benchmark primary balances for each country and in each time period. By subtracting actual primary balances from the benchmark ones, we obtain a measure of fiscal stance where a positive number denotes an expansionary position, and a negative sign a contraction.

At this juncture we require data for both debt ratios and interest payments, as well as taxes and revenues. In the case of Slovakia and Slovenia, this does not exist in the AMECO dataset throughout

the period, and so we drop these countries from our analysis. For the other 6 countries, the AMECO dataset is broadly adequate.[8]

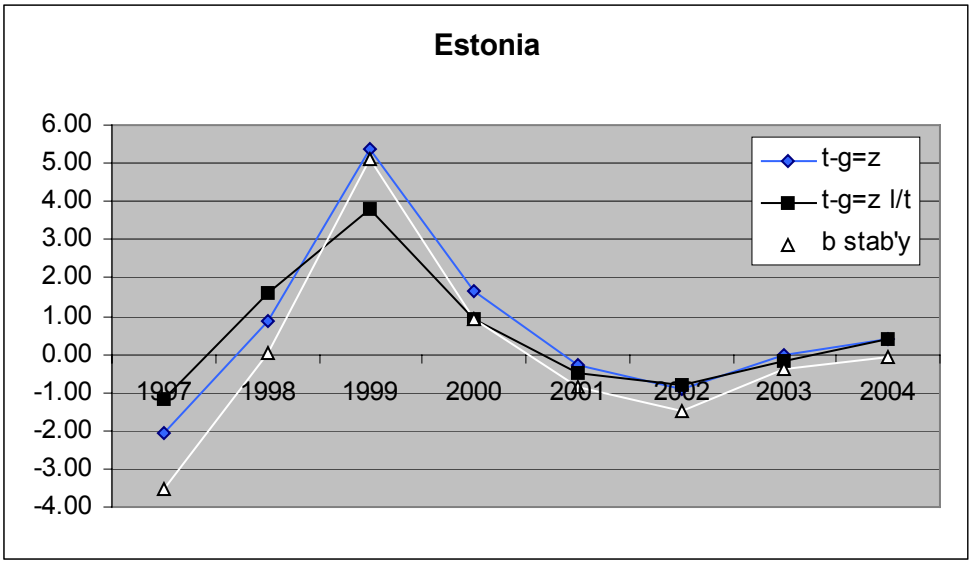
We may then use these indicators in two ways. First, we may plot them for each country over time, and visually inspect the resulting graphs. This can be a useful tool in small datasets- since econometric tests have low power, the trained eye may pick up what formal analysis cannot. Second, we may use these fiscal policy indicators as independent variables in pooled econometric analysis to test for the kind of effects outlined in the previous chapter.

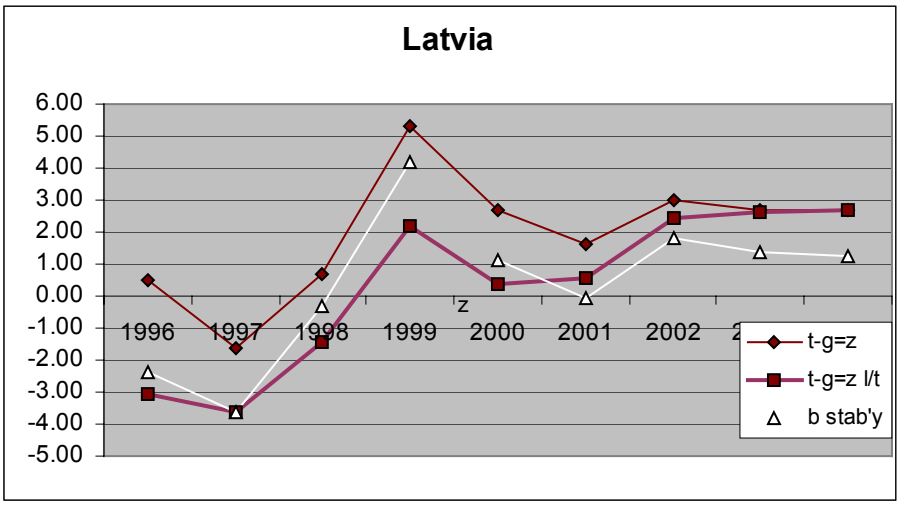
3.1 Fiscal Policy By Country

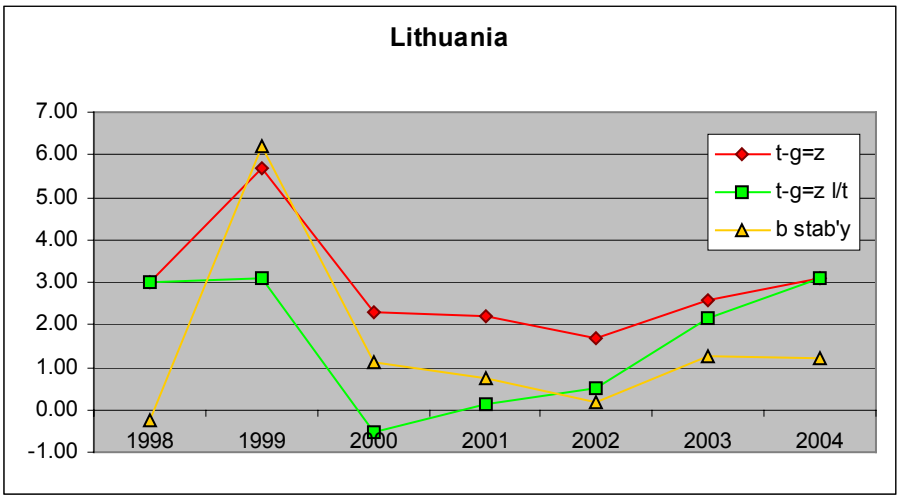
In what follows, we graph the fiscal policy measures for each country, grouping the nations into Baltics and Large Hapsburgs as before. Where debt or interest rate data is added from IMF dataset, we indicate this with a break in the line.

[8] The IMF's IFS database was used to replace the missing observations for debt and interest rate figures. As a consequent the debt stability benchmark (but not the others) is calculated using data drawn from 2 different accounting methodologies. However, a comparison between the datasets for years where both record observations suggests that the methodologies produced very similar figures. A further check was made comparing the different fiscal policy measures for consistency. These suggested that the additional degrees of freedom gained by supplementing the data with IMF figures outweighed any possible problems induced by mixing the data. Using IMF data for taxes, revenues and deficits however does affect the other 2 fiscal policy indicators. Since policymakers in NMS use EU figures, it seemed reasonable to use EU data wherever possible for our analysis.

Figure 4: Fiscal Stance in Baltic Countries

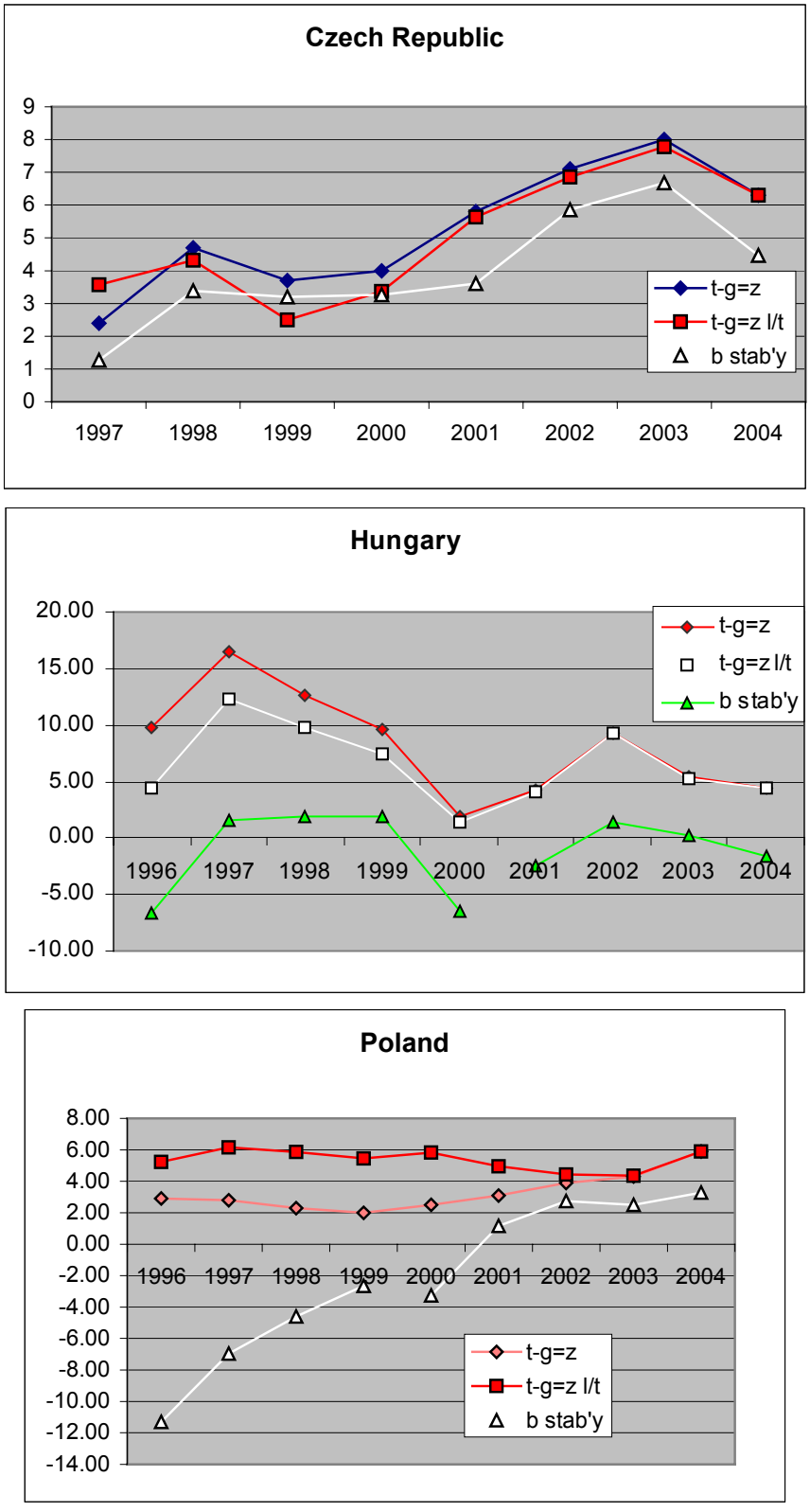






The three graphs reveal a relatively consistent picture across all three countries. The closeness of the three indicators reflect the low debt ratios of these countries- hence inflation and growth effects on existing debt stocks are small. Prior to 1999 fiscal policy is consistent with stable debt ratios. In 1999, the Russian crisis causes a sharp fall in output, and a corresponding rise in deficits. In subsequent years, fiscal stance reverts to its pre-shock state, although Latvia and Lithuania show some sluggishness in re-covering their budgetary positions during the upswing.

Figure 5: Fiscal Stance in the Large Hapsburgs



In comparison with the Baltics, we see that fiscal policy is significantly looser in all 3 countries. In the early part of the accession period, inflation helped to keep debt ratios down in Poland and Hungary, but as inflation slowed debt dynamics worsened. However, this fall in inflation cannot account for the fiscal slippage post-1999, because all three fiscal policy indicators rise in this period, indicating that it was deteriorations in the primary balances that were to blame rather than slow growth or lower inflation.

3.2 Fiscal Policy by Country Group: A Cross-Sectional Analysis

We now anaylse fiscal policy stance using each of our derived fiscal policy measures as a dependent variable. As in the last section, we pool data according to the country groups, the only difference being that the Small Hapsburgs are excluded because data problems mean it is not possible to construct a single, consistent time series. To do this, we estimate regressions of the form:

$$fp_{ijt} = \alpha + \gamma z_{it}$$

where *fp* corresponds to the fiscal policy measure for country *i* at time *t*, and *z* corresponds to a vector of possible explanatory variables. The results are shown below:

Table 6: Regressions Using Fiscal Policy Measures

Independent Variable	Dependent Variable (Fiscal Policy 1: primary surplus covers interest payments)			
	Baltics		Large Hapsburgs	
	Fixed	Random	Fixed	Random
Constant	0.013 *(0.998)*	**-4.774** ***(0.040)***	-2.261 *(0.490)*	2.643 *(0.164)*
Interest Payments	-1.259 *(0.608)*	**1.410** ***(0.032)***	1.144 *(0.172)*	-0.276 *(0.292)*
Pre99	0.672 *(0.608)*	**1.561** ***(0.068)***	0.779 *(0.262)*	0.495 *(0.529)*
D99	5.250	**7.385**	2.208	0.724

	(0.127)	***(0.001)***	*(0.233)*	*(0.704)*
Post99	**-0.862** ***(0.008)***	**-0.800** ***(0.004)***	**0.890** ***(0.007)***	**0.997** ***(0.002)***
Within	0.5751	0.5360	0.6073	0.5069
R^2 Between	0.8098	0.9092	0.1867	0.9934
Overall	0.2473	0.6013	0.1545	0.5544
Number of observations	21	21	19	19

For the Baltic states, we find some evidence of a fiscal expansion in 1999- but this is probably due to the budgetary consequences of the Russian Crisis. Moreover, we see that fiscal policy gradually tightened after 1999. However, for the large Hapsburgs, a quite different picture emerges. For these nations, fiscal policy gets *looser* after 1999, by around 0.9 percentage points of GDP per year. Cumulatively, this implies that fiscal policy was around 4.5% of GDP looser on the date of accession than it was in 1999.

Table 7: Fiscal Policy 3

Independent Variable	Dependent Variable (Fiscal Policy 3: Relative to Debt Stability)			
	Baltics		Large Hapsburgs	
	Fixed	Random	Fixed	Random
Constant	-4.068 *(0.491)*	**-6.746** ***(0.006)***	0.618 *(0.856)*	-0.187 *(0.907)*
Interest Payments	-0.666 *(0.807)*	0.799 *(0.250)*	**-2.547** ***(0.009)***	**-2.366** ***(0.000)***
Pre99	1.330 *(0.366)*	1.837 *(0.042)*	**1.981** ***(0.014)***	**2.017** ***(0.002)***
D99	**8.078** ***(0.007)***	**9.302** ***(0.000)***	**4.999** ***(0.019)***	**5.209** ***(0.001)***

Post99	**-0.990** ***(0.00)***	**-0.955** ***(0.001)***	**1.2667** ***(0.001)***	**1.322** ***(0.000)***
R^2 Within	0.6524	0.6447	0.8951	0.8939
R^2 Between	0.0003	0.9644	0.9490	0.9758
R^2 Overall	0.5760	0.6674	0.9284	0.9332
Number of observations	21	21	19	19

These results reveal a clear difference between the country groups. Other things being equal, the Baltic nations had a more restrictive fiscal policy stance (as shown by the constant term) than the Large Hapsburgs.

4. De-composition of Deficits by spending type

Up to now, the analysis has concentrated on the simple aggregate deficit. In what follows, we conduct an analysis using disaggregated data. This enables us to address a number of issues. First, it has been noted by Buiter (2004) and others, that given the higher economic growth and higher inflation implied by the catchup process, allied with the low levels of public capital in many new EU members, there is rationale for running budget deficits, if those deficits are used to finance public sector investment. In other words, investment should be treated differently to other categories of government spending. A disaggregated analysis allows us to see whether higher deficits reflect higher levels of investment, or simply higher levels of other items of spending. Second, the recent literature on public finances suggests that the composition of public spending affects fiscal stance. For example von Hagen et al (2001), find that the success of fiscal consolidations is related to whether expenditure or revenues are targeted, and by what sort of expenditure is cut.

4.1 Linear Regression Analysis

We begin by analysing the relationship between the deficit ratio and the type of spending. To do this we estimate the following equations:

$$d_{it} = \alpha_i + \sum_{j=1}^{6} \beta_j E_{ijt} \tag{12}$$

$$d_{it} = \alpha_i + \sum_{j=1}^{6} \gamma s_{ijt} \tag{13}$$

Where E_i and s_j correspond to the proportion of GDP spent on, and the share of total government spending devoted to expenditure type j. The six types of government spending used the AMECO

dataset are transfers in kind, cash transfers, government wages and salaries, gross fixed capital formation, collective consumption and subsidies.

We estimate the regression using shares of government spending so as to come up with a measure which is independent of the size of the government sector. One may argue that the size of the government sector is determined by other factors, not least social preferences, and therefore, what matters is the proportion of collective expenditure given to various uses. On the other hand, the regression using shares of GDP has the advantage that it directly captures the effects of varying the level of each component. For instance, one may argue that the components of government spending are largely independent- in the sense that the choice of how much public investment is independent of the level of say subsidies. In addition, total government spending data is not available for all countries over the sample period, so expressing variables as a ratio to GDP allows us to include more observations.

We can use these equations to test various hypotheses about budget deficits. If higher budget deficits simply reflect (say) greater capital investment, then we will observe a negative co-efficient on capital investment. On the other hand, if we observe no significant co-efficients, then it means there is no linkage between the composition of budget deficits and their size, in which case, we may conclude that differences in budget deficits are the result of different intertemporal preferences, political structures or some other unobserved variable.

The regression using shares of government spending has 24 observations spanning four countries- Czech Republic, Latvia, Lithuania and Poland, therefore, it should be borne in mind that the results are derived from using only half of the countries in the sample.

The regression using shares of GDP is calculated for two different samples, one using the most possible observations, and one using the same observations as the shares of total government spending regression. This enables a direction comparison between the results to be made, by estimating two equations over the sample set of observations. Results are presented below:

Table 8: Different Types of Spending versus Budget Deficits

Independent Variable		Shares of Government Spending	Shares of GDP	
			Full Sample	Comparison
Constant		-8.041 *(0.250)*	-4.281 *(0.628)*	**14.502** ***(0.083)***
Transfers in Kind		0.362 *(0.136)*	0.521 *(0.243)*	0.177 *(0.763)*
Cash Transfers		0.125 *(0.375)*	-0.136 *(0.669)*	-0.240 *(0.457)*
Government Wages & Salaries		-0.413 *(0.170)*	-0.461 *(0.378)*	-0.970 *(0.128)*
Gross Fixed Capital Formation		0.362 *(0.116)*	-0.462 *(0.378)*	0.162 *(0.776)*
Collective Consumption		0.236 *(0.169)*	-0.406 *(0.319)*	-0.090 *(0.814)*
Subsidies		**-1.526** ***(0.030)***	**--2.670** ***(0.000)***	***-3.416*** ***(0.014)***
R^2	Within	0.3054	0.1328	0.4712
	Between	0.9909	0.8503	0.8845
	Overall	0.4883	0.5562	0.5805
	n	24	35	24

These results indicate that the only significant compositional effect comes from the subsidies component which enter with a strongly negative sign. This implies that higher spending on subsidies is associated with higher deficits. On the contrary, we find no evidence that higher deficits are associated with higher investment, transfer payments, transfers in kind, collective consumption or government employees.

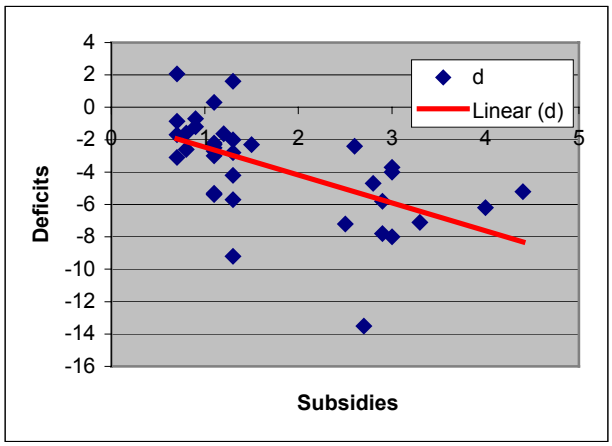
Various other specifications were estimated- breaking the data down into the same country specific groups as in section 3, and using primary as well as total balances. In each case, no different or significant results were found.

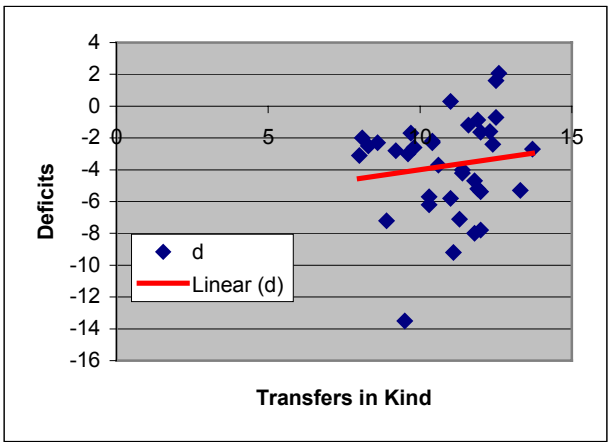
4.2 Graphical and Descriptive Analysis of Composition

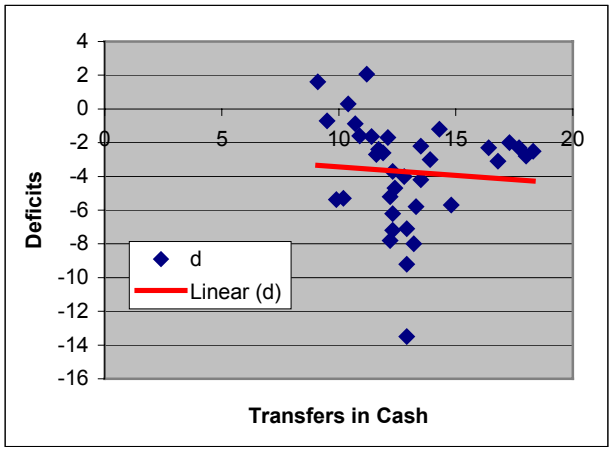
We also conduct a graphical analysis and descriptive analyis of the data. Firstly, we plot scattergraphs of the each component of spending versus the total deficit. In each case, we see that there is very little association between expenditure in each sub-category and the overall deficit ratio. In particular, there is very little linkage between gross fixed capital formation and the deficit ratio, suggesting that the variation in deficits across countries cannot be accounted for by different levels of public investment.

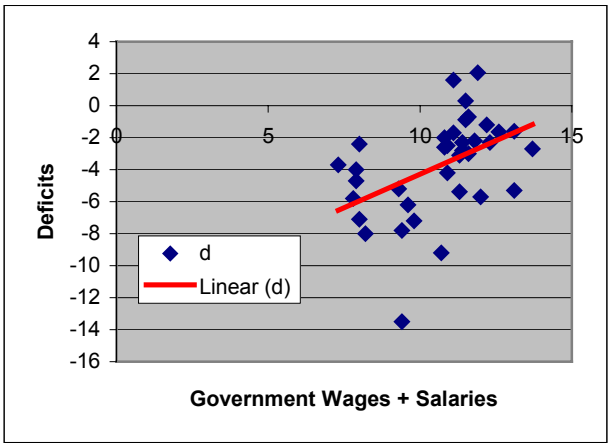
In addition, we calculate the correlation co-efficients between each item of expenditure and the total deficit ratio. Interestingly, we find a significant positive correlation between government employees and the budget balance- implying that in low deficit/high surplus countries, there is a greater spending on government employees. This suggests that higher deficits are not in general, the fault of high public sector wage costs. There is also an insignificant positive correlation between the budget balance and transfers in kind. Collective consumption expenditure, and gross fixed capital formation have correlation co-efficients close to zero, indicating there is little linkage between either category and the deficit ratio. The most significant correlation is between subsidies and and deficits- indicating the higher deficit countries tend to be characterised by higher spending on subsidies.

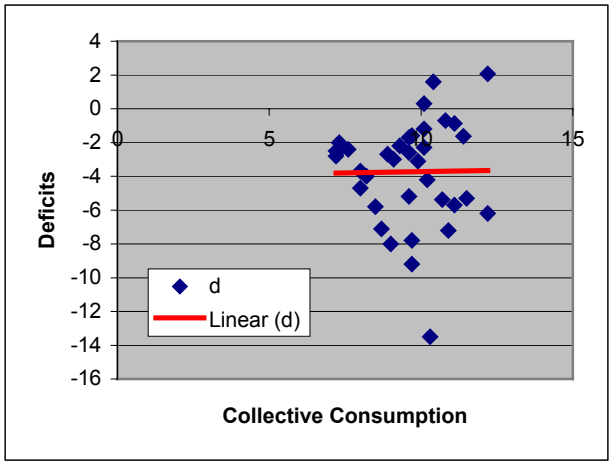
Von Hagen et al (2001), found that when accounting for the success of fiscal consolidations targeting subsidies, government wages and salaries and transfers had a positive effect on the longevity of consolidations. Our results suggest that subsidies are an important predictor of the overall deficit ratio, but we find no evidence that variations in government wages and transfers are correlated with the deficit ratio.


Deficits
d
Linear (d)
Subsidies


Deficits
d
Linear (d)
Transfers in Kind


Deficits
d
Linear (d)
Transfers in Cash


Deficits
d
Linear (d)
Government Wages + Salaries


Deficits
d
Linear (d)
Collective Consumption

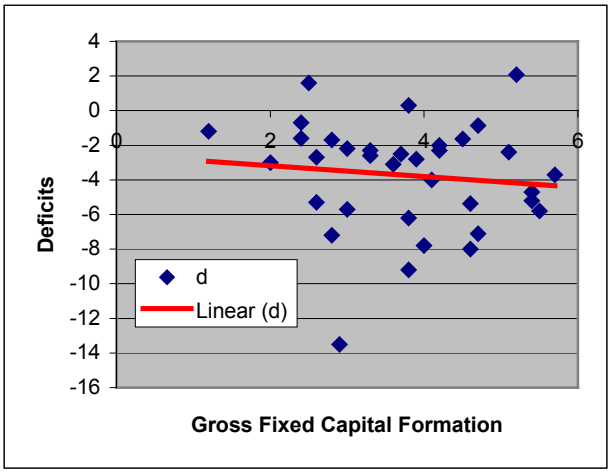

Deficits
d
Linear (d)
Gross Fixed Capital Formation

Table 9: Correlation Co-efficients between expenditure type and deficits

Item	Correlation
Transfers in Cash	-0.1459
Transfers in Kind	0.1946
Government Wages + Salaries	0.3318
Gross Fixed Capital Formation	-0.0554
Collective Consumption	-0.0535
Subsidies	-0.5964

Critical value for n=35: **0.325 (5% sig), 0.419 (1%)**

4.3 Cyclicality of Public Finances

One possible reason for the observed correlation between different components of government expenditure and deficits, is that different components may have different correlations with the output gap. In which case, the interpretation of the results in the previous sub-section becomes more complex, as the observed correlations may simply represent the fact that certain components of government spending vary with the cycle. This could lead to radically different policy conclusions, because it may be argued that the correlation captures the automatic fiscal stabilising effect of that expenditure category; on the other hand.

To examine this issue, we decompose the government budget balance as follows:

$$d_{it} = \alpha_{it} + t_i - \sum_{j=1}^{6} E_{ijt} \qquad (14)$$

Where α captures the fact that due to data issues, the recorded budget deficit may not simply be the difference between total expenditure (including interest payments) and total revenue. Differentiating this with respect to the output gap q, yields:

$$\left(\frac{dd}{dq}\right)_{it} = \alpha_{it} + \left(\frac{dt}{dq}\right)_{it} - \sum_{j=1}^{6}\left(\frac{dE_j}{dq}\right)_{it} \tag{15}$$

In other words, the effect on the deficit of changing the output gap may be de-composed into the effect of the output gap on revenues, and each component of government spending. We may estimate the marginal response of each element using cross sectional methods.

Table X shows the results of regressing each component against the output gap, using money supply, gross fixed capital formation, inventories and the lag of the output gap as instruments. Fixed effects were used, to capture the effect of different preferences for different expenditure types across countries

Table 10: Cyclicality of Components of Government Spending 1995-2003

Dependent Variable	Co-efficient	p-value	R^2		
			Within	Between	Overall
Transfers in Cash	-0.138	*0.332*	0.1774	0.6417	0.0233
Transfers in Kind	0.017	*0.896*	0.0000	0.5102	0.0821
Gov wages	0.024	*0.799*	0.0000	0.0186	0.0183
Gross Fixed K	0.027	*0.804*	0.0000	0.2392	0.0110
Collective Cons	0.052	*0.706*	0.0448	0.5847	0.0147
Subsidies	-0.093	*0.144*	0.0791	0.0037	0.0089

These results demonstrate that, across the whole sample, we can discern no cyclical pattern to any particular component of government spending. That is not to say that for individual countries, all categories of spending are acyclical, but it does demonstrate that the results of the previous section are not merely picking up the fact that during recessions (when deficits are likely to be higher) certain categories of spending are higher.

This result is in keeping with earlier results which estimated the response of fiscal policy to output gaps in the CEEC-8 countries. Kattai & Lewis (2004) find that only Estonia, Latvia and Poland exhibit any responsiveness of deficits to the output gap when regressions are carried out at a group level. Similarly in section 3, the output gap was not significant in explaining fiscal policy in the cross-country regression using all 8 countries.

5. Conclusions

Section 2 examined fiscal policy country by country. This analysis revealed a marked contrast between different countries. We find that fiscal policy was generally more expansionary in the Czech Republic, Poland and Hungary. We also find that for the latter two, debt ratios were moderated by stronger inflation, and that once inflation slowed, debt ratios began to rise more sharply. The Baltic nations tended to follow less expansionary fiscal policies, apart from during 1999 when there was a strong expansionary response to the Russian crisis. However, we find that after 1999, fiscal policy returns to more or less the same position as prior to the crisis.

In section 3, we tested for time and regional specific effects. We found that there was a worsening of fiscal discipline post-99 in the larger central European countries, which was not matched in the Baltic states, or in Slovakia and Slovenia. This finding is consistent across a variety of measures and provides further empirical support for the hypothesis of Berger et al (2004) that fiscal discipline became looser once inside the EU. However, these results must be qualified with the observation that this increase in spending could simply be the result of higher costs of the *accquis communitaire.* That said, this explanation of deficits is troubling because it would appear that from a disaggregated analysis these higher deficits cannot be explained by higher public investment, and these effects do not show up for other member states, even those with lower levels of GDP. We also find that the Baltic states tended to run tighter fiscal policies, perhaps as a consequence of the greater need for discipline under a currency board. The analysis of section 2, suggested that inflation was being used to reduce debt ratios in many larger central European economies, an option that is largely ruled out under a currency board.

In section 4, we found that there is a relatively weak correlation between the *type* of government spending, and deficits. On the one hand, this means that higher deficits cannot simply be attributed to greater investment, but equally it suggests that fiscal discipline is not strongly associated with targeting any one particular component. We did find that subsidies were correlated with deficits, suggesting that higher spending on subsidies were associated with looser fiscal policies. We also found little evidence of cyclical influences on each category.

Overall, the evidence suggests that accession process did not exert widespread fiscal discipline on applicant countries during the accession process. The closest we come is the loosening of fiscal policy in the large central European countries post-99 which could be interpreted as a relaxation of stance after the discipline provided by the implicit threat of exclusion from the EU was lifted. However, our results indicate that the loosening began well before 1999, suggesting that the subsequent loosening was the continuation of the previous trend, rather than a new innovation.

Far more striking than the temporal effects are the differences between countries. Testing for the effect of various political variables or the composition of spending yielded no significant explanatory results. Rather, fiscal discipline appears to be much more closely correlated with cross-country effects, and in particular the currency board/tight peg arrangements of the Baltic nations. In addition it is difficult to blame larger deficits on the costs of the accession process, since there was no uniform loosening of fiscal policy across all countries. If anything, one might expect the Baltic nations to have had higher costs, since they were starting from lower levels of GDP and with fewer market institutions in the early 1990s.

It could be argued that the real spur to fiscal discipline is provided by EMU rather than EU membership, since it is only the former which imposes binding numerical entrance criteria for fiscal variables. The effects of this would be almost observationally equivalent in our sample, because two of the three nations targeting a swift entry to the Eurozone are the Baltic states of Lithuania and Estonia. However, it is difficult to believe that a desire for early EMU entry can explain the observed differences in fiscal discipline over the sample period for the simple reason that for much of this time, EU entry, let alone EMU entry was not assured for either Estonia or Lithuania. A more plausible explanation is that Estonia and Lithuania were candidates for early entry on account of their currency boards which meant that- i) pushing for early Euro entry carried no opportunity cost in terms of lost monetary policy autonomy and ii) Public finances were already in a reasonably good shape.

In sum, the accession process did not produce any uniform effects on fiscal policy over the eight countries considered here. The "soft power" of the prospect of EU membership did not discipline fiscal policies. As with previous expansions of the EU, it is the specific numerical criteria required for EMU entry, rather than EU membership itself which appear to foster fiscal discipline.

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