Leviathan under influence: Country interactions in discretionary fiscal policy

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Abstract
We investigate the relationships between the discretionary component of national fiscal policies, for a sample of 18 OECD countries, during the 1970 – 2008 period. First, we build a measure of discretionary fiscal policy, considered as the residual component of a VAR model. More precisely, we isolate the structural part of the canonical residual. The second step provides estimates of discretionary fiscal policy interactions between countries of the sample. Our results highlight the existence of interactions between neighboring countries' public decisions, where neighborhood is defined by economic proximity as well as geography. We also find evidence of an opportunistic behavior of OECD countries' governments for the discretionary public spending.

Keywords: Fiscal policy; discretion; interactions; VAR; spatial econometrics

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1. Introduction

Are national fiscal policies under external influence? A positive answer to this question could help design and promote good practices in fiscal policy design. Even more so if such external influence does not arise through (potentially) binding institutions – such as the Stability and Growth Pact in the European Union -, peer pressure or spill-over effects. On the contrary, if countries influence one another simply by adopting the same kind of behavior, then good practices could spread by the pure virtue of imitation.

However, it first has to be proven that countries' fiscal policies influence other countries, by other ways than the ones already exhibited by the literature, which has mainly referred to the mechanisms we just quoted (fiscal rules, peer-pressure and spill-over effects).

Our aim in this paper is then to discover if those other influences exist. We deal with this issue by providing two contributions to the literature. Firstly, we define and provide, as a first step, a measure of discretionary fiscal policy for 18 OECD countries, considered in the 1970 to 2008 period. Secondly, we measure country interactions in discretionary fiscal policy. As such, we consider several weight matrices - to check if influences among countries are driven by pure chance or by a systematic pattern - and different political variables that could not be driven away by the first step and may explain why countries imitate each other. As such, our approach provides a new way to look at the problem, by cross-breeding two methodologies established in their respective fields and never combined before, despite the potential fecundity of this combination.

The literature on fiscal policy, its determinants and consequences is abundant. But only a few papers have addressed the question of the measure and determinants of reciprocal influences in discretionary fiscal policy. Giuliodori and Beetsma (2008) analyze the interdependence of fiscal policies, and in particular deficits, among European Union countries using an empirical analysis based on real-time fiscal data. They find some evidence of fiscal policy interdependence, with the fiscal plans of the large countries affecting the fiscal plans of the small countries, but not vice versa. However, they

consider fiscal plans, i.e. measures announced by European Union governments on how they will abide by the rules of the Stability and Growth Pact.

Concerning discretionary policy, Agnello and Cimadomo (2009) look at the revenue side of the government budget of the European Union countries, to investigate if discretionary measures have been implemented in reaction to economic fluctuations. They establish that legislated changes in taxes and social security contributions have responded in a strongly pro-cyclical way to the business cycle. However, not only their measure of discretionary fiscal policy differs from ours (and looks at the revenue side only, while we use a more encompassing measure), but they consider European Union countries, in contrast to our larger sample of OECD countries.

Neely and Rapach (2009) analyze co-movements in four measures of budget surpluses for 18 OECD countries for 1980–2008 with a dynamic latent factor model. They show that the world factor in national budget surpluses declines substantially in the 1980s and then rises throughout much of the 1990s to a peak in 2000, before declining again. This world factor explains a substantial portion of the variability in budget surpluses across countries they exhibit. Though they document a common trend, their modeling strategy does not allow them to check if the common trend is not in fact driven by some of their sample countries' influence. Moreover, it does not allow them to work on the determinants of the interrelations they exhibit. Here, not only do we work on discretionary fiscal policy (and not on aggregates that may be subject to other influences, such as the generalization of the welfare state, along the line of the case made by Lindbeck, 2008), but we deepen the analysis by uncovering the origins of the reciprocal national influences.

Our results show that interactions do exist among our sample countries. Interestingly, these interactions are all the more important that countries are close (closeness being defined by relative per capita GDP or by geographic distance). Another important result is that political cycles are influential, as we find evidence of an opportunistic behavior of OECD countries' governments for the discretionary public spending.

To bridge the literature's gap, we proceed in two steps. In section 2, we detail the data on which we rely, then define and compute our measure of discretionary fiscal policy. In section 3, we provide estimates of interactions among OECD countries, while Section 4 contains our conclusion and provides hints for further research.

2. Measuring discretion in fiscal policy

It is well-known that macro-fiscal data are blurred by many influences that make it difficult to extract their discretionary part. The latter part, however, is important to gauge fiscal policy's design and effectiveness because it is the sole part that is in the hands of policymakers. Consequently, this is the part for which policymakers can be made accountable. In the following, we will concentrate on policy design rather than effectiveness.

In order to proceed with extractions of discretionary fiscal stances, adjustments to interactions with other policies (from central banks and foreign policymakers' decisions) have to be implemented, and other adjustments to business-related cyclical variations are also required. In the end, it is possible to relate discretionary fiscal policy in one country to its counterpart in another country and to ask whether a causal relationship might appear, whether discretionary interactions (if they do exist) change with political closeness, with geographical borders, with good and bad times, etc., and how these interactions occur: between public expenditures, between tax policy or between both?

In the following, we describe the method we adopt to obtain adjusted fiscal data that characterize the discretionary part of gross fiscal data. The method is close to that used by Blanchard and Perotti (2002). We therefore obtain discretionary public spending and tax receipts data for 18 OECD countries between 1974 and 2008. Gross data were taken from the OECD database. Public spending data were not free of net interest: our choice was dictated by missing net-of-interest spending data in a few countries. Anyway, spending data were finally adjusted for long-run interest rates (except in Greece where only short-

run interest rates were available on the entire sample). The list of countries is the following: Australia, Austria, Belgium, Canada, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Ireland, Italy, Japan, Netherlands, Norway, Sweden and the United States.

For each country, a VAR model has been estimated. Let g, τ, π, r and y denote respectively the values of government spending, tax revenues, consumer inflation, the long-term interest rate and GDP growth. Public finance variables are expressed in percent of GDP; all variables are expressed in percent. Let $\boldsymbol{Y_t}$ and $\boldsymbol{U_t}$ denote the vector of endogenous variables and of the reduced-form residuals of the VAR, respectively. The reduced form VAR can be written:

$$\boldsymbol{Y_t = A(L)Y_{t-1} + U_t}$$

where $\boldsymbol{Y}_t = [g_t\ \tau_t\ y_t\ \pi_t\ r_t]'$ and $\boldsymbol{U_t} = [u_{g,t}\ u_{\tau,t}\ u_{y,t}\ u_{\pi,t}\ u_{r,t}]'$. $\boldsymbol{A(L)}$ is the L-year lag operator. With respect to the usual tests (Akaike information criterion, Schwartz information criterion), the optimal lag has been set equal to 3 for all countries.

However, the residuals of the canonical VAR are uninformative on the response of endogenous variables to shocks: they are only estimation errors. Hence, in order to extract the discretionary part of fiscal data – public spending and tax receipts-, one has to isolate the structural part of the respective canonical residual. Thus, while the canonical residual of, say, the tax receipt collects information on all the unexpected movements of that variable, the corresponding structural residual is obtained by eliminating all the instantaneous feedback mechanisms triggered by evolutions of the other endogenous variables.

The identification methodology consists in isolating structural residuals according to the following procedure. Following Blanchard and Perotti (2002), we begin by writing the reduced form canonical residuals of the two fiscal policy variables as linear combinations of the structural and automatic components:

$$u_{g,t} = \alpha_{g,y} u_{y,t} + \alpha_{g,\pi} u_{\pi,t} + \alpha_{g,r} u_{r,t} + e_{g,t}$$
$$u_{\tau,t} = \alpha_{\tau,y} u_{y,t} + \alpha_{\tau,\pi} u_{\pi,t} + \alpha_{\tau,r} u_{r,t} + e_{\tau,t} \qquad (1)$$

where $e_{g,t}$ and $e_{\tau,t}$ are the structural shocks to the two fiscal policy variables. The first three terms on the RHS of each equation in block (1) capture the automatic responses of fiscal policy to a change in GDP growth, in inflation and in the interest rate (the elasticities, denoted with $\alpha's$). The last term captures the structural policy component which will be interpreted as the discretionary component.

Elasticities ($\alpha_{\tau,y}, \alpha_{g,y}, \alpha_{g,\pi}, \alpha_{\tau,\pi}, \alpha_{g,r}, \alpha_{\tau,r}$) are computed as the estimation of the log change of the variable – the canonical residual on public spending or tax receipts - on the contemporary log change of either GDP, inflation, or the interest rate[1].

After this step, canonical residuals are corrected for GDP growth (the automatic stabilisers), inflation and interest rate variations, in order to extract the respective discretionary parts of spending and tax variables. We can consequently define the cyclically-adjusted (*CA*) public spending and tax receipts as their respective canonical residuals net of the effects of the other contemporaneous endogenous variables, hence:

$$u_{g,t}^{CA} \equiv u_{g,t} - (\alpha_{g,y} u_{y,t} + \alpha_{g,\pi} u_{\pi,t} + \alpha_{g,r} u_{r,t}) = e_{g,t}$$
$$u_{\tau,t}^{CA} \equiv u_{\tau,t} - (\alpha_{\tau,y} u_{y,t} + \alpha_{\tau,\pi} u_{\pi,t} + \alpha_{\tau,r} u_{r,t}) = e_{\tau,t} \qquad (2)$$

As a consequence, without any theoretical priors, estimations errors of the canonical VAR are adjusted for changes in the macroeconomic environment. The ensuing structural component can be interpreted as discretionary because it is neither related to the other endogenous variables nor to their unexpected variations.

Though the method owes to Blanchard and Perotti (2002), the present elaboration does not completely endorse their identification strategy. Beyond the introduction of automatic

[1] Two other computation methodologies could have been implemented. First, taking all the taxes into account (from income to social contributions), one could compute a weighted-average of tax elasticities where weights would depend on the respective contribution of taxes to tax revenues. Second, like in Blanchard and Perotti, (2002), overall tax elasticity to GDP could be a weighted average of the product of the elasticity of each tax to its own base and the elasticity of its tax base to GDP. The methodology which was preferred in this paper is the simplest to perform uniformly for a large sample of countries.

responses to macroeconomic shocks in the adjusted residual of public spending and tax receipts, Blanchard and Perotti (2002) adjusted public spending (tax receipts) for the instantaneous interaction with tax receipts (public spending). Nevertheless, their identification methodology required to fix to zero one of these two potential interactions: identifying one structural residual – e.g. the public spending one - as the canonical residual – on public spending -, it is possible to regress the second canonical residual – on tax receipts – on the first one, and identifying the new residual as the second structural residual – on tax receipts -. Such an assumption however requires to take step in the debate between two competing theories: the "Spend & Tax" and the "Tax & Spend" public finance frameworks (see Musgrave, 1966), depending on which variable must be constrained by the other when designing policy action. Within the VAR model, a first case arises where public spending is left free to affect taxes but not the opposite. In a second case, tax receipts are left free to affect public spending but not the opposite. There are no a priori reasons to consider that one of these frameworks fits better than the other for all countries all the time. In escaping this identification issue at this stage, we also escape an unresolved discussion on the best fiscal framework for a sample of 18 countries over 40 years. Nevertheless, we cannot escape this issue completely, as we fix all the contemporaneous interactions to zero, but we only do so before turning to the analysis of the strategic interactions, which we investigate using with spatial econometric method.

It must also be acknowledged that the method introduces some new elements in comparison with Blanchard and Perotti (2002). As we introduce the inflation rate as well as the interest rates (as in Perotti, 2004), we can adjust fiscal variables for a wide array of macroeconomic shocks. Under the assumption that long-term interest rates are related to short-term rates according to the yield curve, the adjustment of fiscal data can be interpreted as involving correction for changes in monetary policy. And, for what concerns the adjustment for foreign fiscal policies, the spatial econometric methods we implement below is a novelty in the literature on discretionary components of fiscal policy.

The values of elasticities are reported in **table 1**. Expected signs are the following. Public spending (on GDP) should decrease contemporaneously with GDP, and should increase contemporaneously with long term interest rates (provided public debt is mostly financed at floating rates), but the sign of the elasticity of public spending (on GDP) towards inflation depends on the indexation of public spending on actual inflation. The sign of the elasticity of tax receipts (on GDP) towards GDP depends on the tax structure: the more progressive the tax system, the larger (and positive) the elasticity; if taxes are lump-sum or exemptions are numerous, the elasticity can be negative: higher growth means lower tax receipts in proportion of GDP. Tax receipts (on GDP) should respond positively, provided net interests are charged with taxes; however, the sign of the related elasticity could as well be indeterminate, as a higher long term interest rate also reduces the values of bonds and stocks; consequently, reduced wealth can lead to lower tax receipts. Finally, the elasticity of tax receipts (on GDP) towards inflation depends on the indexation procedure of tax scales.

Reported elasticities give a very diverse picture for the different countries involved under review. It is noteworthy that the sole elasticity which sign is clearly determinate, $\alpha_{g,y}$, is always negative, as expected. Other elasticities testify for variations between countries in terms of degrees of indexation and tax structures.

Given the results obtained in this first step, we now turn to the investigation of the potential spatial interactions between our sample countries.

Table 1. Elasticities

	$\alpha_{g,y}$	$\alpha_{g,r}$	$\alpha_{g,\pi}$	$\alpha_{\tau,y}$	$\alpha_{\tau,r}$	$\alpha_{\tau,\pi}$
Australia	-0.03	0.05	0.0001	0.004	0.03	0.002
Austria	-0.04	-0.03	-0.02	-0.03	0.005	0.002
Belgium	-0.04	-0.005	0.003	-0.02	-0.03	-0.003
Canada	-0.04	-0.004	0.00003	-0.004	0.05	0.004
Germany	-0.03	-0.03	-0.009	-0.003	-0.02	-0.004
Denmark	-0.02	0.02	-0.004	-0.005	-0.02	0.001
Spain	-0.08	0.04	-0.03	-0.03	0.0006	-0.04
Finland	-0.03	-0.03	-0.03	-0.01	0.10	0.0003
France	-0.02	-0.007	-0.002	-0.008	0.002	-0.002
UK	-0.05	0.09	0.008	-0.03	0.08	0.02
Greece	-0.09	0.02	-0.002	-0.07	0.004	-0.005
Ireland	-0.04	0.12	-0.007	-0.04	0.03	-0.007
Italy	-0.06	-0.0003	-0.02	-0.02	0.002	-0.03
Japan	-0.02	-0.02	-0.004	0.008	0.03	0.003
Nld.	-0.04	0.009	0.0005	-0.02	-0.02	0.004
Norway	-0.04	0.04	-0.01	0.02	0.06	0.008
Sweden	-0.01	0.04	-0.002	-0.007	0.002	-0.009
USA	-0.04	-0.04	-0.01	0.0005	0.06	0.02

Sources: OECD, authors' calculations.

3. Assessing fiscal policy interactions between OECD countries

Traditionally, empirical models of public policies relate public spending or tax receipts to variables reflecting socio-economic and political characteristics of the country (or region). This amounts to assuming that fiscal policies are only influenced by observed national features. Under a linear specification, such a view leads one to estimate the following model:

$$Y_{i,t} = X_{i,t}\beta + \gamma_i + \gamma_t + \varepsilon_{i,t} \qquad (3)$$

where Y are the per capita discretionary expenditures (or tax receipts) of the N countries, X is the set of exogenous national socio-economic characteristics, α_i is a country fixed effect, α_t is a period fixed effect and ε, a vector of i.i.d error terms.

However, strategic interactions among governments have been one of the central issues in theoretical public finance for the two last decades at least (see the survey by Wilson, 1999). As a consequence, spatial econometric techniques have recently been used to estimate inter-governmental interaction models (see Brueckner, 2003; Revelli, 2005). Building on the spatial econometric method developed by Anselin (1988), the model in equation (3) is then augmented to include the spatially lagged dependent variable:

$$Y_{i,t} = \rho WY_{j,t} + X_{i,t}\beta + \lambda_i + \lambda_t + \varepsilon_{i,t} \qquad (4)$$

In this spatially lagged model, W is a weight matrix that assigns « neighbors » to each country; the spatial lagged variable WY is a weighted average of all other countries' fiscal policy, ρ being the spatial autoregressive coefficient, which gives the sign and the intensity of the impact of « neighboring » fiscal policies on one country's public decision.

A negative ρ would imply that expenditure spillovers explain the spatial correlation between countries decisions (Brueckner, 2003; Revelli, 2005). On the contrary, when ρ is positive, a form of imitation (mimicking, i.e. fiscal competition or yardstick competition),

may explain the observed interaction. For example, in the presence of tax base mobility, the fiscal policy of a government may affect the budget constraints of other governments, through capital migration (Wilson, 1999). This is the fiscal competition for mobile resources assumption. In the yardstick competition theory, information on the fiscal policy of the neighbor governments acts as a yardstick for the electorate in any given country. As a result, any country's citizens will compare the performance of their own policymakers to the neighboring ones. This encourages mimicking behavior from governments, as they do not want to be stigmatized (Salmon, 1987; Besley and Case, 1995).

Finally, a spatial auto-correlation pattern may simply reflect common shocks affecting public policy or the omission of variables (such as country characteristics) that are spatially dependent (Manski, 1993). In this case, we have a spatial autoregressive process in the error term, or a spatial error model:

$$Y_{i,t} = X_{i,t}\beta + \gamma_i + \lambda_t + \varepsilon_{i,t} \quad and \quad \varepsilon_{i,t} = \gamma W \varepsilon_{j,t} + m_{i,t} \tag{5}$$

where γ is the spatial correlation coefficient, W a weight matrix and m a vector of i.i.d. error terms.

Turning to estimation techniques, Anselin (1988) shows that, due to an endogeneity bias, OLS estimators are inconsistent when estimating spatial lag and spatial error models. However, instrumental variables (IV) or maximum likelihood (ML) estimation methods lead to consistent estimators (Brueckner, 2003; Elhorst, 2003).

The weight matrix, denoted *W*, defines the structure of the interaction, i.e. the « neighborhood » among countries. Since the a priori definition of interaction may arbitrarily influence the estimations results, we will test the robustness of our fiscal policy interaction model by using two different criteria, i.e. two different weight matrices.

Traditionally, to test fiscal competition, yardstick competition or spillover effects in which neighborhood is a central feature, most empirical papers use weight matrices based on geographical distance or simple contiguity. Following the relevant empirical literature, we have chosen a common geographical definition of neighborhood based on the Euclidean distance between countries (d_{ij}).[2] This scheme is given by the weight matrix W^d and imposes a smooth distance decay with weights w_{ij}, given by $1/d_{ij}$ when i is different from j (otherwise $w_{ij} = 0$).

A second indicator of « neighborhood »[3] is an economic one, using the GDP per capita of every country. Weight matrix W^{GDP} then assigns a higher weight to any country j which is close to country i in terms of GDP per capita. We then define $w_{ij}=1/|GDP_i-GDP_j|$ if i is different from j, 0 otherwise.

We also consider the case where countries follow an economic leader, the latter being defined by her GDP per capita. The matrix W^{GDPL} assigns higher weights to countries j with higher GDP per capita: $w_{ij} = GDP_j / \sum_j GDP_j$ if i is different from j, and 0 otherwise.

We finally consider the case where countries follow the same economic leader based on GDP weighted by distance. The matrix W^{GDPLD} assigns higher weights to close countries j with higher GDP per capita: $w_{ij} = GDP_j / d_{ij} \sum_j GDP_j$ if i differs from j, 0 otherwise.

As is now conventional in the empirical spatial literature, all these weight matrices are standardized so that the elements of each row sum to 1. Besides, we also include in our model some control variables reflecting the impact of differences in socio-economic and political factors grouped in the vector X in (3). Following the empirical literature, we

[2] Geodesic distances are calculated following the great circle formula, which uses the geographic coordinates of the capital cities (CEPII data base).

[3] See Case et al. (1993) and Baicker (2005) for a discussion on these matrices, defining similarities between countries in terms of income, population, etc.

include some explanatory variables that might affect fiscal policies. It has to be noted that the economic resource variables such as GDP per capita, which can be used as a measure of country income, have been removed since we address the determinants of discretionary expenditures.

Our data set includes the above 18 OECD countries, considered over a period of 32 years (1975-2006). Years 1974, 2007 and 2008 were removed due to missing values in some explanatory variables. Descriptive statistics are shown in Table 2 in Appendix.

The first data set of control variables is composed of socio-demographic variables, such as unemployment rate, population density, and shares of under 14 (young people) and over 65 year-old in the population (old people). All these variables are available from the AMECO database (European Commission, Economic and Financial affairs). They are expected to exhibit a positive sign as they might reflect higher needs of the population they designate. The variable (old people) is designed to capture the political demand for social services by the older members of the electorate. This segment of the population constitutes an interest group with growing political power, and (old people) is expected to be positively related to government size.

A second group of control variables includes political data collected from the Database of Political Institutions (DPI, see Beck et al., 2001). *Left* is a dummy variable for the country partisan affiliation, which takes the value 1 if the chief executive of country *i* in year *t* belongs to a left-wing party, and 0 otherwise. We also introduce dummies for the electoral cycle. *Election year (t)* is a dummy variable, which takes the value 1 if there is a legislative election in year *t*. *Election year t-1* (resp. *t+1*) is a dummy variable, which takes the value 1 the year before (resp. after) the legislative election, and zero otherwise. If there is a trend for an opportunistic political business cycle during the legislative legislature, we should observe higher discretionary public spending and lower tax receipts the year before the election or the election year.

As 13 countries of our sample are members of the European Union, the last group of explanatory variables deals with EU features (source: European Commission). We introduce three dummies respectively for the EU membership, for the Eurozone membership and for the respect of the Stability and Growth Pact (SGP). EU membership and Eurozone membership take the value 1 if the country *i* in year *t* belongs respectively to the EU and to the Eurozone, zero otherwise. SGP takes the value 1 if the EU country *i*'s deficit does not respect the SGP in year *t*, and zero otherwise. We expect a negative sign for this parameter as the SGP should appear as a constraint for EU countries experimenting high deficits.

Our estimation strategy is as follows. We first estimate (3) using OLS without taking into account the potential influence of the fiscal policy set by other countries. Because serial correlation in panel data models biases the standard errors and causes the results to be less efficient, we performed the Wooldridge test (2002) to identify potential serial correlation in the idiosyncratic error term. This test does not detect the presence of such correlation. We then run the appropriate spatial tests based on the Lagrange multiplier tests in their robust version, which can detect the presence of spatial lag dependence and spatial error dependence (see Anselin et al., 1996). We also use them in their robust version which means that the robust LM-lag tests for lag dependency in presence of missing error and the robust LM-ERR tests for error dependence in presence of missing lag. If the LM test for spatial lag is more significant than the LM test for spatial error, and the robust LM test for spatial lag is significant but the robust LM test for spatial error is not, then the appropriate model is the spatial lag model (Anselin and Florax, 1995).[4] We find spatial lag dependency for all the weighting schemes we consider.[5]

We then estimate the full model (4) taking into account the influence of the other countries' fiscal policies (weighted spending decisions or tax receipts) using the maximum likelihood (ML) method. As macroeconomic shocks that could be common to

[4] Conversely, if the LM test for spatial error is more significant than the LM test for spatial lag and the robust LM test for spatial error is significant but the robust LM test for spatial lag is not, then the appropriate specification is the spatial error model.

[5] LM tests estimation results are not shown in this paper, but are available upon request from the authors..

all countries have already been taken into account in the first step, we do not need to include time dummies. Estimation results for discretionary spending decisions and tax receipts are shown in table 3.

As estimates reported in table 3 indicate, we find both a significant and positive sign for the coefficient associated with the "neighboring" OECD countries' decisions in discretionary public expenditures and tax receipts. Moreover, the estimation results confirm the existence of fiscal policy interactions for both weighting schemes, either based on geographical proximity or on economic closeness. This implies that (geographically or economically) close countries tend to imitate each other, even when they set their discretionary fiscal policy.

Result 1: There are some discretionary fiscal policy interactions between OECD countries. Geographically and economically close countries tend to imitate each other when they set their discretionary public spending or tax receipts.

Let us now turn to the estimation results associated with the other explanatory variables. Although no parameter associated with the socio-economic or political explanatory variables is significant for tax receipts (a logical result, and a further proof of the fact that our measure of discretionary fiscal policy really measures discretion, and not, e.g. long-run trends), two important results for public spending can be put to the fore.

Table 3. Estimation results

Dependent variable	Spending				Tax receipts			
Weight matrix	W^d	W^{GDP}	WGDPL	WGDPLd	W^d	W^{GDP}	WGDPL	WGDPLd
W*Y	0.33***	0.27***	0.29***	0.34***	0.35***	0.25***	0.41***	0.36***
	(4.57)	*(4.67)*	*(4.60)*	*(5.81)*	*(4.85)*	*(4.33)*	*(7.66)*	(6.23)
Unemployment rate	0.02*	0.02*	0.02*	0.02	-0.002	-0.002	-0.002	-0.001
	(1.65)	*(1.69)*	*(1.64)*	*(1.52)*	*(-0.16)*	*(-0.16)*	*(-0.15)*	(-0.13)
Young people	0.02	0.02	0.03	0.03	-0.01	-0.01	-0.01	-0.01
	(1.04)	*(1.04)*	*(1.12)*	*(1.14)*	*(-0.44)*	*(-0.57)*	*(-0.53)*	(-0.55)
Old people	0.01	0.01	0.01	0.01	-0.02	-0.02	-0.02	-0.02
	(0.30)	*(0.34)*	*(0.42)*	*(0.40)*	*(-0.51)*	*(-0.61)*	*(-0.68)*	(-0.68)
Population density	0.007	0.008	0.008	0.007	0.003	0.002	0.002	0.002
	(1.32)	*(1.44)*	*(1.43)*	*(1.28)*	*(0.54)*	*(0.48)*	*(0.40)*	(0.45)
Election year (t)	0.24***	0.24***	0.24***	0.25***	-0.10	-0.08	-0.09	-0.09
	(2.92)	*(2.93)*	*(2.90)*	*(3.06)*	*(-1.23)*	*(-1.02)*	*(-1.15)*	(-1.18)
Election year (t+1)	-0.006	0.009	-0.01	-0.005	-0.007	0.006	-0.001	-0.0006
	('-0.07)	*(0.12)*	*(-0.21)*	*(-0.07)*	*(-0.09)*	*(0.08)*	*(-0.01)*	(-0.008)
Election year (t-1)	0.12	0.12	0.10	0.12*	0.06	0.07	0.07	0.06
	(1.52)	*(1.61)*	*(1.29)*	*(1.65)*	*(0.83)*	*(0.90)*	*(0.94)*	(0.84)
Left	-0.15**	-0.16**	-0.16**	-0.15**	-0.07	-0.07	-0.07	-0.08
	(-2.30)	*(-2.31)*	*(-2.29)*	*(-2.23)*	*(-1.14)*	*(-1.12)*	*(-1.14)*	(-1.22)
EU membership	0.10	0.14	0.13	0.11	-0.01	-0.02	-0.05	-0.04
	(0.34)	*(0.99)*	*(0.89)*	*(0.80)*	*(-0.12)*	*(-0.15)*	*(-0.36)*	(-0.29)
Eurozone membership	0.04	0.03	0.03	0.04	0.07	0.09	0.11	0.11
	(0.34)	*(0.24)*	*(0.30)*	*(0.32)*	*(0.60)*	*(0.75)*	*(0.98)*	(1.00)
SGP	-0.003	-0.02	-0.01	-0.003	-0.17	-0.21	-0.16	-0.17
	(-0.03)	*(-0.19)*	*(-0.10)*	*(-0.02)*	*(-1.28)*	*(-1.54)*	(-1.24)	(-1.26)
Log likelihood	-546.76	-545.88	-549.96	-545.12	-538.86	-541.38	-534.74	-536.69

Notes: 576 observations. Spatial fixed effects are included.

** significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level*

Firstly, dummies associated with legislative election years indicate an opportunistic use (meaning, an increase) of discretionary public spending during the election year. This gives strong evidence of a political budget cycle for discretionary public expenditures. This result may seem to contradict Brender and Drazen (2005, 2007), who find a political deficit cycle in a large cross-section of 74 countries, and show that this result is driven by the experience of “new democracies”, while our sample contains "mature" ones. However, though it may seem to rehabilitate opportunistic cycles in older democracies, it has to be remembered that our measure of discretionary fiscal policy is very different from the one the latter authors use/ Moreover, our measure does not allow to differentiate between measures that may be more “visible” for voters than others, and thus for measures that may be more or less efficient, from the incumbent's point of view (see Drazen and Eslava, forthcoming).

Result 2: There is evidence of an opportunistic behavior of OECD countries' governments for the discretionary public spending.

Secondly, we find evidence of ideological effects on the discretionary spending decisions, as the coefficient of the partisan affiliation (Left) for the chief executive is significant and negative. Left-wing chief executives seem to set lower discretionary public expenditures than right-wing chief executives. This result is not as surprising as it seems if a strategic use of debt exists, à la Persson and Svensson (1989), a feature our results tend to highlight and which could not have been exhibited before.

Result 3: Left-wing chief executives set lower discretionary public spending.

The remaining explanatory variables based on socio-demographic features (unemployment rate, young people, old people, population density) and on European

characteristics (EU and Eurozone memberships and SGP dummies) exhibit the expected sign though they never appear as significant. Once again, this confirms that only the discretionary components of fiscal policy are present in our dependent variables (i.e., the first step has rightly purged the fiscal data and that our measure really measures discretionary impulses).

Finally, since 13 countries of our sample are members of the European Union, we estimate the same model on a subsample of European countries. The estimation results, shown in Table 4 in Appendix, confirm the robustness of our results.

4. Conclusion

In this paper, we investigate the relationships between the discretionary component of fiscal policies, for a sample of 18 OECD countries, during the 1974 – 2008 period. In a first step, we build an indicator of discretionary fiscal policy, considered as the residual component of a structural VAR model.

The second step provides estimates of discretionary fiscal policy interactions between these OECD countries using spatial econometrics. Our results confirm the existence of interactions between neighboring countries' public decisions, where neighborhood is defined by economic proximity as well as by geography. We also find evidence of an opportunistic behavior of OECD countries' governments for the discretionary public spending. Finally, left-wing chief executives seem to set lower discretionary public expenditures than right-wing chief executives, which could reveal the presence of a strategic use of deficits by right-wing incumbents.

By using the VAR technique and spatial econometrics, we show that the discretionary part of a national fiscal policy is strongly influenced by “close” countries' decisions. However, this mimicking behavior may only tame the Leviathan if he fears the tax base mobility.

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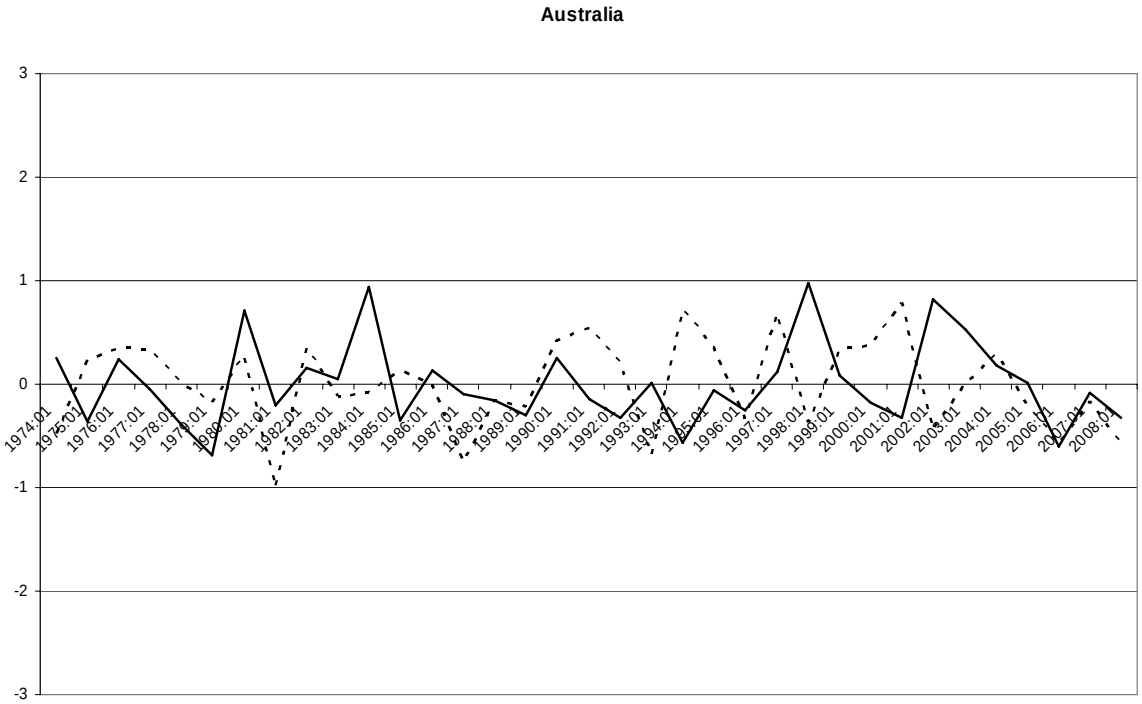
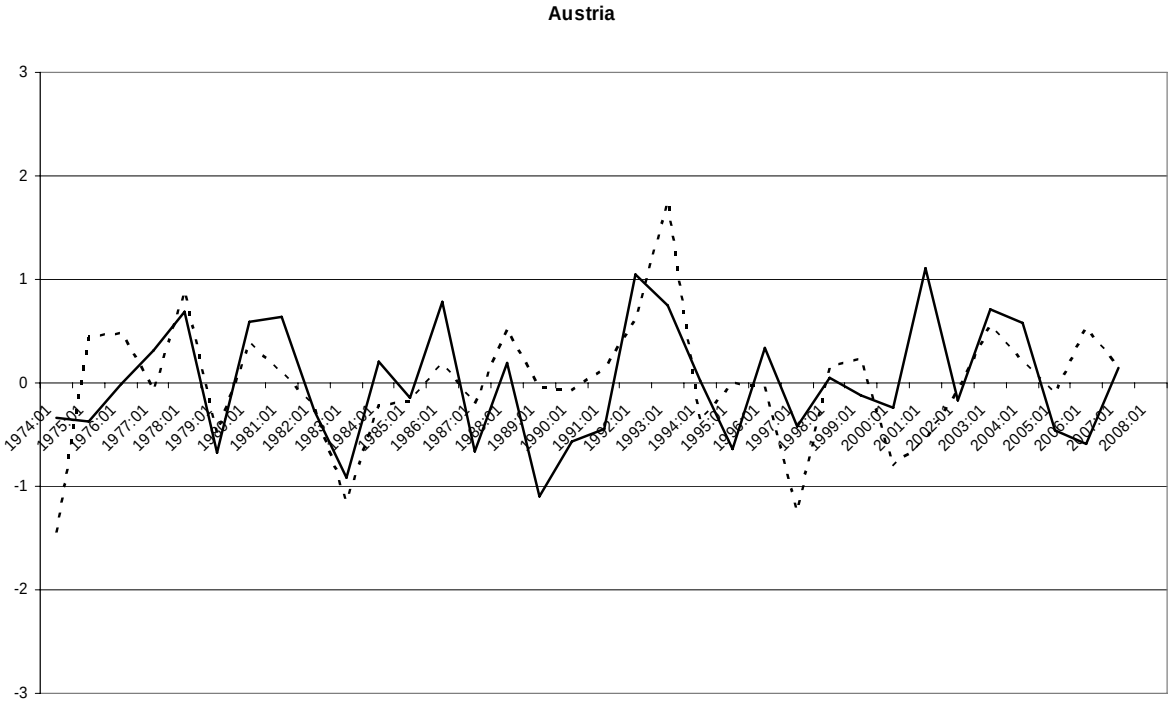
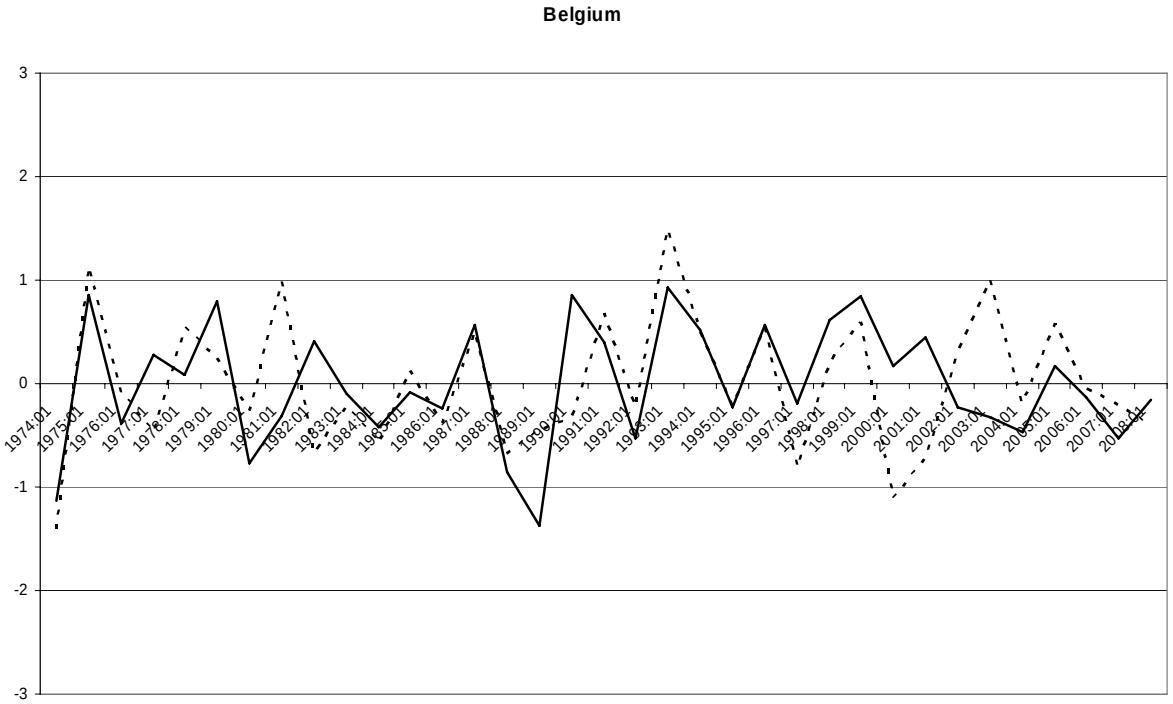
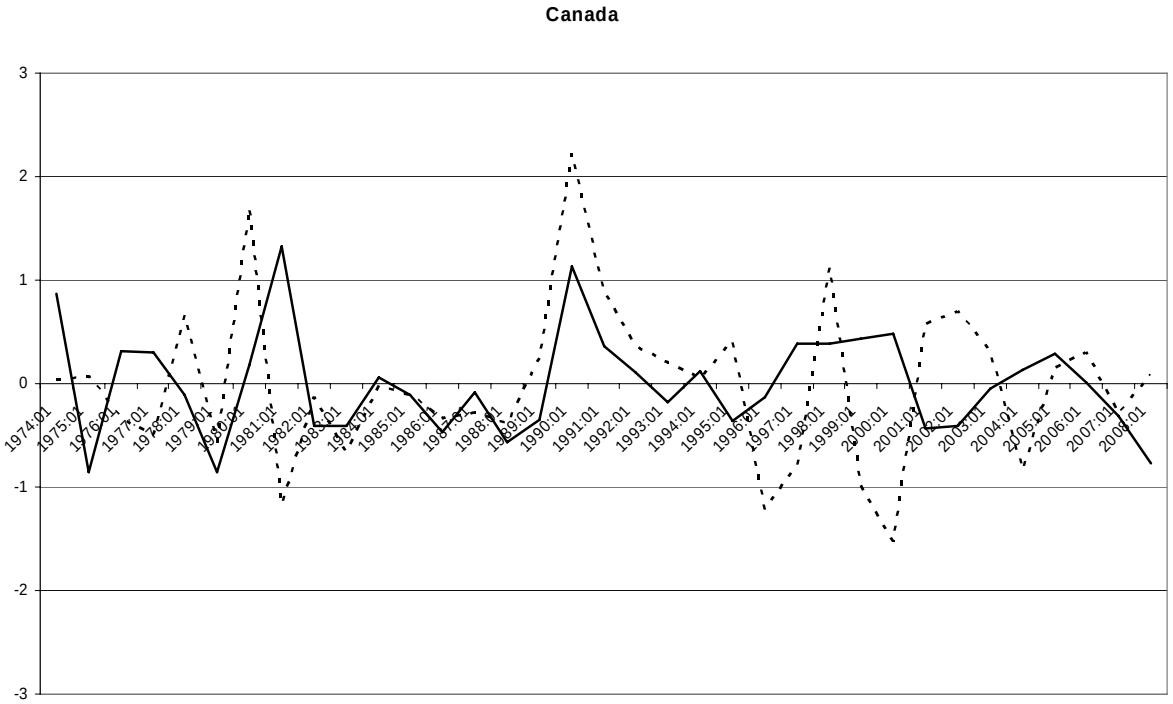
Appendix. Fiscal stances





Bold line: discretionary part of tax receipts; dotted bold line: discretionary part of public spending





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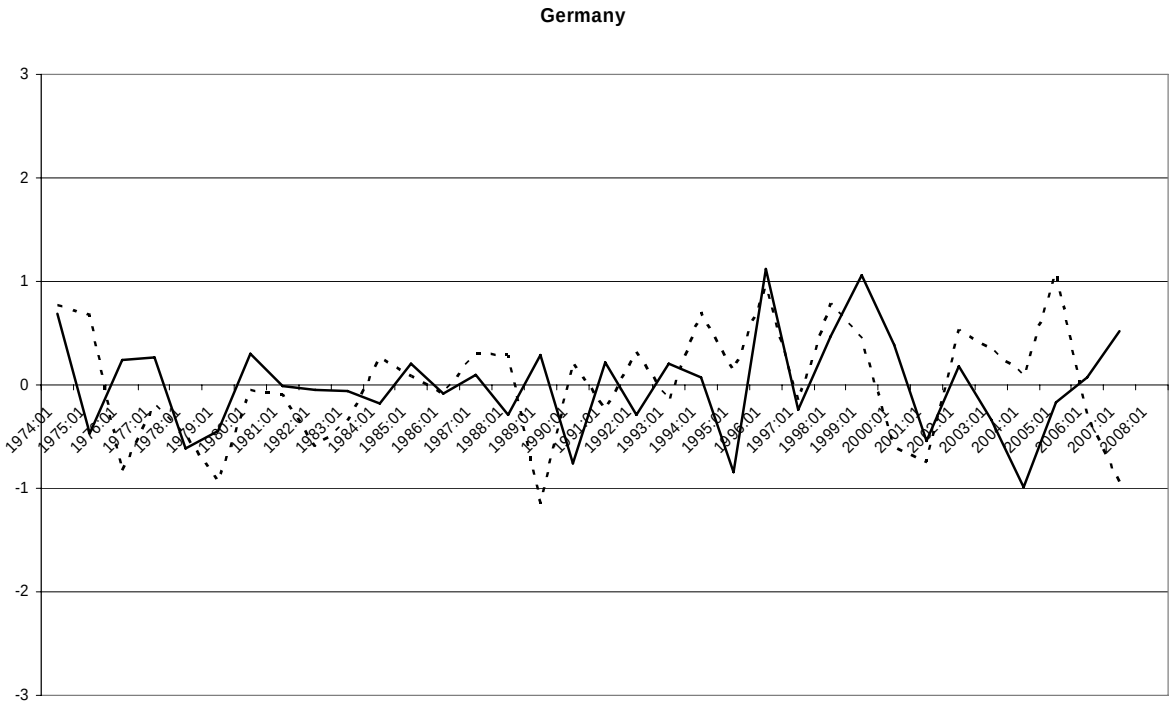

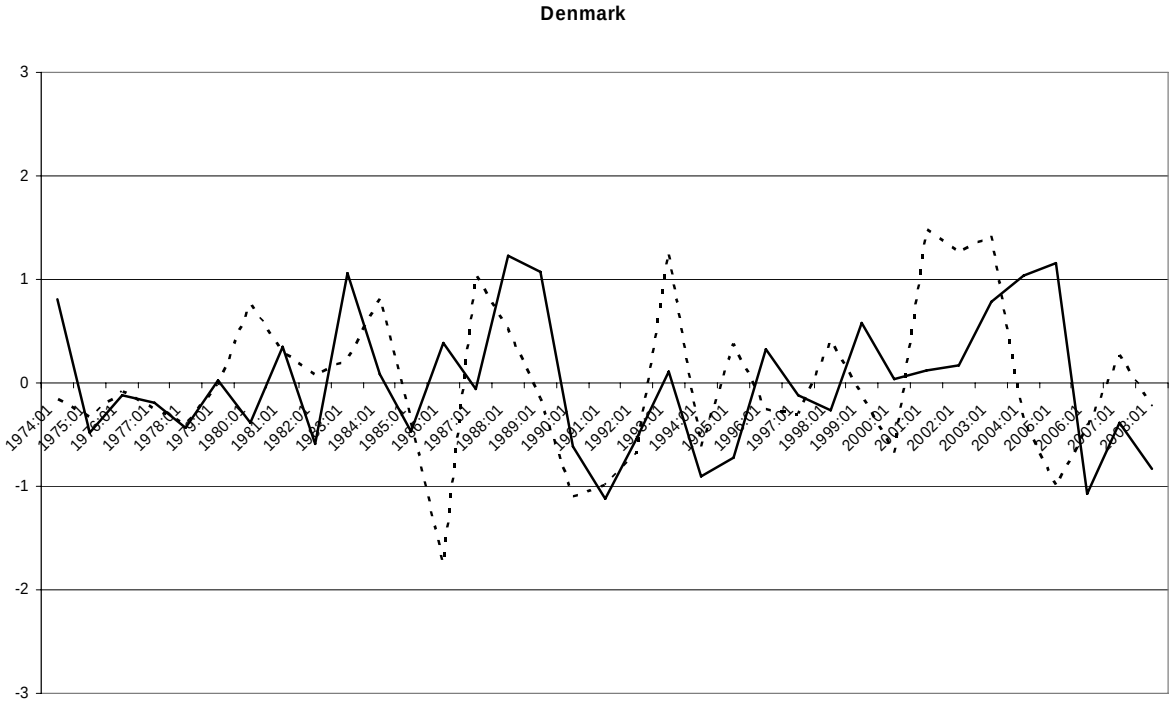

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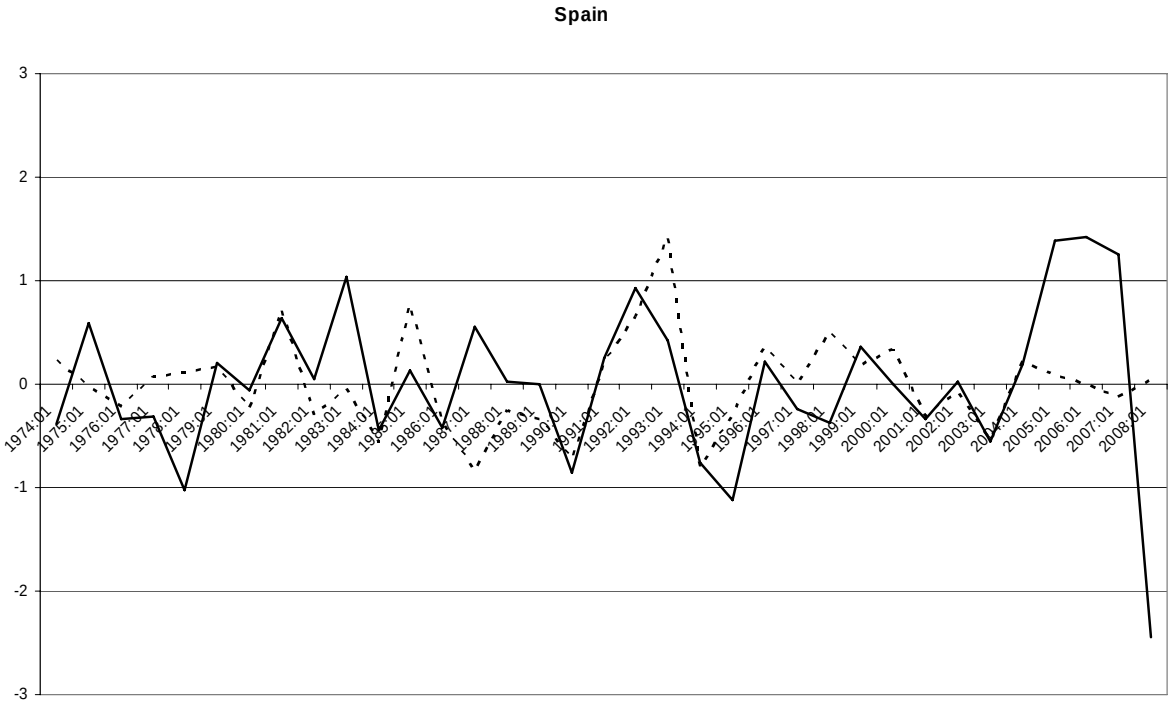

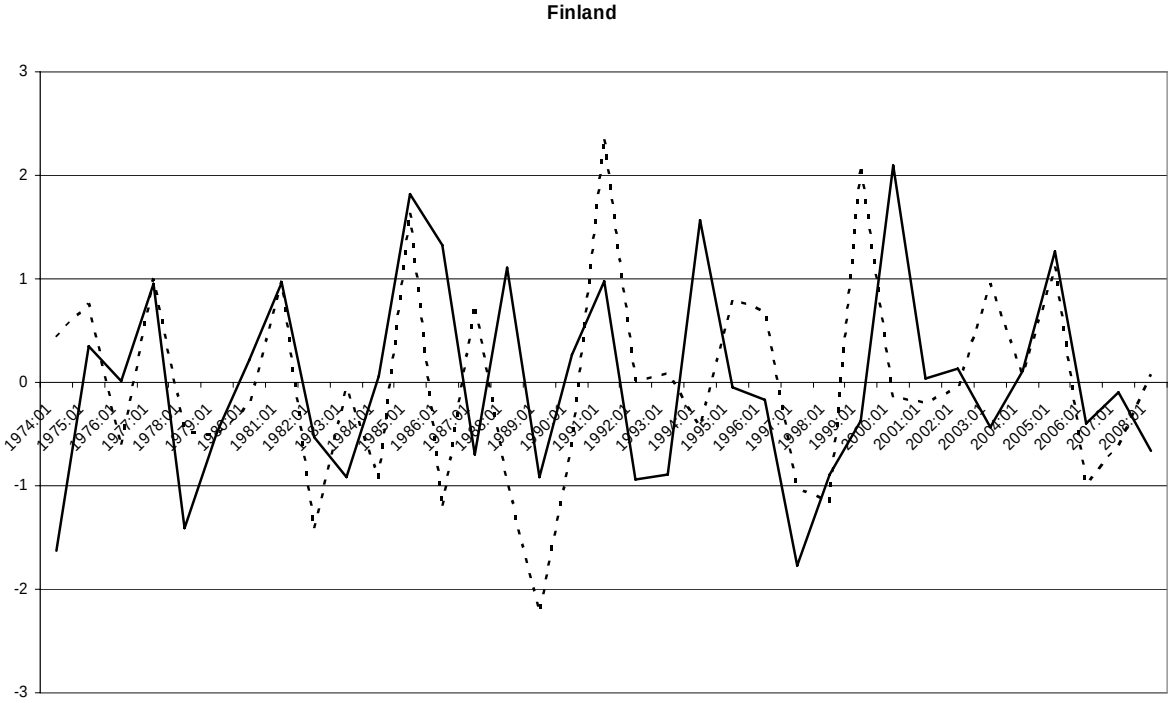

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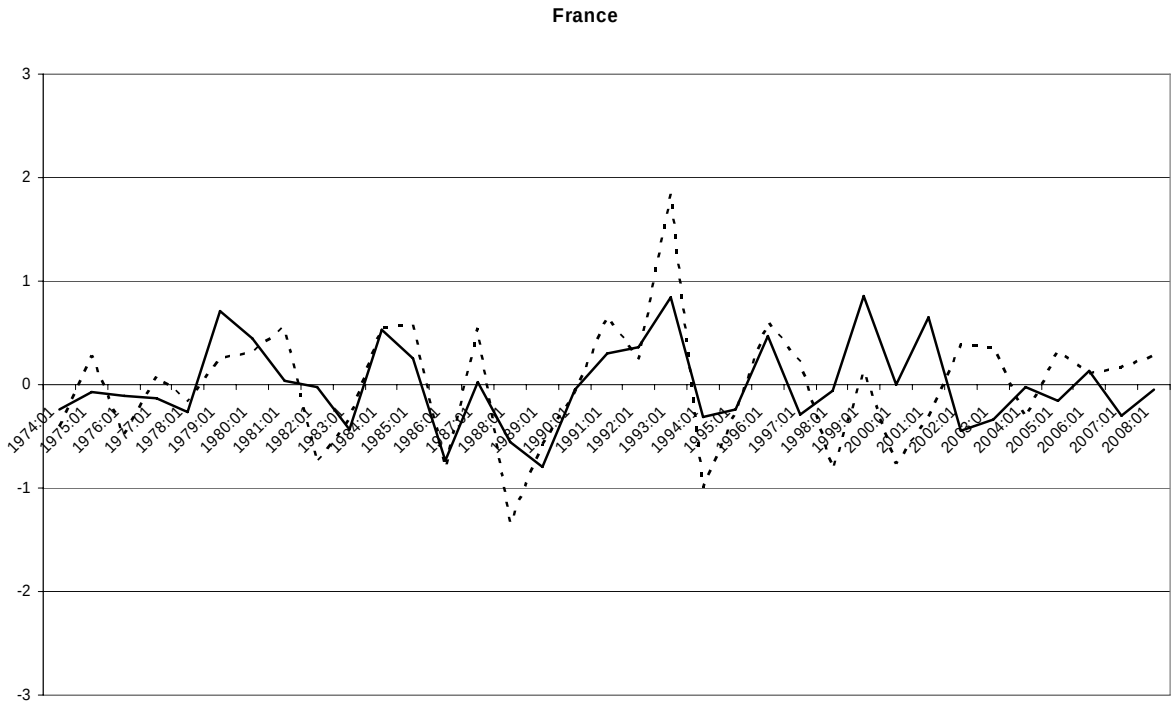

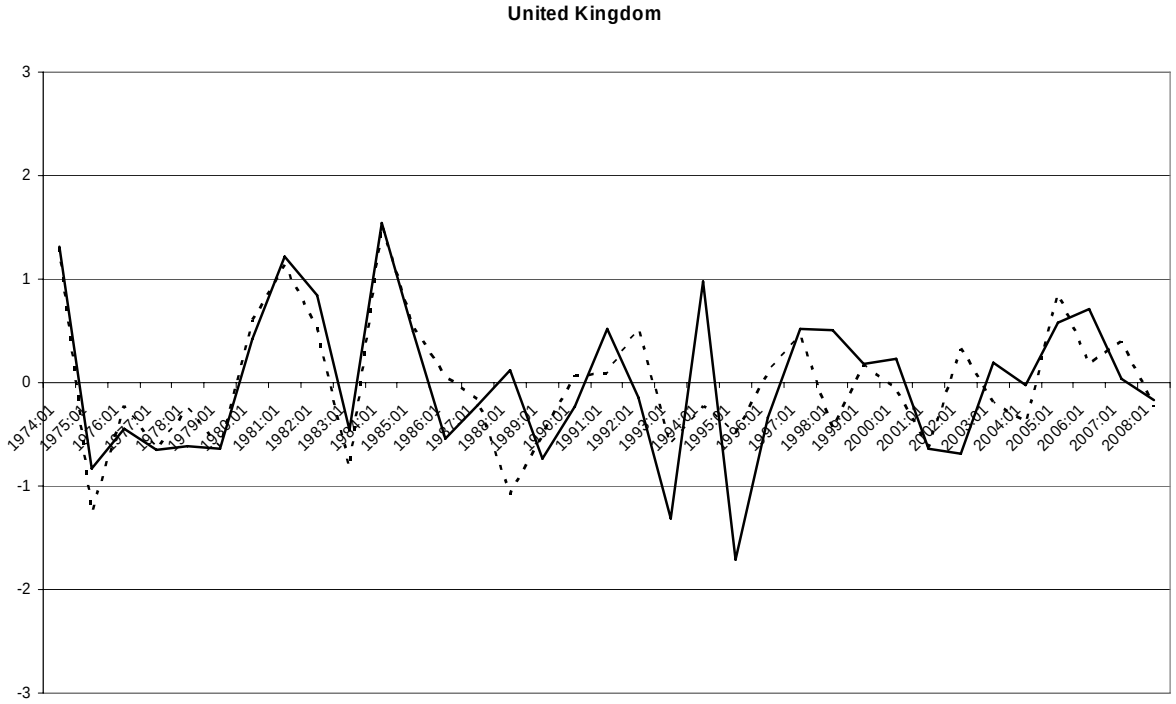

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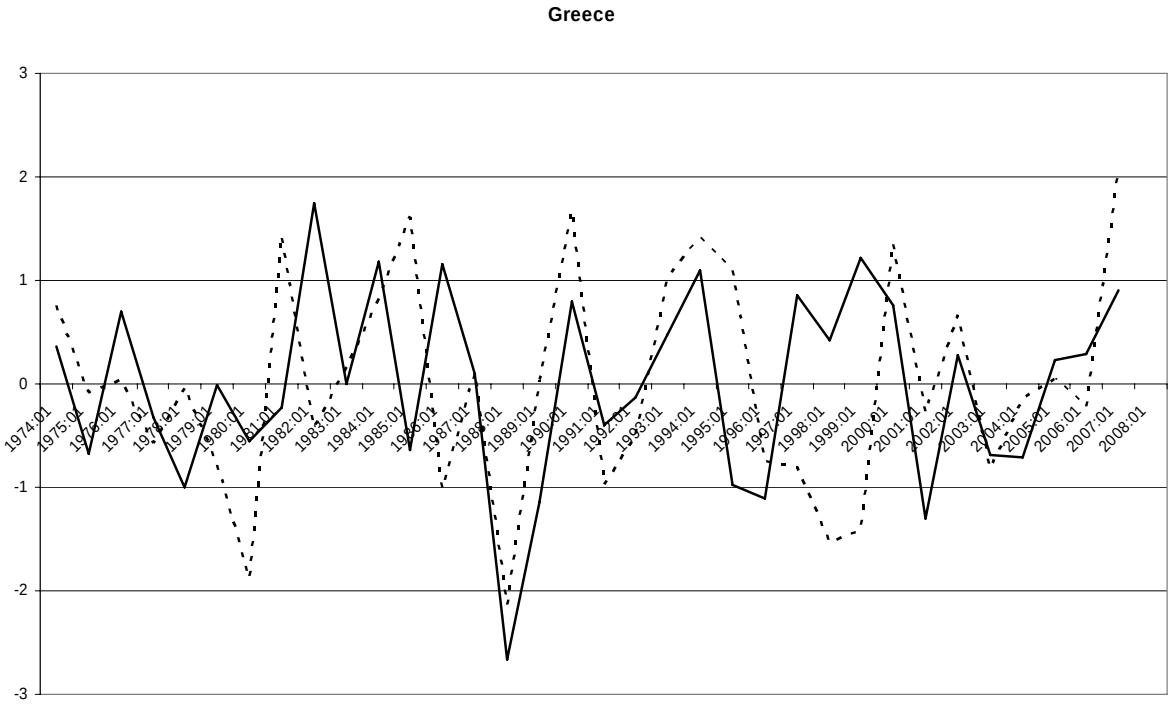

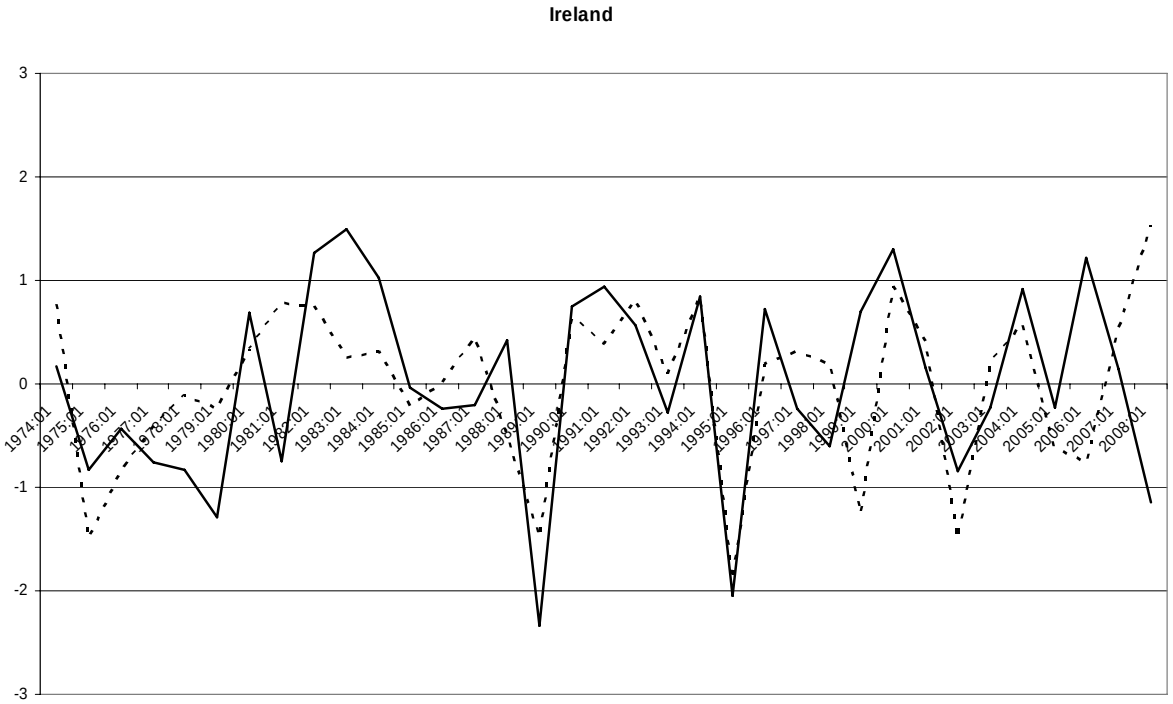

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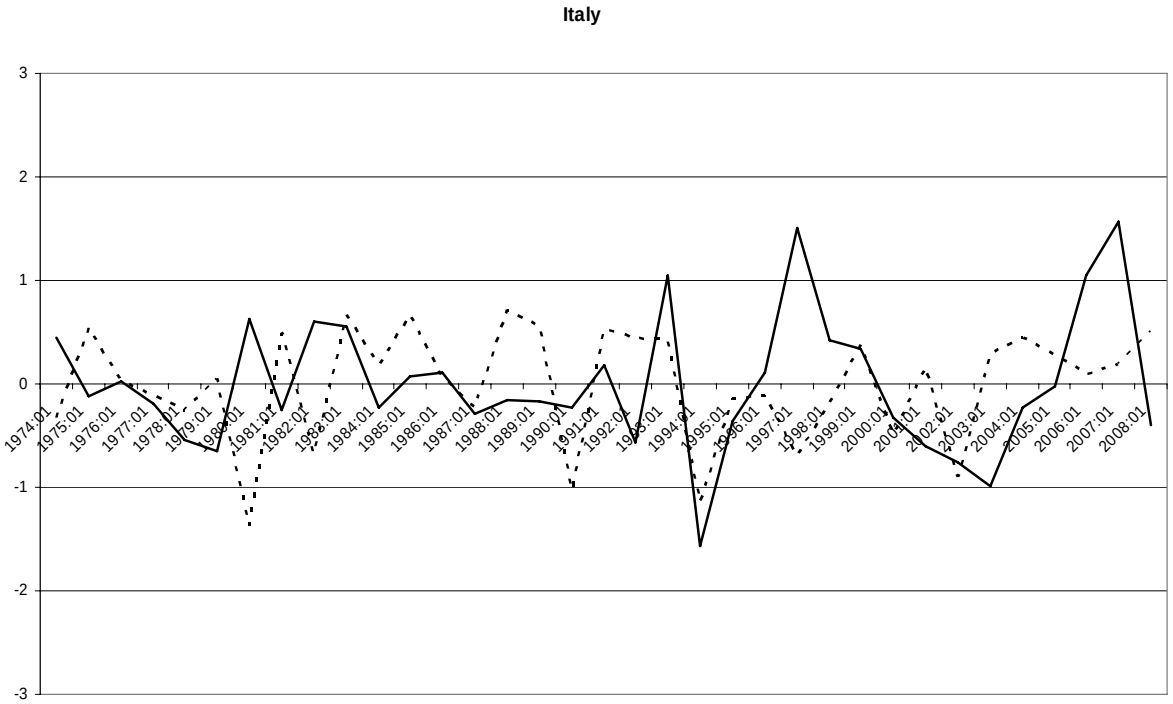

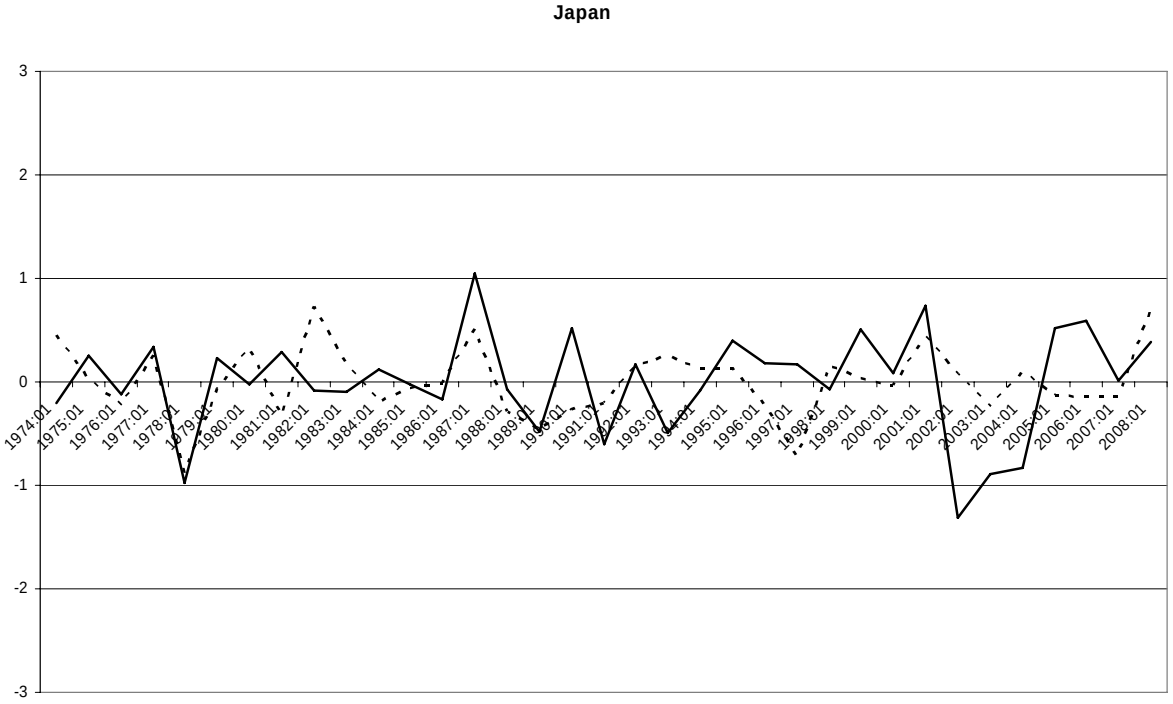

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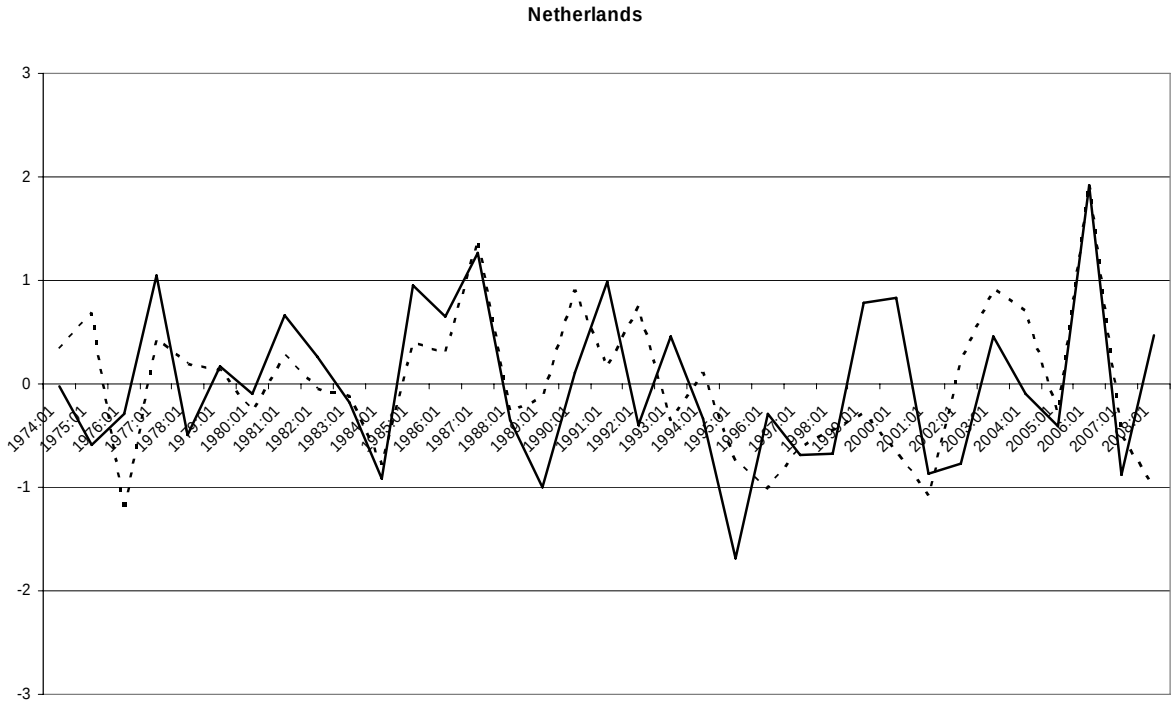

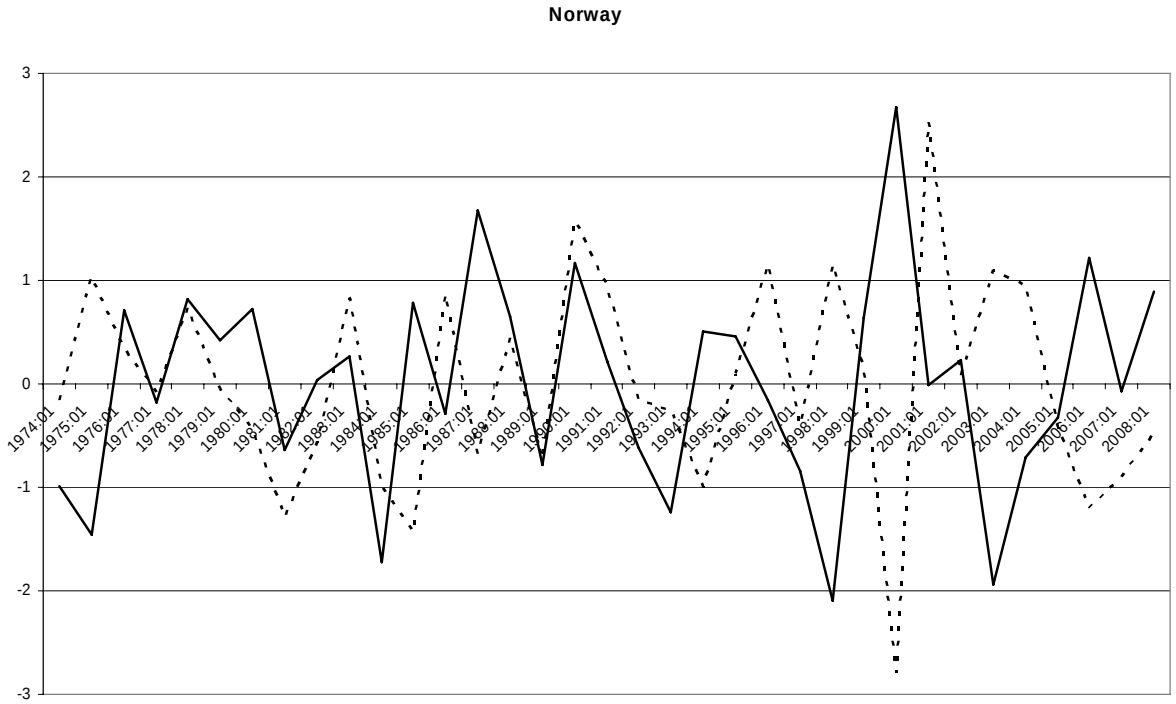

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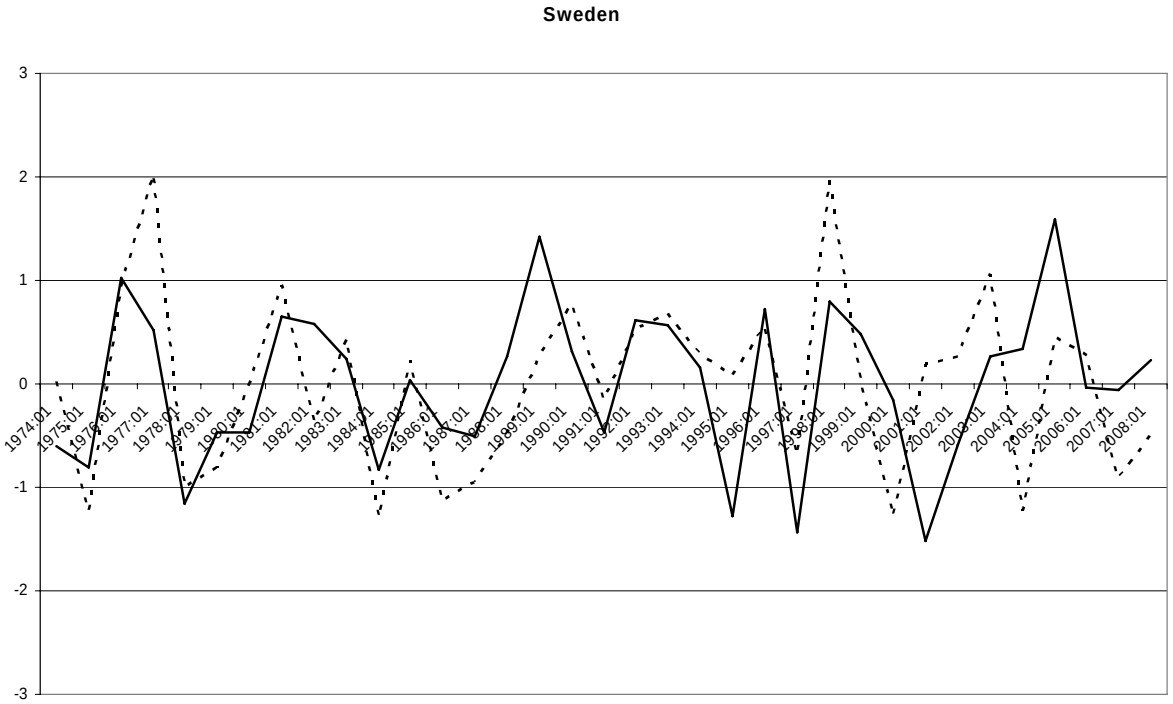

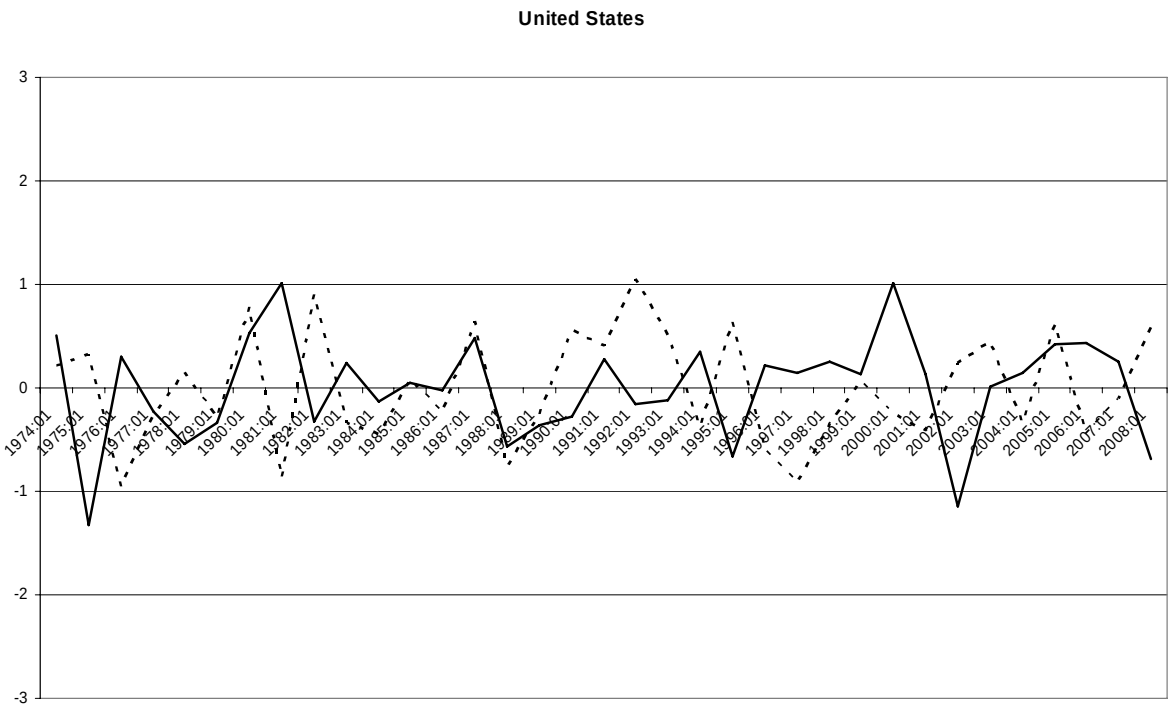

Bold line: discretionary part of tax receipts; dotted bold line: discretionary part of public spending

Table 2: Descriptive statistics

	Sources	Mean	Std Dev.	Min	Max
Unemployment rate	AMECO	7.05	3.46	1.10	19.50
Young people	AMECO	19.88	3.25	13.74	30.90
Old people	AMECO	13.99	2.35	7.91	20.03
Population density	AMECO	83.03	78.96	1.15	265.50
Election year	DPI				
Left	DPI				
EU membership	European Commission				
Eurozone membership	European Commission				
SGP	European Commission and AMECO				
AMECO : database of the European Commission, Economic and Financial affairs					
DPI : Database of Political Institutions, World Bank					

Table 4: Estimation results for EU-13

Dependent variable	Spending				Tax receipts			
Weight matrix	W^d	WGDPC	WGDPL	WGDPLd	W^d	WGDPC	WGDPL	WGDPLd
W*Y	0.33***	0.26***	0.36***	0.34***	0.36***	0.25***	0.36***	0.36***
	(4.17)	*(4.42)*	*(5.45)*	*(5.35)*	*(4.73)*	*(4.10)*	*(5.27)*	(5.66)
Unemployment rate	0.02	0.02	0.02	0.02	0.004	0.005	0.003	0.004
	(1.33)	*(1.35)*	*(1.13)*	*(1.22)*	*(0.23)*	*(0.32)*	*(0.18)*	(0.29
Young people	0.03	0.03	0.03	0.03	-0.01	-0.02	-0.01	-0.01
	(1.03)	*(1.06)*	*(1.24)*	*(1.15)*	*(-0.54)*	*(-0.69)*	*(-0.59)*	(-0.65)
Old people	0.0003	0.005	0.003	-0.002	-0.04	-0.04	-0.04	-0.04
	(0.006)	*(0.11)*	*(0.05)*	*(-0.04)*	*(-0.71)*	*(-0.78)*	*(-0.84)*	(-0.88)
Population density	0.007	0.008	0.007	0.007	0.003	0.003	0.002	0.003
	(1.29)	*(1.37)*	*(1.25)*	*(1.21)*	*(0.47)*	*(0.49)*	*(0.43)*	(0.45)
Election year (t)	0.39***	0.39***	0.41***	0.40***	-0.10	-0.08	-0.09	-0.09
	(4.19)	*(4.22)*	*(4.48)*	*(4.33)*	*(-1.05)*	*(-0.93)*	*(-0.99)*	(-0.98)
Election year (t+1)	0.02	0.03	0.03	0.02	0.03	0.03	0.03	0.03
	(0.18)	*(0.39)*	*(0.37)*	*(0.29)*	*(0.32)*	*(0.40)*	*(0.31)*	(0.40)
Election year (t-1)	0.11	0.12	0.12	0.12	0.06	0.06	0.06	0.07
	(1.24)	*(1.35)*	*(1.36)*	*(1.33)*	*(0.68)*	*(0.65)*	*(0.72)*	(0.75)
Left	-0.11	-0.11	-0.12	-0.12	-0.15*	-0.14*	-0.15*	-0.15*
	(-1.41)	*(-1.33)*	*(-1.47)*	*(-1.47)*	*(-1.80)*	*(-1.76)*	*(-1.79)*	(-1.85)
EU membership	0.13	0.15	0.13	0.12	-0.03	-0.03	-0.03	-0.04
	(0.86)	*(1.08)*	*(0.93)*	*(0.84)*	*(-0.19)*	*(-0.20)*	*(-0.25)*	(-0.28)
Eurozone membership	0.06	0.05	0.07	0.08	0.11	0.12	0.16	0.16
	(0.45)	*(0.35)*	*(0.52)*	*(0.58)*	*(0.79)*	*(0.86)*	*(1.11)*	(1.13)
SGP	0.001	-0.01	0.02	0.02	-0.16	-0.21	-0.14	-0.16
	(0.01)	*(-0.10)*	*(0.19)*	*(0.18)*	*(-1.17)*	*(-1.46)*	(-1.02)	(-1.13)
Log likelihood	-391.72	-390.54	-390.48	-390.98	-399.67	-400.97	-400.24	-399.17

Notes: 377 observations. Spatial fixed effects are included.
** significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level*