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IS THERE A COMMON EUROPEAN MODEL IN PUBLIC SOCIAL EXPENDITURES?

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Abstract

In the recent years a process of State policy rationalization in the social expenditure domain has occurred, hence the debate about the present role and dimension of welfare state intensified.
We have considered a sample of 16 European OECD countries plus USA and we used data from the OECD Social Expenditure Database 1980-2001, keeping all variables that define Public Social Expenditure. Referring to the large literature on this issue, the purpose of this paper is two-fold 1) performing traditional analysis of convergence (sigma and beta convergence) on public social expenditures and 2) analyse public social expenditure allocation expressed in % of GDP and derive a possible classification of the countries by means of a multivariate approach. These methodologies can help to confirm or to reject the hypothesis of a high harmonization of national social expenditure policies in Europe.

1. Behind expenditures trends: a review of the literature

It is frequently claimed that a process of State policy rationalization in the social expenditure domain has occurred in most countries so far, hence the debate about the present role and dimension of welfare state intensified. Since the seminal paper by Pierson (1994), scholars tried to demonstrate if the welfare state dismantling is directing towards converge or resilience, suggesting that the globalization process may lead countries to implement similar structures of government spending over time, producing effects in particular on public social expenditures. Some of them (Keen and Marchand, 1997) argue that, trying to face global competitiveness, all governments raise resources allocation for productive expenditures, reducing non-productive ones. Deepening this analysis, others (Tanzi and Schuknecht, 2000) underline that globalization stresses fiscal competition and factors mobility, reducing government revenues and, consequently, inducing to decrease expenditures devoted to social protection. An opposite interpretation of the globalization effect is carried on by Rodrik's work (1998), where enlargement of public sector serves the purpose of mitigating exposure to external risk perceived by citizens due to increasing trade openness. Other scholars ascribe welfare state resilience to institutional inertia and path dependency. Navarro, Schmitt and Astudillo (2004), wrote that welfare states of most developed countries have not

converged during the globalization period towards a reduced welfare state but have continued to keep their differences, retaining their individual characteristics, shaped primarily by the dominant political tradition that governed each country during the pre-globalisation period (2004, p. 134).
On the other hand, Sanz and Velazquez (2004) analyze whether the OECD member states have harmonized their composition of government expenditures over the period 1970-1997. They identify two different models the countries are converging to, the representative and the community model, that differ for level of welfare and public services and facilities expenditures.
The idea of convergence in social expenditures refers to two different kind of literatures: all the economic definitions of convergence are about the confluence of a determined phenomenon to a reference value. This literature started by the seminal papers by Barro (1990), where the composition of government expenditures has been considered as a relevant determinant of long-run growth; relevant references about the issue of convergence in a more general sense, are Barro and Sala-i-Martin (1992), that define convergence in the sense that poor economies tend to grow faster than rich ones in per capita terms (1992, p. 224), and Mankiw *et al.* (1992).
Speaking of the non-economic literature, in the generic definition of convergence, defined as the tendency of societies to grow more alike, to develop similarities in structures, processes, and performances (Kerr, 1983), it is possible to include multiple concepts like isomorphism, policy diffusion and policy transfer (Knill, 2005, p. 766, 767).
The process of lesson drawing or policy transfer (Dolowitz e Marsh 1996) gives a possible interpretation of the reason why States often converge to a common political action: this process, far from providing a proper explication theory, tries to develop an analogical model, catching the similarities along the national policies[1]. The process of policy transfer has been recently analyzed in the economic literature as a possible useful tool to evaluate public policies (Banks *et. al*., 2005).
The presence of some contradictions in the reviewed literature implies ambiguous results that lead to reject the hypothesis of a univocal link between globalisation and welfare state: "globalization is not a monolithic exogenous force that impacts directly and with equal impact on nation states, but rather a complex set of ideological and practical processes, some of which are accepted, internalized and acted on by national governments" (Sykes *et al*., 2001, p. 197).
Moreover, a growing body of literature has recently focused on European convergence of social policies generally speaking about a downward direction induced by market-enhancing regulations of the European Union (EU) and their associated political and economic constraints on the Member States. At the same time the notion of a European Social Model has been launched as a strategy to make marketization socially acceptable, pointing to a development in a different direction (see Montanari *et. Al.* 2008). However, the supremacy of a single European social model is a much debated issue: Andersen (2006) writes that, "The imposition of a single welfare state model is unjustified from an economic perspective and undesirable politically" (Mullally and O' Brien, 2006, p.7). The basic idea is that each European country still retains its institutional specificities and policy complementarities that define the specific institutions of each social model and, broadly speaking, the different European models of capitalism, based on the functioning of these multiple institutions (Amable, 2003). Institutional economics explains why institutional changes led by "normative loans" could turn to be ineffective, given the stability of the institutional framework. Path dependency and the stickiness of beliefs and norms that explain why policy and institutional design have a stake in the framework they created and resist changes (North, 1990) are serious problems against the action of simply importing institutions that were successful in other countries.
In the present paper we use classical convergence analysis and multivariate approach to look for similarities in the social expenditure trends, trying to interpret the result as a conservative countries' behaviour ("politics" matter), that could be ascribed to path dependency, against the choice of imitating foreign policy choices, adopting new policy solutions fostered by the circulation of new ideas in a global economy (hence, "policy transfer" matters).

[1] Social policy literature basically describes three types of transfer: voluntary; negotiated and coercive (Evans and Buller, 2004)

Given the lack of measurement of policy transfer, our paper is also aimed a providing a possible empirical tool for detecting and analyzing this process.
The paper is organized as follows: we briefly describe data and methodology and then we draw some raw conclusions, according to our starting reflections.

2. Data and Methodology

We consider a sample of 16 European OECD countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom) plus USA (often reported as a trend setter country in the economic policy domain[2]), and use data on public social expenditures registered for the period 1980-2001 by the OECD Social Expenditure Database. The time interval chosen is particularly interesting for a study on social expenditure trends as it is characterized by a heavy economic globalization process that, as quoted above, could be interpreted as the reason of decline (Tanzi, 2000) or rise (Rodrik, 1997) of welfare policies.
Expenditures are grouped in 9 policy areas: Old-age, Survivors, Incapacity-related benefits, Health, Family, Active labour market, Unemployment, Housing and Other (see tab. 1 in the Appendix for detail). Data on total public social expenditures are also kept. As the primary focus of the paper is comparing data on national expenditure levels, we use all variables expressed as percentage of GDP.
We carry on the convergence analyses on these data by means of the well known measures of σ and absolute β convergence. While with the former we seek to verify whether the dispersion of total social expenditure – and expenditures in each policy domain - is reduced over the time interval examined (Streissler, 1979; Baumol, 1986; Dorwick and Nguyen, 1989; Barro and Sala-i-Martin, 1992; Alonso *et al.* 1998), with the second one we try to verify the existence of a negative partial correlation between growth over time in total public social expenditure –and expenditure for each policy domain - and its initial level (Barro and Sala-i-Martin, 1992, 1992; Boyle and McCarthy, 1997).
Extending and deepening the empirical work, we also perform a multidimensional analysis using, for the same variables considered in the traditional convergence analysis (except total public social expenditures), the average values calculated for each country in the periods 1980-85; 1996-91; 1992-96; 1997-01[3]. Principal component Analysis (PCA – Hotelling, 1933) and Hierarchical Cluster Analysis are carried out; the resulting Factorial Plan and Clusters, automatically generated by the Parti-Decla Procedure of the Decisia software Spad, turn out to be good means for studying the dynamics of public social expenditures models.

3. Sigma and beta convergence

In analysing public social expenditure trends, σ-*convergence* is verified by a sensible reduction of expenditures variability over time measured by means of the coefficient of variation. In tab. 2 we report the coefficient of variation values calculated for the whole sample in five different years: 1980, 1985, 1990, 1995 and 2000. Comparing 1980 to 2000, we found a light reduction in variability concerning the following variables: unemployment (UNEMP), active labour market policies (ACTLAB), housing (HOUS) and health (HEAL), while for variables like family expenditure (FAM), incapacity (INC) and old age (OLD), we observe constant values.
In order to test the absolute β convergence hypothesis, we perform, for each variable, a cross section Ordinary Least Square (OLS) regression to estimate parameters of the following equation:

[2] See for example Banks J *et al.* [2005]
[3] This solution helps to obtain a factorial plan and to smooth all possible expenditure outliers in a single year

$$\frac{1}{T}\ln(\frac{S_{it}}{S_{i0}}) = \alpha + \beta \ln(S_{io}) + \varepsilon \qquad [1]$$

where:

S_{it}= public social expenditure (%GDP) in the country *i* in the year 2000
α = constant
S_{i0}= public social expenditure (%GDP) in country *i* in the year 1980
T= total time interval (20 years)
ε = error
ln indicates, as usual, natural logarithm

Results are reported in tab. 2 in the Appendix.
Support for the *absolute β convergence* hypothesis is found for the variables health (HEAL), other expenditures (OTH), unemployment (UNEMP), family (FAM) and total (TOT); for these, regression results show an acceptable value of R^2 while all coefficients are significant and, as expected, have negative sign. No evidence of convergence is supported by our results for other expenditure variables (Old-age, Survivors, Incapacity-related benefits, Active labour market, Housing).

4. Exploring convergence by means of a multivariate approach

Using Parti-Decla procedure of Spad, we obtain the number of Countries' Clusters that maximizes the inter cluster inertia (clusters more heterogeneous among them) and minimizes the intra cluster inertia (clusters more homogeneous in itself).
We found 4 clusters defined as follows (see clusters' composition in tab. 3 in the Appendix):

- Cluster 1 characterized by a high expenditure level for Health (*t value* 3.29) and Old age pensions (*t value* 5.49). In this cluster there are Germany, France and Austria, while in the last period we find Greece, too. This cluster could be defined as "*Continental*"[4] model".
- Cluster 2 characterized by a high expenditure level for housing (*t value* 4.33) and survey pensions (*t value.* 2.83). The country that form this cluster for all periods are UK, Ireland and Belgium; we could label this cluster like "*Anglo-Saxon*".
- Cluster 3 characterized by a low level of expenditure for all variables considered (negative *t value*), except for old age and survey pensions (positive *t values*). Greece belongs to this cluster in the first 3 macro periods; Finland and Norway in the first macro-period; while all other countries remain in it for the whole period. The residual characterization of cluster 3 let us defining it "*Mixed".*
- Cluster 4 characterized by a high expenditure level for family policies (*t value* 5.04), active labour market policies (*t value* 4.40), unemployment policies (*t value* 3.41), other policies (*t value* 5.51) and by low expenditure level for survey pensions (*t value* -3.46). This cluster includes, for the whole period, Sweden, Denmark and Netherlands; in the last 3 periods we find Norway and Finland, too. This cluster could be labelled "*Northern European".*

The low number of inter cluster movement (Greece and Finland, for example) remarks the existence of four "expenditures behaviour models" that retain, in the whole period, their characterization. These results induce to reject the hypothesis of a high homogenization of national social expenditures policies that, on the other hand, seem to follow their former peculiarities, according to

4 We decided to not define clusters according to "traditional models" (Esping Andersen, 1990) because we used only expenditure variables, without institutional variables.

a process of path dependency (Pierson, 2000). Anyway, even if countries adhesion to the "expenditures behaviour models" seem to be stable over time (with few exceptions), some changes are registered and need further investigation.
Fig. 1 in the Appendix represents the factorial plan with variables (pink arrows), single countries (small points) and centres of clusters (big points); according to the results of the PCA analysis, the first factor is positively characterized by variables that define social policies for "population in working age" (see tab 4 in the Appendix) while the second factor is characterized by social policies for "passive population" (see tab 5 in the Appendix).
Looking again at the figure 1 (in the Appendix), we can evaluate the movements of countries during the whole period considered, in particular we notice that:

1. countries belonging to Northern cluster, characterized by high social protection level, tend to converge towards the centre of factorial plan (that means that they decrease their expenditures), during the last period.
2. some Southern countries (Portugal. Spain. Greece), formerly characterized by low expenditure levels, register an increase in public social expenditures since mid-80s;
3. stability in public social expenditures (despite a slight initial increase) is evident for Austria. France and Germany whose values is sensibly above the average.
4. USA shows lower expenditure value than the most European Countries during the entire period considered.

Therefore, the convergence hypothesis seems to be consistent for some Southern countries (Spain, Greece, Portugal) and for the ones in the Northern European cluster.
We could hypothesize that social, cultural and economic development in the first 80s caused by the end of dictatorial regimes, has fostered the growth in social expenditures for Greece, Portugal and Spain that have tried to approach the European welfare standards moving away from the USA model (voluntary policy transfer). After a period of great expansion of its public social expenditures, Spain seems to reduce them only after the adhesion to the Maastricht Treaty and the Growth and Stability Pact, when a global decrease of public expenditures was noticed in most of the European countries; anyway, at the same time, Portugal and Greece managed to not reduce their public social expenditures even after the introduction of Maastricht constraints, thanks to an increase in their revenues (see fig. 2) .
The introduction of Maastricht constraints seems a possible explanation for Northern countries social expenditures reduction during the last period we considered. As we can notice in fig 3 in the Appendix starting from their adhesion to the Treaty, all these countries adopt restrictive expenditure policies that are reflected in the sensible reduction of social expenditures.
If we consider the Maastricht constraints as conditioning national public policy trends, the convergence phenomenon towards retrenchment of public social expenditures in the northern countries could be interpreted as a *"coercive-negotiated"* policy transfer, in the sense that they adopted a similar strategy to answer to the Treaty obligations, despite public finance frameworks were not so identical. However, our hypothesis deserves a further investigation, maybe including the Maastricht constraints in a longitudinal data analysis.

5. Conclusion

Monovariate and convergence analyses, carried on by means of the traditional instruments of descriptive analysis and σ and absolute β convergence, reveal that. for the total welfare expenditures and for some single item of them (mostly HEAL and OTH but. also for UNEMP e FAM), the convergence hypothesis for the whole period 1980-2000 is supported.

Multivariate analysis has appeared as a further useful tool for studying convergence dynamics (including policy transfer, as a possible interpretation of the convergence trends), revealing that the harmonization process in the public social expenditures domain was not so overwhelming to support the rise of a single European social expenditure model: cluster analysis results show that countries generally retain their expenditure choices that means, for the majority of them, belonging to the same cluster over time, despite remarkable movements inside each cluster that translate in a convergence displacements on the factorial plan.

These converging behaviours are more evident for some countries: on one hand we registered the retrenchment of expenditure levels in Northern European Countries (Sweden. Denmark, Finland and Netherlands) during the last period considered (1997-2001) while, on the other hand, an increase in social expenditures for the whole period is observed in Portugal, Greece and Spain.

The Northern Countries expenditure behaviour may be ascribed to an influence exerted by the Growth and Stability Pact: in those countries the adoption of restrictive fiscal policies translated in a reduction of social expenditures, as part of the whole public expenditures. In this sense, these countries' convergence towards a diminished social expenditure level, can be possibly interpreted in terms of a "negotiated-coercive" form of the policy transfer process but a further investigation appears necessary.

Starting from mid-80s Spain, Portugal and Greece tried to approach the European welfare standards augmenting public social expenditures and moving away from the American model. This increasing trend characterised Greece and Portugal also during the 90s, when public revenues by taxation avoided the cut in public expenditures and allowed deficit levels in line with the Stability Pact's constraints.

While our empirical analyses support a partial convergence in expenditures levels for the countries examined, further research will aim at investigating if a convergence in the quality of welfare services has occurred. as well. Moreover, a conditional β convergence analysis on panel data seem to be useful for analysing the role played by the structural variables in the welfare models.

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Appendix

Label	Description
OTH	Other social policy areas. Non-categorical cash benefits to low-income households, other social services. Expressed as % of GDP
HOUS	Housing allowances and rent subsidies. Expressed as % of GDP
UNEMP	Unemployment compensation, severance pay, early retirement for labour market reasons. Expressed as % of GDP
FAM	Family. Child allowances and credits, childcare support, income support during leave, sole parent payments. Expressed as % of GDP
HEAL	HEAL. Spending on in- and out-patient care, medical goods, prevention. Expressed as % of GDP
INC	Incapacity-related benefits. Care services, disability benefits, benefits accruing from occupational injury and accident legislation, employee sickness payments. Expressed as % GDP
SURV	Survivors. Pensions and funeral payments. Expressed as % of GDP
OLD	Old-age. Pensions, early retirement pensions, home-help and residential services for the elderly. Expressed as % of GDP
ACTLAB	Active labour market policies. Employment services, training youth measures subsidised employment, employment measures for the disabled. Expressed as % of GDP
TOT	Total public social expenditure (sum of previous variables). Expressed as % of GDP

Tab. 1: Variables, Labels and descriptions

Dependent variable	**OTH**	**HOUS**	**UNEMP**	**FAM**	**HEALTH**	**INC**	**SURV**	**OLDAGE**	**ACTLAB**	**TOT**
Independent variables										
COSTANTE	-0.0239901**	0.00342903	0.00406062	0.0182955***	0.0714659***	0.0111023	-0.0222746**	0.0274056	0.00413837	0.0837932***
	(0.00899)	(0.0166)	(0.00954)	(0.00434)	(0.01139)	(0.00798)	(0.00855)0	(0.02371)	(0.01786)	(0.02095)
lnOTH 80	-0.0335036***									
	(0.00549)									
lnHOUS 80		-0.0114979*								
		(0.00560)								
lnUNEMP 80			-0.0266761***							
			(0.00868)							
lnFAM 80				-0.0186582***						
				(0.00536)						
lnHEALTH 80					-0.0408493***					
					(0.00700)					
lnINC 80						-0.0145303*				
						(0.00765)				
lnSURV 80							0.0179012			
							(0.01250)			
lnOLDAGE 80								-0.00982046		
								(0.01320)		
lnACTLAB 80									-0.0246130	
									(0.01299)	
lnTOT 80										-0.0261307***
										(0.00720)
Number of cases	17	17	17	17	17	17	17	17	17	17
R^2	0.77156	0.25958	0.42047	0.44596	0.69399	0.19362	0.12021	0.03554	0.37421	0.46743

*** p<0,01 ** p<0,05 *p<0,1

Tab. 2: Absolute beta convergence. Cross country OLS regression results

Cluster	**1**	**2**	**3**	**4**
	Continental	*Anglo Saxon*	*Mixed*	*Northern European*
	Ger 80-85	Ire 86-91	Por 92-96	Fin 97-01
	Ger 86-91	Ire 80-85	Gre 80-85	Swe 97-01
	Aus 92-96	UK 80-85	Por 97-01	Nor 97-01
	Aus 86-91	Ire 92-96	USA 86-91	Ned 97-01
	Aus 97-01	Bel 97-01	Sui 92-96	Dk 97-01
	Aus 80-85	UK 86-91	Gre 86-91	Fin 86-91
	Fra 86-91	Ire 97-01	Spa 97-01	Ned 92-96
	Ger 97-01	Bel 86-91	USA 80-85	Fin 92-96
	Fra 92-96	Bel 92-96	USA 92-96	Dk 86-91
	Fra 97-01	Bel 80-85	Spa 86-91	Ned 97-01
	Gre 97-01	UK 97-01	Ita 80-85	Nor 97-01
	Ger 92-96	UK 92-96	Sui 97-01	Dk 80-85
	Fra 80-85		Spa 80-85	Ned 80-85
			Por 86-91	Ned 80-85
			USA 97-01	Swe 86-91
			Fin 80-85	Dk 92-96
			Nor 80-85	Swe 80-85
			Ita 86-91	Swe 92-96
			Gre 92-96	
			Sui 86-91	
			Ita 92-96	
			Por 80-85	
			Spa 92-96	
			Sui 80-85	
			Ita 97-01	
Inertia within cluster	0.80517	1.10379	3.33869	6.11057
Inertia between clusters			4.02125	

Tab. 3: Clusters' composition

Variable label	**Coordinate**	**Weight**	**Mean**	**Standard deviation**
SURV	-0.32	68	0.999	0.687
MIDDLE AREA				
ACTLAB	0.83	66	0.832	0.52
FAM	0.86	68	1.985	1.118

Tab. 4: Printout on factor 1 by the active continuous variables

Variable label	**coordinate**	**Weight**	**Mean**	**Standard deviation**
OTH	-0.5	68	0.444	0.325
INC	-0.2	68	2.82	1.243
MIDDLE AREA		68		
OLD	0.66	68	7.32	2.295

Tab. 5: Printout on factor 2 by the active continuous variables

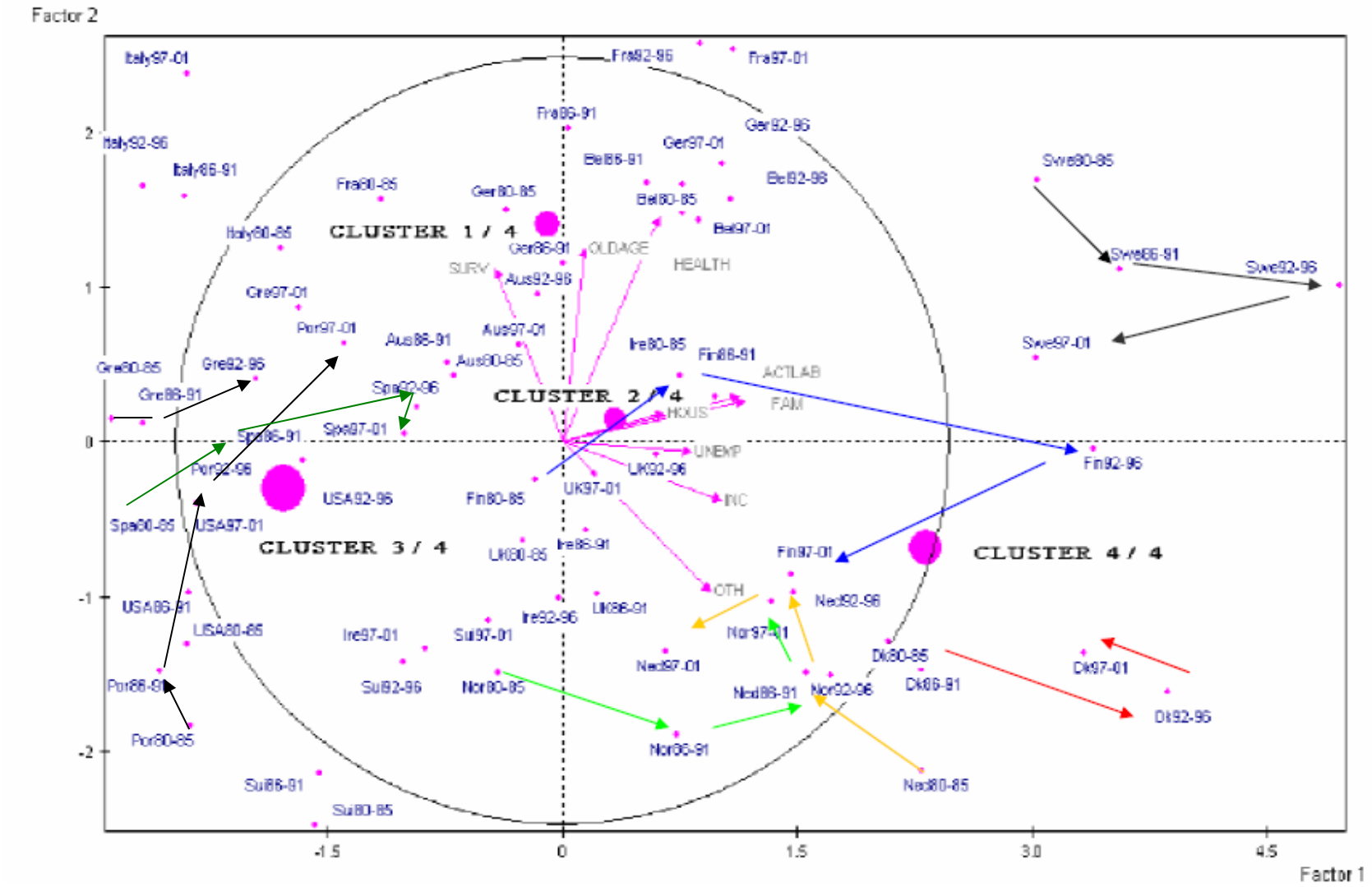

Fig. 1: Factorial plan with variables, centres of the clusters and countries

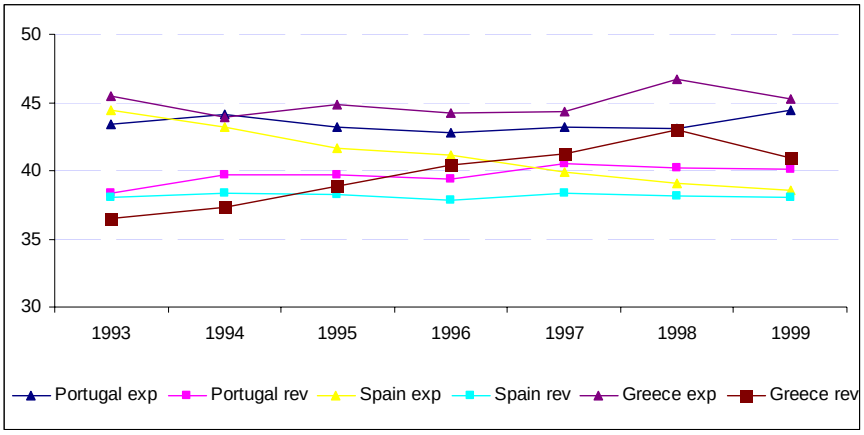

Fig.2: Government expenditures (exp) and revenues (rev) in Portugal. Spain and Greece (1993-2001) (Source*: Eurostat*)

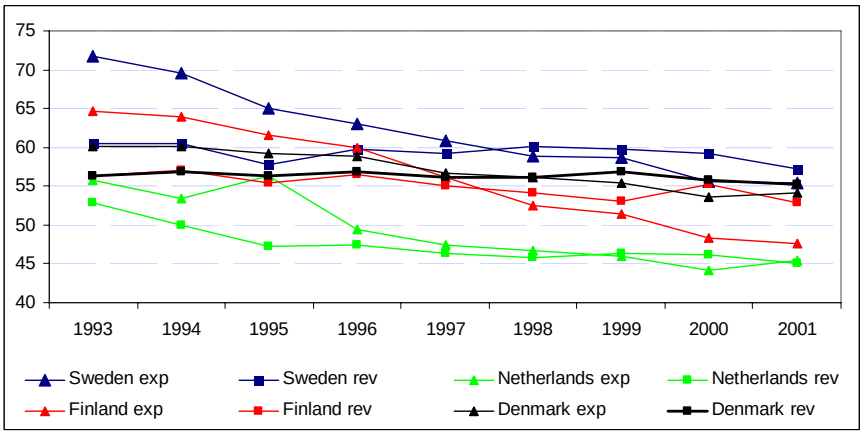

Fig. 3: General Government expenditures (exp) and revenues (rev) in Sweden. Finland. Denmark and Netherlands (1993-2001). (Source: Eurostat)