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Abstract

In a post-industrial and globalised world, assessing the impact of Welfare State Expenditure (WSE) on economic growth has become an issue of growing interest. The debate is still open in the literature, as no consensus has currently been achieved. We argue that disaggregating WSE, the positive/negative performance dichotomy of welfare policies may be overcome. Departing from this intuition, we apply PVAR techniques in order to investigate the endogenous interactions between economic growth (proxied by GDP) and WSE, measured as single social expenditure items, using data gathered from the European System of Integrated Social Protection Statistic (ESSPROS). Our results confirm both the positive and the negative impact of WSE on growth. Moreover, we show the existence of the different impulse responses and time persistence patterns for disaggregated WSE items. Our results imply that further research should take into account the composition of WSE in addition to its extent.

Keywords: Welfare State, Disaggregated Social Spending, Growth, PVAR techniques, Impulse Response, Time Persistence.

1. Introduction

The Great Recession has changed the economic context and the priorities of public policy agendas in many EU countries. The crisis has also challenged the financing methods of social security systems, raising growing concerns on their effectiveness and on their redistributive capacity (Afonso and Allegre, 2011; Piachaud, 2013; D'Addio, 2015). Social spending plays a fundamental role in protecting human rights, in combating poverty and inequality, as well as in providing insurance against exogenous shocks (Townsend 2009). Moreover, it supports individuals throughout their life cycle, especially during phases of macroeconomic recession, facilitating job mobility and matching, supporting the formation of human capital and paving the way for economic stability (Furia et al., 2016). The austerity measures progressively introduced by EU countries from 2008 however had relevant repercussions on social spending. Austerity in this perspective contributes to reducing the costs of the economic crisis at the expense of labour and social security (Blyth, 2013). The current scenario calls again into question a long-standing debate, i.e. whether an extensive Welfare State (WS) and sustained economic growth are incompatible goals; in other words, whether it is necessary to reduce the first in order to stimulate the second (Atkinson, 1995). The relationship between WS and economic growth has been studied along two main paradigms, namely Keynesian and Neoliberal models, offering opposing views. While Keynesians argue that welfare creates a real demand in macroeconomic systems, Neoliberals in contrast state that the social policy is a cost that stifles growth.

During the last 40 years some scholars have argued that the WS makes economies less productive and competitive, hampering economic growth through distortions in economic activities and disincentives in the labour market (Phepls, 1996; Mares, 2010). Unemployment benefits for instance provide disincentives to labour supply, since they guarantee an income for unemployed workers and increase their reservation wage. More generally, Welfare State Expenditure (WSE) generates a cost for the production system, which translates into an increase in labour costs, thus reducing competitiveness in globalised markets and boosting public debt (Prosperetti, 2013). By contrast, the recent literature has highlighted the positive behavioural effects related to unemployment benefits, that incentivise investments in human capital during temporary unemployment spells (Estevez-Abe et al., 2001). That is, WSE may generate economic externalities that outweigh the potential distortions they produce (Lindert, 2004). A stream of the economic literature has stressed the positive effect of WSE on capital accumulation (Barro, 1990). Social spending as a whole for example promotes the accumulation of social capital by improving civic trust levels (Kumlin and Rothstein 2005), while expenditure on health and education increases investment in human capital (Piachaud, 2013). These arguments indicate that public expenditure may be productive and that a well-designed welfare system potentially increases fairness and efficiency, contributing to economic stability (Fouarge, 2003). These approaches share some common features with the concept of social investment proposed in the theoretical literature (Esping-Andersen, 2002), according to which WSE can be considered both as a prerequisite for competitiveness and as a resource that provides and preserves human and social capital.

The relationship between public expenditure, economic performance and social objectives is then more complex than the simple welfare-growth trade-off hypothesis illustrated above (Gough 1996, Hall and Soskice 2001, Begg et al., 2003, Acocella et al. 2004; Castles 2004; Lindert 2004a; 2004b). The empirical literature has been investigating the impact of the WSE on growth, obtaining different and sometimes conflicting results, with no definite conclusion on the direction of the effect (see Simões et al., 2014 for a theoretical and empirical literature review). We try to overcome the trade-off between WSE and economic growth, departing from the consideration that the total amount of spending provides little information on the substantive effect of WSE on growth, since it fails to capture WSE composition (Esping-Andersen, 1990). In this view, the aggregate spending approach seems to be less inappropriate for understanding the WSE-growth nexus and deriving meaningful and useful policy implications. Our main hypothesis is that different dimensions of WSE are likely to have different effects on growth.

This article seeks to extend the disaggregated expenditure approach with two main contributions to the empirical literature: first, based on the recent literature, we distinguish among four spending

categories and we expand these categories, analysing six social expenditure items (see Castles, 2009; Kuitto, 2011). To do so, we resort to data drawn from European System of Integrated Social Protection Statistics (ESSPROS, provided by Eurostat), considering separately cash transfers and benefits in kind for each item during the 1995-2013 timespan for the EU15 countries. Second, we use PVAR techniques, allowing for bidirectional effects, to assess the effect of WSE on economic growth. In other words, we investigate endogenous the interactions between economic growth and single social expenditure items in order to address the research hypothesis. Our econometric strategy allows to evaluate the impulse and time persistence that each single function (item) of WSE generates on growth. To the best of our knowledge, this type of disaggregation has never been applied.

The article is divided into six sections: Section 2 presents the rationale of the study, providing some relevant literature. Section 3 describes and discusses the econometric approach used in the analysis. Section 4 introduces our dataset. Section 5 outlines and discusses the results, providing some robustness checks. Section 6 offers our final considerations and concluding remarks.

2. Rationale: Disaggregated Social Expenditure

The effect of WSE on economic growth has been vastly investigated in the economic literature (Lindauer and Velenchik, 1992; Castles and Obinger, 2007). One widely accepted implication of theoretical models is that purely redistributive policies cause a reduction of savings and investments, thus decreasing capital accumulation and hampering growth. Intergenerational redistributive policies for instance, displace private savings and national investments. Other types of redistributive expenditures, such as welfare programmes, are financed through distortionary taxes, which automatically cause a drop in national investment. On these grounds arguments, a substantial reduction of WSE is often called for. From a theoretical point of view however, the relationship between WSE and growth is not unambiguously negative: some models predict a positive effect of redistributive expenditure on growth (de Haan and Romp, 2007). Generous social security schemes for example, may encourage savings and hence growth if they induce early retirement (Feldstein, 1974). Moreover, social security expenditure may have a positive effect on the level and productivity of investment through other channels, e.g. increasing the degree of social cohesion and political stability, pushing unproductive workers out of the labour force, or providing incentives to investments (Sala-i-Martin, 1996; Buiter and Kletzer, 1993; Bellettini and Berti Ceroni, 1999).

Based on the theoretical literature, it is not possible to determine universally whether WSE stimulates or reduces economic growth. Some empirical studies find a positive effect, while others find a negative impact, which makes applied analyses up to now inconclusive. They way in which expenditure measures are operationalised is of key importance for analytical purposes (Castles, 2004;

Siegel, 2007). In general, total social expenditure is considered as a valid measure of the overall welfare effort (De Deken and Kittel, 2007; Siegel, 2007). This aggregate perspective has been used in some recent studies, that considered WSE as a whole (Herce et al., 2000; Fic and Ghate, 2005; Afonso and Furceri, 2010; Im et al., 2011). A recent contribution, covering a panel of 20 countries, found a positive relationship between public spending and growth; interestingly, the impact on human capital was more robust, the less developed the countries (Bellettini and Berti Ceroni, 2000). The opposite sign in this relation is found in another study on 19 OECD countries during the 1950-2001 period (Fic and Ghate, 2005), corroborating the trade-off hypothesis. Negative results were obtained by similar works on the OECD countries (Tomassi, 2009; Afonso and Furceri, 2010), on Germany (Siebert, 2006) and on the US (McDonald and Miller, 2010).

A deep understanding of the effects of the WSE-growth nexus however requires an analysis of disaggregated welfare expenditure, since the political salience of different welfare policy programmes depends mainly on the content of the welfare effort (Flora, 1986; Aschauer, 1989; Morrison and Schwartz, 1991; Holtz-Eakin, 1991; Devarajan et al., 1996; Kautto, 2002; Castles, 2004, 2009; Siegel, 2007; Saunders and Jensen, 2008; Tepe and Vanhuysse, 2010). The asymmetries in return across different domains of WSE should thus be taken into account (Esping-Andersen, 1990). Looking at the composition of WSE moreover allows to account for volatility in the structure of welfare policies over time, capturing the functional differentiation of welfare spending (Castles, 2004; Kuitto, 2011).

The main rationale behind WSE disaggregation is that the structure and the *contents* of the of social expenditure matter. A number of empirical studies followed this idea. Many works identified the strategic areas where governmental expenditure produces a positive effect on growth (Lindauer and Velenchik, 1992; Canning and Pedroni, 2004; de Haan and Romp, 2007; Irmen and Kuehnel, 2009). *Productive* items – i.e. the domains where expenditure is expected to increase GDP – include physical capital, transport infrastructures, health-care and education (Aschauer, 1989; Barro, 1991; Easterly and Rebelo, 1993; Beraldo et al., 2009; Jalles, 2014).

The disaggregated expenditure approach has met with vast success in the literature. In this light, both Alesina and Perotti (1995) and Alesina and Ardagna (1998) find that differences in WSE composition explain different private sector responses to fiscal policy and different impacts on growth. Von Hagen and Strautch, (2001) instead find that while cuts in transfers may produce expansionary effects, cuts in public investment tend to be contractionary. On the same line of reasoning, Gupta et al. (2005) find that WSE on goods and services is more beneficial for growth than income support schemes based on monetary transfers. Arjona et al. (2003) finds a moderate effect of aggregate social spending on output in the long run. When disaggregating social expenditure into active and non-active expenditure

items, however (where the former include spending on active labour market policies and the latter the remaining components), active spending turns out to have a positive and quantitatively sizeable impact, while non-active spending has a negative effect. Nikolai (2012) uses a disaggregated social spending programme to identify the different spending priorities, distinguishing the costs that can be considered as *investments* and from *compensated expenses*. Herce et al. (2000) try to find a causal link between GDP growth and social protection in the European Union, considering separately five functions that make up social spending. They find that economic growth has as a positive and significant impact on health, old age and family expenditure, but not on employment and housing expenditure. Baldacci et al. (2004) analyse the relationship between social spending, human capital, and economic growth. They focus on the transmission mechanisms of these expenditure items, testing whether they contribute effectively to the accumulation of human capital. Their results show a positive and significant impact of education and health spending on human capital accumulation, and so on per capita GDP. Beraldo et al. (2009) show a robust positive correlation between investments on health and education and GDP growth. Furceri and Zdzienicka (2012) disaggregate social spending into nine areas of state intervention (as suggested by the OECD), finding that only health, survivor and unemployment spending have a positive and statistically significant impact on short-term growth. Afonso and Jalles (2014) split public social spending into education, health and social security/well-being. They find that education and health have a positive impact on growth in developing countries, whereas social security spending has a negative impact.

To sum up, a close look at the previous literature reveals 1) the need to examine expenditure items separately, 2) a bi-directional relationship between WSE and economic growth – which implies endogeneity concerns must be addressed – and 3) the relevance of the type of WSE (whether in goods and services or in money transfers). In such theoretical background, our work aims to provide an empirically based assessment of the impact of disaggregate WSE on the economic performances of EU countries, by looking at impulse responses and time persistence patterns. To identify the best channels through which policy effectiveness may be maximised, we disaggregated WSE into six functions of spending, further divided into cash benefits and benefits in kind.

3. Method

We a use Panel Vector Auto Regression (PVAR) approach, combining the VAR technique with panel data models, which allow to borrow strength from both the cross-sectional and the time-series dimension. Our goal is to investigate the endogenous interactions characterising economic growth and social expenditure items. Economic and financial integration within the EU have induced closer ties among Member States, so that variations in the expenditure of a country may as well influence

the others. As a consequence, cross-national endogenous interactions must be taken into account (Canova et al, 2007; Kose and Prasad, 2010). Following the recent empirical literature (Boubtane et al., 2013), we set up a system of simultaneous equations, looking as follows:

$$X_{it} = u_i + \Gamma(L)X_{it} + \epsilon_{it} \quad (1)$$

In this reduced form model, subscript *i* represents one of the *K* variables (either economic growth or an expenditure item) in one of the *M* countries. So X_{it} is an *KM x 1* vector of stationary variables, u_i is an *KM x 1* vector of deterministic unit-specific effects, $\Gamma(L)$ *is a KM x KM* square matrix polynomial in the lag operator and ϵ_{it} is a vector of disturbances. All the variables in vector X_{it} are endogenous by definition. Interdependencies among variables may take three forms:

1. Dynamic interdependencies spanning over time, due to the presence of the lagged variables on the right-hand side of each equation.
2. Within-countries interdependencies, arising since national economic growth and expenditure items are closely intertwined. The elements of *X* in other words affect each other at the national level.
3. Between-countries interdependencies, driven by the cross-country correlation in the error term that arise due to European integration. The elements of *X* in other words affect each other cross the national borders.

The PVAR approach aims to capture these interdependencies, resorting to a relatively small amount of assumptions, which impose restrictions on the structure of the variance-covariance matrix of the error term (Canova and Ciccarelli, 2004; Goés, 2016). When the variables in the model are non-stationary, the first-difference transformation may be used to overcome this problem[1]. We implement three models: Model 1 considers the total value of single social expenditure items; Model 2 focuses only on cash benefits; Model 3 uses benefits in kind (*bik*) only. Based on the appropriate model selection criteria we select only one lag[2]. We estimate three systems of equations in stationary variables:

$$Model\ 1: \quad \Delta X_{it}^{total} = L\Delta X_{it}^{total} + \Delta\epsilon_{it}$$

$$Model\ 2: \quad \Delta X_{it}^{cash} = L\Delta X_{it}^{cash} + \Delta\epsilon_{it}$$

[1]Stationarity tests drove our choice in this direction. See the next sections for more details.
[2]Following the econometric literature, we based our choice on three model selection criteria: Moment Bayesian Information Criterion (MBIC), Moment Akaike information criterion (MAIC), and Moment Hannan and Quinn information criterion (MQIC, see Andrews and Lu, 2001). These criteria are very similar to the likelihood-based AIC, BIC and HQIC.

$$Model\ 3: \quad \Delta X_{it}^{bik} = L\Delta X_{it}^{bik} + \Delta\epsilon_{it} \tag{2}$$

where Δ is the first difference operator, *X* contains per capita GDP and the expenditure items we consider, namely old age, working-age disability, sickness/health care, social exclusion, family/children and unemployment (see **Table 1** for the definition of each variable). The superscripts *total*, *cash*, and *bik* refer to total expenditure, monetary expenditure, and expenditure in kind, respectively. Finally, L is the lag operator. The single social expenditure items considered in the analysis are described more in detail in the **Table 2.**

Table 1. Descriptive Statistics

Label	Variable	Mean	St Dev	Min	Max
GDP	Per capita GDP	64.35	94727	8.80	392.7
OA^{total}	Total old-age expenditure as percentage of total social expenditure	37.17	7.11	19.14	54.21
WAD^{total}	Total working-age disability expenditure as percentage of total social expenditure	9.033	3.028	4.49	15.22
SHC^{total}	Total sickness-health care as percentage of total social expenditure	27.70	4.26	17.73	41.73
SE^{total}	Total social exclusion as percentage of total social expenditure	2.07	1.32	0.32	7.14
FC^{total}	Total family-children expenditure as percentage of total social expenditure	9.25	3.69	1.98	19.79
U^{total}	Total unemployment expenditure as percentage of total social expenditure	7.21	3.52	1.62	16.45
OA^{cash}	Cash benefit for old-age as percentage of total old age expenditure	94.00	6.23	76.93	100
WAD^{cash}	Cash benefit for working-age disability as percentage of total working-age disability expenditure	79.32	12.57	40.02	97.13
SHC^{cash}	Cash benefit for sickness-health care as percentage of total sickness-health care expenditure	14.29	5.90	4.69	32.38
SE^{cash}	Cash benefit for social exclusion as percentage of total social exclusion expenditure	59.60	28.18	0	100
FC^{cash}	Cash benefit for family-children as percentage of total family-children expenditure	68.55	15.87	31.15	94.32
U^{cash}	Cash benefit for unemployment as percentage of total unemployment expenditure	88.01	14.12	32.07	100
OA^{bik}	Benefit in kind for old-age as percentage of total old age expenditure	5.99	6.23	0	23.06

WAD^{bik}	Benefit in kind for working-age disability as percentage of total working-age disability expenditure	20.67	12.57	2.86	59.97
SHC^{bik}	Benefit in kind for sickness-health care as percentage of total sickness-health care expenditure	85.70	5.90	67.61	95.30
SE^{bik}	Benefit in kind for social exclusion as percentage of total social exclusion expenditure.	40.39	28.18	0	100
FC^{bik}	Benefit in kind for family-children as percentage of total family-children expenditure	31.44	15.87	5.67	68.84
U^{bik}	Benefit in kind for unemployment as percentage of total unemployment expenditure	11.98	14.12	0	67.92

Table 2. Social Expenditure Items

Function	Cash Benefits	Benefits in Kind
Old Age	Old age pensions, anticipated old age pensions, partial pensions, care allowances and other cash benefits	Accommodation, assistance in carrying out daily tasks and other benefits in kind
Working-age disability	Disability pensions, early retirement benefits due to reduced capacity to work, care allowances, economic integration of people with disabilities and other cash benefits	Accommodation, assistance in carrying out daily tasks, rehabilitation and other benefits in kind
Sickness/health care	Paid sick leave and other cash benefits	*In-patient health care*: direct provision and reimbursements *Out-patient health care:* direct provision of pharmaceutical products, reimbursements and other benefits in kind.
Social exclusion	Income support and other cash benefits	Accommodation, rehabilitation and benefits in kind for alcohol and drug abusers
Family/children	Income support in the event of childbirth, birth grants, parental leave, family or child allowances and other cash benefits	Day-care facilities, accommodation, home help and other benefits in kind
Unemployment	Full unemployment, partial unemployment and early retirement benefits, vocational training allowances, redundancy compensations and other cash benefits	Mobility and resettlement, vocational training, placement services, job-search assistance and other benefits in kind

Source: ESSPROS (2016)

Jointly considered, these expenditure items account for 92.43% of social expenditure in the EU. Two items are excluded from our analysis, namely housing and survivors only. Both feature very little

within-country variation and for many member states at least one of them is constantly zero, generating problems in the estimation.

The deterministic fixed effects u_i in equation (1) are removed by applying the first-difference transformation. This procedure however generates the well-known Nickell bias (Nickell, 1981), due to the correlation between the first-differenced lag and the first-differenced error term (both depend on ϵ_{it-1}). In this context, OLS would produce inconsistent estimates (Baltagi, 2008). To overcome this problem, forward mean differencing may be used (also known as Helmert procedure, see Arellano and Bover, 1995; Love and Zicchino 2006). This procedure removes from each observation the forward mean, i.e., the mean of all the future observations available for each unit for the available years. As a result, the orthogonality between the transformed variables and the lagged regressors is guaranteed. Lagged regressors may thus be used as instruments in GMM estimation.

Once all the coefficients of the panel VAR are estimated using GMM system estimation, we compute the impulse response functions and variance decomposition. Impulse response functions describe the response of an endogenous variable to a shock in another variable in the system over time. To work out the impulse response functions, we resort to the Cholesky decomposition, which splits the variance-covariance matrix into two the product of a lower triangular matrix and its transpose. This decomposition assumes that series listed first in the VAR order affect the other variables contemporaneously, whereas the series listed successively in the VAR order affect those listed first only through their lags. The variables listed first in the VAR order are thus considered to be more exogenous[3]. We compute confidence intervals of the impulse response functions using Monte Carlo simulations (see Love and Zicchino, 2006; Boubtane et al., 2013). Finally, variance decomposition measures the contributions of each source of shock to the (forecast error) variance of each endogenous variable, at a given forecast horizon.

PVAR models have been used in a number of macroeconomic applications, in fields of study that include the business cycle (Canova and Pappa, 2007; Canova and Ciccarelli; 2012), international transmission mechanisms of real and financial shocks (Ciccarelli et al., 2012) and the effects of government spending in economically integrated countries (Bénétrix and Lane, 2010; Beetsma and Giuliodori, 2011). This work posits itself in the branch covered by the latter two works, proposing a finer-grained analysis that focuses on expenditure items rather than on overall WSE.

4. Data and Econometric Results

[3]We implemented several estimates, ordering the variables in different ways and we obtained very similar results. All the estimates are available upon request.

We ran the model on annual data for the 1995-2013 period in the 15 countries that first joined the European Union (EU15). This sample was chosen because it is rather uniform, and because complete data are available for all countries. All these countries were indeed granted EU membership conditional on fulfilling a number of economic and political requirements and accepting the principles of democracy, human rights and fundamental freedoms. This implies that our dataset covers substantially similar and comparable countries, while still featuring a relevant degree of cross-country variation in all variables. No less significant was the availability of the data for the whole time-span. All the data used in our analysis were actually taken from the EUROSTAT database and refer to the ESSPROS survey[4]. The figures are expressed in millions of ECU/Euros under purchasing power parity. The conversion from national currencies to Euros is based on a fixed rate for all years.

4.1 Panel unit root tests and cointegration analysis

Panels with a significant temporal dimension are subject to spurious relationships, mostly because macroeconomic variables are usually characterised by non-stationarity. Extending time series methods to panel data allows us to control for non-stationarity and to verify the cointegration relationships (Kao and Chiang, 2000; Pedroni, 2000). The analysis of cointegration is developed in two steps: 1) verification of the presence of unit root through appropriate tests, and 2) cointegration tests. The unit root tests were designed to evaluate the integration order of variables[5]. Cointegration tests address the problem of non-stationarity of the series[6].

Table 3 and **Table 4** report the results of the first second-generation unit root tests for the variables in the system. At conventional levels of significance, the results show that all variables are non-stationary in levels, since the null hypothesis is not rejected (Table 3). However, the series are stationary in first differences (Table 4).

Among the many cointegration tests introduced in the literature (see Kao, 1999; Pedroni, 1999) we propose the four tests devised by Westerlund, that allow to control for a high degree of heterogeneity (Westerlund, 2007). The four tests evaluate the null hypothesis that the error correction term in a conditional ECM (Error Correction Models) is zero, thus implying no cointegration. In the case of

[4]*ESSPROS, the integrated system of social protection statistics, provides a coherent comparison between European countries of social benefits to households and their financing. Social benefits are transfers to households, in cash or in kind intended to relieve them from the financial burden of a number of risks or needs* (ESSPROS 2012).

[5]All tests are characterised by a null hypothesis that postulates a unit root.

[6]Among the first generation test we have: LLC tests (Levin et al., 2002), IPS (Levin et al., 2002) and Fisher's nonparametric tests (Maddala and Wu, 1999; Choi, 2001). These tests assume that data are independent and identically distributed across individuals. This assumption creates problems of bias, which leads to rejecting the null hypothesis of unit root in the presence of non-stationary (Banerjee et al., 2005). By contrast, second-generation tests allow us to detect explicit cross-sectional dependence. For tests in this second category, see the Pesaran, Breitung and Hadri test (Pesaran, 2007). We omit in our analysis the Breitung and Hadri test because it requires strongly balanced data.

variables in levels, we observe that the cointegration tests do not reject the null hypothesis of no cointegration (**Table 5)**. Therefore, the empirical properties of the variables examined require estimation in first differences, as no cointegration relationship exists between the (non-stationary) variables in level.

Table 3. Unit Root Tests: Variables in Levels

Variables	**IPS W-t-bar**	**Fisher**		**Pesaran**
		Adf-Pm	PP-Pm	Z(t-bar)
GDP	0.55	12.4	-2.2	0.93
Total				
OA_{it}^{total}	-2.37**	29.79	-0.02	2.13
WAD_{it}^{total}	-0.51	22.96	-0.90	0.58
SHC_{it}^{total}	0.06	34.48	0.57	-0.78
SE_{it}^{total}	1.35	17.40	-1.62	2.14
FC_{it}^{total}	1.003	29.52	-0.06	2.31
U_{it}^{total}	-1.90**	34.70	0.60	2.61
Cash Benefits				
OA_{it}^{cash}	1.83	20.20	-1.26	-0.12
WAD_{it}^{cash}	0.81	26.98	-0.38	-0.33
SHC_{it}^{cash}	-0.03	32.81	0.36	0.22
SE_{it}^{cash}	-1.72**	42.45*	1.60*	0.87
FC_{it}^{cash}	-1.73**	24.60	-0.69	0.42
U_{it}^{cash}	1.74	12.32	-2.28	2.18
Benefits in Kind				
OA_{it}^{bik}	1.83	20.20	-1.26	-0.12
WAD_{it}^{bik}	0.81	26.98	-0.38	-0.33
SHC_{it}^{bik}	-0.03	32.81	0.36	0.22
SE_{it}^{bik}	-1.72**	42.44*	1.60*	0.87
FC_{it}^{bik}	1.73**	24.60	-0.69	0.42
U_{it}^{bik}	1.74	12.32	-2.28	2.18

*Note: our elaboration based on EUROSTAT data. ***, **, *: 1, 5, 10%*

Table 4. Unit Root Tests: Variables in First Differences

Variables	**IPS W-t-bar**	**Fisher**		**Pesaran**
		Adf-Pm	PP-Pm	Z(t-bar)
GDP	-7.02***	83.06**	6.85 **	-2.72***
Total				
OA_{it}^{total}	-10.13***	128.23***	12.68***	-2.66***
WAD_{it}^{total}	-9.86***	76.32***	5.98***	-1.76**
SHC_{it}^{total}	-8.69***	101.02***	9.16***	-3.45***
SE_{it}^{total}	-6.81***	131.28***	13.07***	-2.85***
FC_{it}^{total}	-9.78***	90.98***	7.87***	-1.73**
U_{it}^{total}	-4.59***	87.76***	6.78***	-2.809**

Cash Benefits				
OA_{it}^{cash}	-9.32***	88.51***	7.55***	-2.83***
WAD_{it}^{cash}	-11.14***	85.59***	7.17***	-1.68**
SHC_{it}^{cash}	-6.74***	61.85***	4.11***	-1.82**
SE_{it}^{cash}	-8.50***	119.40***	11.54***	-1.48*
FC_{it}^{cash}	-8.03***	83.19***	6.86***	-3.69***
U_{it}^{cash}	-8.95***	57.12***	3.50***	-1.80**
Benefits in Kind				
OA_{it}^{bik}	-9.32***	88.52***	7.55***	-2.83***
WAD_{it}^{bik}	-11.14***	85.59***	7.17***	-1.68**
SHC_{it}^{bik}	-6.74***	61.85***	4.11***	-1.52*
SE_{it}^{bik}	-8.50***	119.40***	11.54***	-1.78**
FC_{it}^{bik}	-8.03***	83.19***	6.86***	-3.69***
U_{it}^{bik}	-8.95***	57.12***	3.50***	-1.81**

*Note: our elaboration based on EUROSTAT data. ***, **, *: 1, 5, 10%*

Table 5. Cointegration Tests

Model 1			**Model 2**			**Model 3**		
statistic	value	p-value	statistic	value	p-value	statistic	value	p-value
G_τ	-1.45	0.13	G_τ	-1.45	0.21	G_τ	-3.45	0.57
G_α	-3.27	0.87	G_α	-1.67	0.11	G_α	-2.67	0.43
P_τ	-1.48	0.14	P_τ	-2.89	0.45	P_τ	-1.34	0.14
P_α	-6.54	0.98	P_α	-4.23	0.67	P_α	-1.67	0.26

Note: P-value are robust critical values obtained through bootstrapping with 1000 replications

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5. Results and Discussions

This section presents the impulse response functions and the variance decomposition resulting from the panel VAR model. Selecting the appropriate number of lags is essential for panel VAR: too few lags fail to capture the system's dynamics, leading to omitted variable bias; too many lags cause a loss of degrees of freedom, resulting in over-parameterisation. Based on the Lagrangian Multiplier (LM) test for residual autocorrelation, we use three lags for each model. **Figure 1**, **Figure 2** and **Figure 3** display the impulse responses functions of Model 1 (Total Spending), Model 2 (Cash Benefits) and Model 3 (Benefits in Kind), respectively. **Table 5** summarises the main findings, while all the coefficients may be found in the Appendix).

Figure 1. Impulse-Responses for Model 1

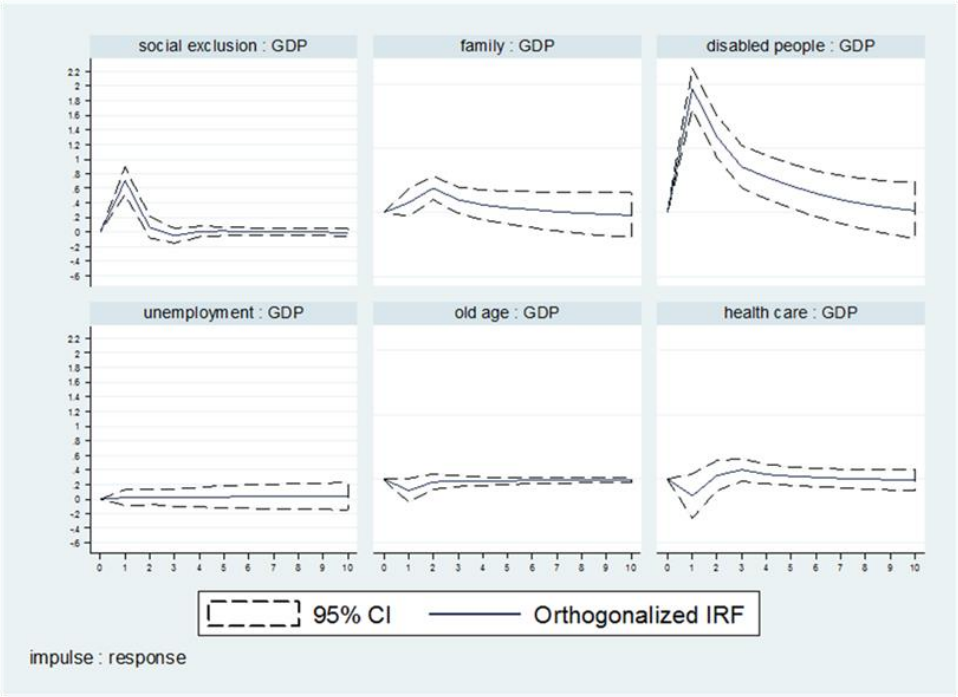

Figure 2. Impulse-Responses for Model 2

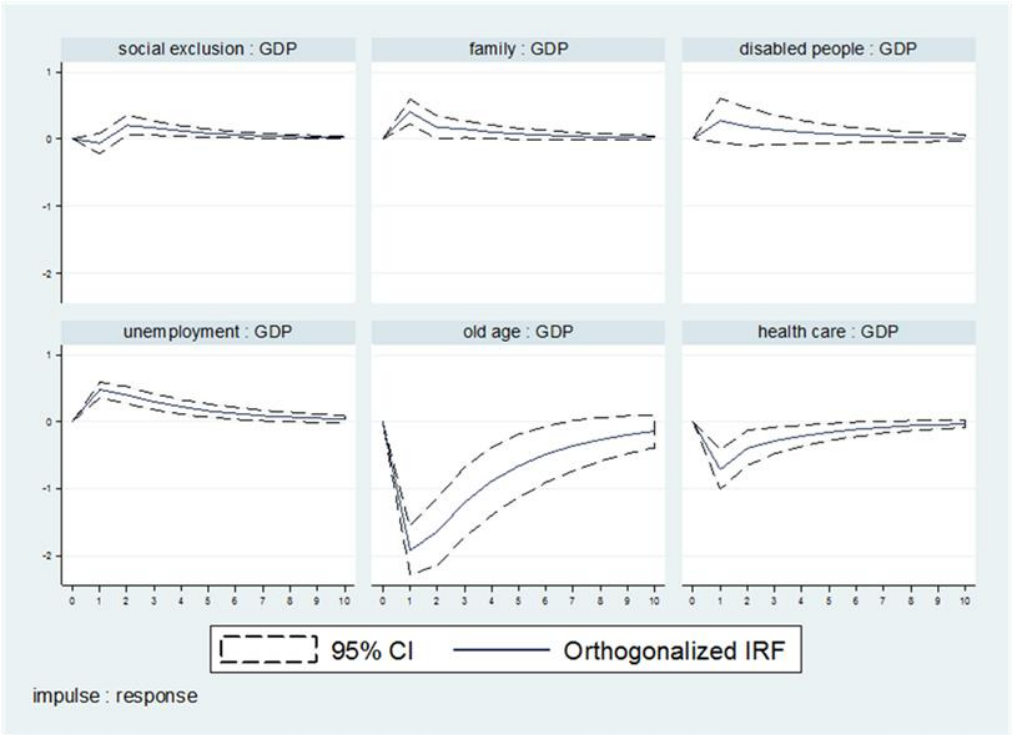

Figure 3. Impulse-Responses for Model 3

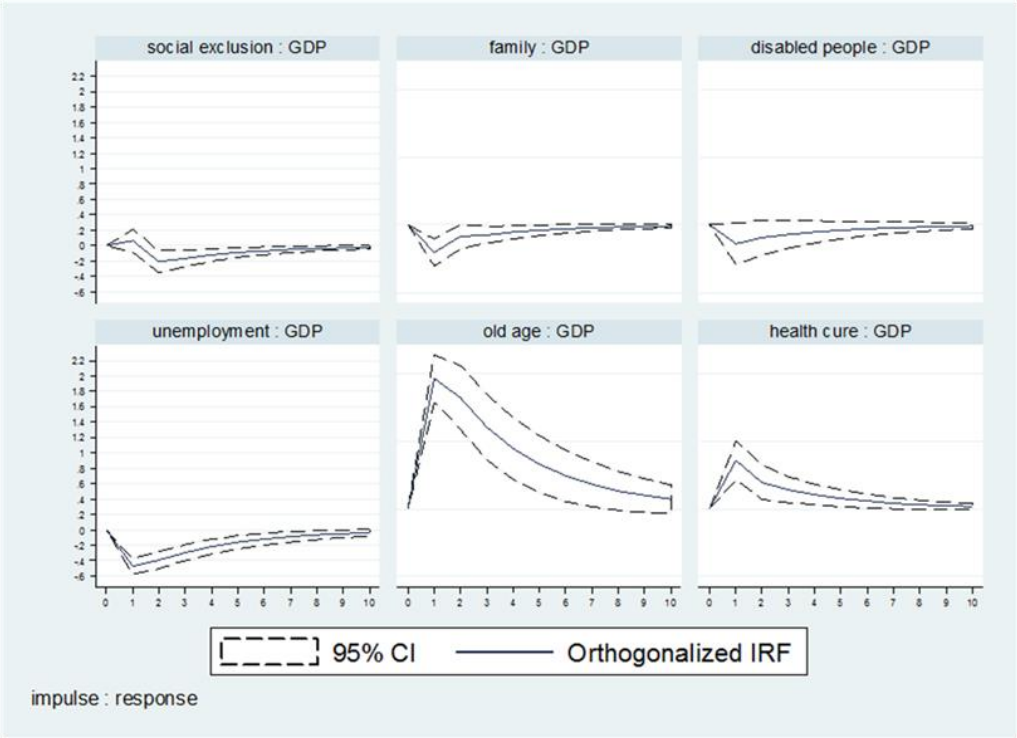

Table 5. Summary of the Results

Function		Model 1 (Total spending)	Model 2 (Cash benefit)	Model 3 (Benefits in kind)
Old Age	Max value Depletion	*Negative effect on GDP* Within 1st year over time	*Negative effect on GDP* Within 1st year over time	*Positive effect on GDP* Within 1st year over time
Working age disability	Max value Depletion	*Positive effect on GDP* Within 1st year over time	non-significant	non-significant
Sickness/health care	Max value Depletion	*Positive effect on GDP* Within 3rd year over time	*Negative effect on GDP* Within 1st year Within 4th year	*Positive effect on GDP* Within 1st year over time
Social Exclusion	Max value Depletion	*Positive effect on GDP* Within 1st year Within 2nd year	*Positive effect on GDP* After 2nd year over time	*Negative effect on GDP* Within 2nd year over time
Family/Children	Max value Depletion	*Positive effect on GDP* Within 2nd year over time	*Positive effect on GDP* Within 1st year Within 2nd year	*Negative effect on GDP* After 3rd year No Depletion

Unemployment	Max value Depletion	Negative Within 1st year over time	*Positive effect on GDP* Within 1st year over time	*Negative effect on GDP* Within 1st year over time

The main result that emerges from our work is the fact that the same item may have both a positive and a negative impact on GDP, depending on whether cash benefits or benefits in kind are considered. Moreover, both the period corresponding to the maximum values and the time persistence patterns vary significantly across models. These findings corroborate the notion that WSE composition matters at least as much as its amount. The rest of this section describes our results more in depth and offers a rationale for the signs obtained, relating them to the recent literature. However, it should be noted that inferring causal relationships is beyond the scope of this work, due to the pervasive presence of endogenous interactions.

Old age. Social expenditure on old age represents the largest item of aggregate social expenditure, mostly related to pensions. Increases in both aggregate and cash old age expenditure, produce a negative impact on economic growth, through labour market distortions (Acocella, 2009). Conversely, benefits in kind affect economic growth positively and persistently, since they ensure the necessary tools for elderly people to be autonomous (see Esping-Andersen, 2002). Public provision of in-kind benefits such as accommodation and home care relieves families from the burden of care for the elders, freeing up time for work. This benefits both the elder, who receives specialised professional care, and the family, that obtains additional labour income.

Working age disability. Concerning expenditure on disability, only total spending has a significant effect on growth. This result highlights the importance of combining expenditure in cash and in kind, to achieve a twofold goal: 1) sustaining people with disability and 2) favouring economic growth (Parodi and Sciulli, 2008).

Sickness/health care. Economic growth responds positively to increases in total health expenditure, as well as to increases in benefits in kind. Cash benefits instead produce a negative effect. Since health services cure sick individuals and restore their productivity, health expenditure may be seen as a production input (Grossman, 1972). Monetary benefits however do not ensure that that recipients actually receive the medical treatment (Ahn and Kim, 2015).

Social exclusion. Increases in total spending on social exclusion have a positive effect on economic growth; the same goes for cash benefits. On the other hand, benefits in kind have a negative effect. The reason for this last point is to be found in the definition of social exclusion, which is a

multidimensional concept[7] (Ferraro et al., 2019). The variety of needs addressed does not allow to allocate large sums for the provision of services satisfying individual needs (appropriate training courses for the unemployed, health services and expensive medical equipment for people with serious health problems, etc.). Benefits in kind associated with this item create dispersion and do not generate economic growth. Conversely, if combined with the cash benefits, they may achieve a two-fold purpose: 1) economic growth and 2) economic assistance and provision of services for citizens in need.

Family/Children. Increase in expenditure on family/children have a positive impact on GDP. While cash benefits have positive effect however, benefits in kind produce a negative impact. Spending on family/children may be seen as an investment on human capital (Barro 1990; Herce et al. 2000; Arjona, 2003). From a theoretical point of view, the provision services such as day-care facilities, should increase labour supply, especially for women (Agovino et al., 2019), thus stimulating growth. The high unemployment rates observed in many EU countries however do not guarantee sufficient employment opportunities. Consequently, the additional costs generated by benefits in kind are not compensated by increases in labour income.

Unemployment. Total expenditure on unemployment and benefits in kind have a negative impact on economic growth. Conversely, monetary spending has a positive on economic growth. This result is coherent with the idea that monetary unemployment benefits support the unemployed during their search and prevent their productivity from falling. As a result, they are more likely to find good and productive jobs (Bradlay and Stephens, 2007; Nolan, 2013). Benefits in kind on the other hand consist in professional training courses and may generate a locking-in effect (Calmfors, 1994; Van Ours, 2004; Lechner et al., 2007; Crépon et al., 2009; Agovino and Rapposelli, 2017): attendance to training programmes reduces the probability of finding a job, through a decline in search intensity (Mazzolini and Orlando 2014).

Table 6 reports the variance decomposition, which allows to assess the relative importance of shocks in one variable on fluctuations in other variables. The first column of the table shows that in all the three models, the most influential variable for economic growth is its lag. Not surprisingly, each variable depends closely on its history. In Model 1, expenditure on working age disability explains approximately 31% of the fluctuations of GDP, followed by social exclusion expenditure, which explains approximately 3%. In Model 2 instead, the role of old age cash benefits is primary, since old age explains approximately 33% of the fluctuation of GDP, followed by sickness/health care

[7]Social exclusion refers first to an insufficient level of income (poverty), but also to precarious situations in the field of health, education and employment. The content of the social exclusion expenditure function is fairly heterogeneous (ESSPROS 2016)

expenditure, which explains approximately 3%. Finally, in the case of Model 3, benefits in kind for the elderly explain approximately 33% of the fluctuations of growth, followed by sickness/health care expenditures, which explains approximately 3%.

Table 6. Variance Decomposition Analysis

Variation in GDP explained by the variables in the columns (in %, 10 periods ahead)								
Model 1		ΔGDP_{it}^{total}	ΔSHC_{it}^{total}	ΔWAD_{it}^{total}	ΔOA_{it}^{total}	ΔFC_{it}^{total}	ΔU_{it}^{total}	ΔSE_{it}^{total}
	ΔGDP	64.31	0.52	31.29	0.17	1.11	0.05	2.55
Model 2		ΔGDP_{it}^{cash}	ΔSHC_{it}^{cash}	ΔWAD_{it}^{cash}	ΔOA_{it}^{cash}	ΔFC_{it}^{cash}	ΔU_{it}^{cash}	ΔSE_{it}^{cash}
	ΔGDP	60.18	2.93	0.54	33.17	0.85	1.96	0.36
Model 3		ΔGDP_{it}^{bik}	ΔSHC_{it}^{bik}	ΔWAD_{it}^{bik}	ΔOA_{it}^{bik}	ΔFC_{it}^{bik}	ΔU_{it}^{bik}	ΔSE_{it}^{bik}
	ΔGDP	60.18	2.93	0.54	33.17	0.84	1.95	0.36

5.1 Robustness Checks

The Great Recession introduced a strong cyclical component in the structural pattern of EU economies, potentially hindering the ability of dynamic models to capture the underlying economic trend. As a robustness check, we run the same analysis on the pre-crisis period only (1995-2007). As shown in **Table A1**, the results are very similar, except for the inevitable loss of significance in some coefficients.

A further check is represented by the reduction of the dataset to a subset of countries with similar characteristics. The Mediterranean States for instance are similar in many regards: economically (Murias et al., 2012; Liapis et al., 2013; Steurer and Hametner, 2013), politically (Pujas and Rhodes, 1999; Yánez, 2004; Vecchione et al., 2011) and culturally (Jurado Guerrero and Naldini, 1996; Giuliano, 2007; Guiso et al., 2009). For this reason, they form a cohesive homogeneous sub-sample on which we test the stability of our results. Reducing the sample, our results are not contradicted and are at least in part confirmed (see **Table A2**), although they suffer a loss of significance. In particular, health and family/children spending still produce positive and significant effects, whereas the other items no longer do. In part this problem is certainly due to the lower number of observations. On the other hand, it may depend on the lower effectiveness of WSE in Mediterranean countries (Esping-Andersen, 1990; Trifiletti, 1999; Arts and Gelissen, 2002; Naldini, 2004).

6. Conclusions

This article contributes the macroeconomic literature by refining the disaggregated Welfare State Expenditure (WSE) approach to identify different impacts of single welfare spending items in 15 European countries. This work represents an attempt to overcome the long-standing debate on the incompatibility of an extensive Welfare State and sustained economic growth. Our results confirm both the positive and negative impact of WSE on growth, and thanks to a PVAR econometric strategy, we also disentangle the different impulse responses and time persistence patterns that disaggregated WSE items produce. Moreover, dividing expenditure items between benefits in cash and benefits in kind, we highlight relevant differences in the effectiveness of welfare policies, concerning both the sign and the timing of their effects. Our results suggest that the 'one-way' trade-off between social spending and economic growth may be empirically refuted. Though exploratory, our results call for a more extensive usage of functionally disaggregated data, with a particular focus on the difference between monetary and real expenditure. This work paves the way for future developments on the one hand methodological refinements may produce more detailed results; on the other hand, comparative studies may assess the relative performances of individual European countries and investigate the within-EU differences between Mediterranean and continental economies.

Appendix

All coefficients resulting from the PVAR analysis conducted over the whole time-span are shown in **Table A1**. The results of the robustness checks are shown in the following table. In particular, **Table A2** displays the coefficients obtained when covering all the EU-15 countries over the pre-crisis period and **Table A3** illustrates the coefficients obtained when considering only Italy and Spain over the whole period.

Table A1. PVAR Results (1995-2013)

Y	X	Model 1	Model 2	Model 3
GDP	GDP	0.883	0.482	0.568
		(0.008)***	(0.036)***	(0.034)***
	Old Age	-0.045	-0.027	0.013
		(0.005)***	(0.004)***	(0.003)***
	Disability	0.063	-0.001	0.001
		(0.016)***	(0.001)	(0.001)
	Health	0.026	-0.008	0.003
		(0.005)***	(0.001)***	(0.001)**
	Social Exclusion	0.070	0.011	-0.001
		(0.017)***	(0.006)*	(0.000)**
	Family	0.042	0.001	-0.001
		(0.011)***	(0.001)**	(0.000)*
	Unemployment	-0.042	0.002	-0.041
		(0.008)***	(0.000)***	(0.000)***
Old Age	GDP	0.911	-5.313	6.364

		(0.100)***	(0.465)***	(0.456)***
	Old Age	0.462	0.219	0.086
		(0.053)***	(0.031)***	(0.027)***
	Disability	-0.267	-0.029	-0.024
		(0.155)*	(0.016)*	(0.013)*
	Health	-0.359	0.022	-0.048
		(0.086)***	(0.016)	(0.013)***
	Social Exclusion	1.749	-0.005	-0.009
		(0.242)***	(0.002)**	(0.002)***
	Family	0.001	-0.008	0.000
		(0.115)	(0.006)	(0.003)
	Unemployment	-0.514	-0.021	-0.013
		(0.114)***	(0.002)***	(0.003)***
Disability	GDP	0.177	20.290	-17.439
		(0.025)***	(2.196)***	(1.890)***
	Old Age	0.049	1.555	1.920
		(0.017)***	(0.207)***	(0.234)***
	Disability	-0.229	-0.301	-0.300
		(0.052)***	(0.084)***	(0.074)***
	Health	0.081	0.954	0.528
		(0.019)***	(0.087)***	(0.086)***
	Social Exclusion	-0.133	-0.009	-0.018
		(0.044)***	(0.012)	(0.013)
	Family	0.319	0.021	0.033
		(0.028)***	(0.020)	(0.016)**
	Unemployment	-0.146	0.038	0.069
		(0.026)***	(0.019)**	(0.021)***
Health	GDP	0.272	-4.163	9.500
		(0.093)***	(0.724)***	(0.918)***
	Old Age	-0.190	-0.473	-0.571
		(0.056)***	(0.065)***	(0.065)***
	Disability	0.069	0.106	0.127
		(0.130)	(0.013)***	(0.014)***
	Health	0.512	0.165	0.248
		(0.095)***	(0.032)***	(0.041)***
	Social Exclusion	-1.840	-0.014	-0.008
		(0.238)***	(0.003)***	(0.003)**
	Family	0.477	0.008	0.007
		(0.107)***	(0.007)	(0.009)
	Unemployment	-0.174	-0.007	-0.033
		(0.088)**	(0.006)	(0.007)***
Social Exclusion	GDP	0.023	-12.884	54.947
		(0.028)	(4.675)***	(5.276)***
	Old Age	-0.047	1.271	0.383
		(0.011)***	(0.357)***	(0.383)
	Disability	-0.008	-0.317	-0.299
		(0.041)	(0.092)***	(0.156)*
	Health	0.118	-0.940	-0.623
		(0.024)***	(0.170)***	(0.187)***
	Social Exclusion	-0.520	0.058	0.068
		(0.062)***	(0.033)*	(0.040)*

	Family	0.053	0.046	-0.057
		(0.022)**	(0.042)	(0.041)
	Unemployment	0.054	-0.032	-0.153
		(0.025)**	(0.045)	(0.039)***
Family	GDP	0.097	-4.279	-6.557
		(0.030)***	(1.616)***	(2.003)***
	Old Age	0.005	1.450	1.596
		(0.016)	(0.144)***	(0.155)***
	Disability	0.290	0.030	-0.002
		(0.049)***	(0.023)	(0.030)
	Health	0.129	-0.002	0.007
		(0.018)***	(0.075)	(0.066)
	Social Exclusion	-0.126	-0.007	-0.042
		(0.045)***	(0.009)	(0.009)***
	Family	0.201	-0.078	-0.054
		(0.029)***	(0.019)***	(0.017)***
	Unemployment	-0.265	-0.039	-0.032
		(0.027)***	(0.017)**	(0.015)**
Unemployment	GDP	0.328	-17.724	21.408
		(0.060)***	(1.790)***	(1.888)***
	Old Age	0.035	-0.396	-1.352
		(0.022)	(0.171)**	(0.186)***
	Disability	0.205	0.123	0.141
		(0.078)***	(0.028)***	(0.026)***
	Health	0.245	-0.189	-0.115
		(0.050)***	(0.056)***	(0.061)*
	Social Exclusion	-0.642	-0.017	-0.028
		(0.090)***	(0.009)**	(0.010)***
	Family	0.173	0.006	0.045
		(0.042)***	(0.019)	(0.017)***
	Unemployment	0.106	-0.004	-0.032
		(0.046)**	(0.021)	(0.022)
N		232	232	232

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A2. PVAR Results (1995-2007)

Y	X	Model 1	Model 2	Model 3
GDP	GDP	0.971	0.329	0.259
		(0.009)***	(0.072)***	(0.103)**
	Old Age	-0.004	0.006	0.003
		(0.005)	(0.004)	(0.003)
	Disability	0.009	0.002	-0.003
		(0.014)	(0.004)	(0.004)
	Health	0.020	-0.004	0.019
		(0.006)***	(0.001)***	(0.001)***
	Social Exclusion	0.142	-0.000	-0.000

		(0.032)***	(0.000)	(0.000)
	Family	0.073	-0.000	0.000
		(0.011)***	(0.001)	(0.000)
	Unemployment	0.008	0.001	-0.000
		(0.005)	(0.000)*	(0.000)
Old Age	GDP	-0.272	-3.474	6.470
		(0.117)**	(0.851)***	(0.753)***
	Old Age	0.016	-0.048	-0.075
		(0.051)	(0.041)	(0.049)
	Disability	1.079	-0.008	0.006
		(0.158)***	(0.013)	(0.011)
	Health	0.005	-0.027	0.114
		(0.085)	(0.022)	(0.021)***
	Social Exclusion	-0.688	-0.006	-0.006
		(0.125)***	(0.002)***	(0.002)***
	Family	0.133	0.009	-0.002
		(0.083)	(0.010)	(0.008)
	Unemployment	-0.275	0.014	0.009
		(0.067)***	(0.003)***	(0.004)**
Disability	GDP	-0.222	-88.443	113.005
		(0.043)***	(7.896)***	(8.433)***
	Old Age	-0.000	-0.062	-1.716
		(0.030)	(0.219)	(0.248)***
	Disability	-0.511	-0.262	-0.263
		(0.085)***	(0.073)***	(0.055)***
	Health	0.200	0.513	1.211
		(0.035)***	(0.129)***	(0.154)***
	Social Exclusion	-0.429	-0.007	0.001
		(0.108)***	(0.012)	(0.012)
	Family	0.383	0.158	0.188
		(0.071)***	(0.045)***	(0.069)***
	Unemployment	-0.165	0.213	0.236
		(0.026)***	(0.017)***	(0.026)***
Health	GDP	-0.346	-1.407	1.423
		(0.091)***	(1.387)	(1.413)
	Old Age	0.056	-0.212	-0.065
		(0.079)	(0.061)***	(0.051)
	Disability	-1.186	0.090	0.079
		(0.175)***	(0.034)***	(0.029)***
	Health	0.434	0.497	0.322
		(0.082)***	(0.034)***	(0.029)***
	Social Exclusion	-1.159	-0.012	-0.021
		(0.258)***	(0.004)***	(0.003)***
	Family	0.452	0.031	0.007
		(0.161)***	(0.011)***	(0.007)
	Unemployment	-0.329	-0.025	-0.026
		(0.066)***	(0.006)***	(0.008)***
Social Exclusion	GDP	0.028	93.416	-123.286
		(0.030)	(11.885)***	(11.868)***
	Old Age	0.020	1.610	3.965

		(0.017)	(0.547)***	(0.737)***
	Disability	-0.313	0.318	0.256
		(0.050)***	(0.142)**	(0.180)
	Health	0.038	-1.221	-2.094
		(0.016)**	(0.301)***	(0.320)***
	Social Exclusion	-0.141	0.081	0.109
		(0.054)***	(0.046)*	(0.049)**
	Family	0.083	-0.174	-0.177
		(0.031)***	(0.173)	(0.194)
	Unemployment	-0.044	-0.225	-0.158
		(0.024)*	(0.064)***	(0.076)**
Family	GDP	-0.058	-3.564	3.116
		(0.043)	(3.585)	(3.422)
	Old Age	0.002	1.969	0.525
		(0.016)	(0.260)***	(0.158)***
	Disability	0.285	0.131	0.056
		(0.045)***	(0.037)***	(0.028)**
	Health	0.018	0.929	0.629
		(0.023)	(0.130)***	(0.078)***
	Social Exclusion	0.234	-0.035	-0.035
		(0.063)***	(0.012)***	(0.008)***
	Family	0.185	-0.024	0.046
		(0.040)***	(0.065)	(0.034)
	Unemployment	-0.084	-0.027	0.030
		(0.018)***	(0.026)	(0.027)
Unemployment	GDP	0.136	29.746	-34.044
		(0.084)	(3.910)***	(5.362)***
	Old Age	0.030	0.152	0.356
		(0.037)	(0.129)	(0.103)***
	Disability	-0.149	0.058	0.086
		(0.113)	(0.049)	(0.042)**
	Health	0.337	-0.422	-0.509
		(0.052)***	(0.076)***	(0.086)***
	Social Exclusion	-1.063	-0.026	-0.029
		(0.163)***	(0.009)***	(0.010)***
	Family	0.521	-0.061	-0.086
		(0.098)***	(0.020)***	(0.024)***
	Unemployment	0.990	0.044	0.035
		(0.058)***	(0.028)	(0.030)
N		143	143	143

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A3. PVAR Results (Mediterranean Countries Only)

Y	X	Model 1	Model 2	Model 3
GDP	GDP	0.800	0.690	0.724
		(0.050)***	(0.107)***	(0.114)***
	Old Age	-0.017	0.007	-0.007

		(0.013)	(0.009)	(0.010)
	Disability	-0.034	-0.003	0.002
		(0.066)	(0.004)	(0.005)
	Health	0.025	-0.007	0.009
		(0.014)*	(0.008)	(0.009)
	Social Exclusion	-0.048	0.000	-0.000
		(0.063)	(0.001)	(0.001)
	Family	0.072	0.001	-0.001
		(0.029)**	(0.001)	(0.001)
	Unemployment	0.017	-0.002	0.002
		(0.017)	(0.001)	(0.001)
Old Age	GDP	2.351	-3.313	3.412
		(0.731)***	(1.282)***	(1.340)**
	Old Age	-0.047	0.236	0.237
		(0.289)	(0.075)***	(0.075)***
	Disability	0.086	0.069	0.067
		(1.073)	(0.040)*	(0.039)*
	Health	-0.423	0.009	0.015
		(0.325)	(0.077)	(0.081)
	Social Exclusion	0.622	-0.008	-0.008
		(1.226)	(0.006)	(0.006)
	Family	0.127	-0.011	-0.012
		(0.687)	(0.010)	(0.010)
	Unemployment	0.077	-0.011	-0.011
		(0.288)	(0.010)	(0.010)
Disability	GDP	0.179	-6.433	5.613
		(0.181)	(4.643)	(4.776)
	Old Age	0.004	-0.067	-0.037
		(0.046)	(0.219)	(0.212)
	Disability	-0.172	-0.093	-0.093
		(0.182)	(0.264)	(0.260)
	Health	0.057	0.274	0.274
		(0.051)	(0.376)	(0.394)
	Social Exclusion	0.330	-0.005	-0.006
		(0.219)	(0.020)	(0.020)
	Family	0.032	0.028	0.024
		(0.101)	(0.026)	(0.024)
	Unemployment	-0.037	-0.040	-0.041
		(0.048)	(0.052)	(0.057)
Health	GDP	-1.645	-1.672	1.089
		(0.810)**	(2.266)	(2.339)
	Old Age	0.179	-0.168	-0.151
		(0.201)	(0.178)	(0.177)
	Disability	-1.245	-0.039	-0.037
		(1.279)	(0.096)	(0.099)
	Health	0.198	0.317	0.326
		(0.205)	(0.163)*	(0.183)*
	Social Exclusion	-0.501	-0.024	-0.025
		(0.783)	(0.009)**	(0.009)***
	Family	0.524	0.018	0.016
		(0.590)	(0.023)	(0.021)

	Unemployment	0.569	-0.014	-0.020
		(0.360)	(0.041)	(0.045)
Social Exclusion	GDP	-0.222	17.306	-16.122
		(0.129)*	(17.668)	(17.898)
	Old Age	0.038	-0.111	-0.084
		(0.030)	(2.193)	(2.208)
	Disability	-0.214	0.882	0.861
		(0.145)	(0.542)	(0.564)
	Health	0.025	2.336	2.516
		(0.031)	(1.752)	(1.847)
	Social Exclusion	-0.039	0.228	0.229
		(0.144)	(0.209)	(0.210)
	Family	-0.060	0.210	0.197
		(0.071)	(0.121)*	(0.124)
	Unemployment	0.064	-0.061	-0.088
		(0.054)	(0.171)	(0.161)
Family	GDP	-0.199	-10.713	9.955
		(0.201)	(12.827)	(12.764)
	Old Age	0.027	1.179	1.215
		(0.046)	(1.197)	(1.199)
	Disability	-0.041	-0.532	-0.536
		(0.341)	(0.340)	(0.339)
	Health	0.047	0.843	0.883
		(0.062)	(0.791)	(0.844)
	Social Exclusion	-0.111	-0.038	-0.038
		(0.279)	(0.058)	(0.058)
	Family	0.020	0.054	0.048
		(0.157)	(0.087)	(0.083)
	Unemployment	0.007	0.105	0.094
		(0.084)	(0.179)	(0.187)
Unemployment	GDP	-0.065	-14.761	13.590
		(0.470)	(11.144)	(12.315)
	Old Age	0.213	-0.563	-0.507
		(0.104)**	(0.363)	(0.382)
	Disability	-0.656	-0.075	-0.087
		(0.564)	(0.626)	(0.622)
	Health	0.073	-0.323	-0.315
		(0.096)	(1.063)	(1.147)
	Social Exclusion	-0.172	0.038	0.039
		(0.454)	(0.035)	(0.034)
	Family	0.420	0.062	0.053
		(0.270)	(0.081)	(0.077)
	Unemployment	0.063	0.050	0.055
		(0.244)	(0.263)	(0.275)
N		64	64	64

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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