IS THERE A DOMINANCE OF SOCIAL PROTECTION EXPENDITURE IN THE EUROPEAN UNION?

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ABSTRACT
European welfare states, with their comprehensive and generous welfare model, create the largest part of general government expenditures in the European Union member countries. Given the rising trend of social expenditure and the long-run challenges coming from population ageing, this paper addresses the issue of social dominance, a situation in which, particularly when facing limited fiscal space, social expenditure could crowd-out other productive public expenditures, thus undermining growth potentials and possibly threatening fiscal sustainability. Using a panel regression analysis, the aim of the paper is to test whether social protection expenditure has crowded-out expenditures on other purposes in the European Union in the period 1995-2018. The results provide some evidence of crowding-out of infrastructure spending and education spending. Additionally, deficit financing and rising government debt have a significant adverse effect on spending on infrastructure, education and core public services, confirming that they are more prone to cutbacks in times of deteriorating public finance. These findings, along with the long-run fiscal pressure from the 'greying population' and the high political costs of welfare reforms suggest significant future risks of social dominance.

Keywords: Fiscal policy, Social protection expenditure, Social dominance, Crowding-out.

JEL classification: E62, I3, H55, I30

1. INTRODUCTION

Since the end of the Second World War, especially since the 1960s, the political economy of Europe has been defined by the development of a comprehensive and generous welfare model. While total public expenditures as a share of GDP have increased drastically in industrialized economies since 1960, the rise in expenditure has been concentrated on social expenditures, whose share in terms of GDP has tripled in the period. This was fueled by the expansion of the social welfare state together with increasing costs of services and an ageing population, which demanded higher-quality health services and a more generous pension system. Despite the rise of retrenchment narrative in the 1990s, in many countries welfare outlays have actually

increased since then. The increase in government revenues was not enough over the whole period to cater for the increased expenditures, leading to a significant build-up of government debt. The latter put pressure on governments, in particular at times of economic distress, making it more likely for the government budget constraint to bite during crisis times (Delgado-Tellez et al., 2020). Pressures on public finances, and the burden that social spending imposes on the 'productive' parts of economies, raise questions about whether European countries can still afford their welfare states. With limited fiscal space, social expenditure could crowd-out other productive expenditures, thus undermining growth potentials. This is known as 'social dominance', a term coined by Schuknecht and Zemanek (2018). They argue that this might even worsen social cohesion if only the rich can offset deteriorating public services (security, education, infrastructure) with private spending. Some explanations offered in the literature on why rising social expenditure could crowd-out other government expenditures are the higher political costs of cutting social expenditures. The political benefits in terms of voters and special interest support from social expenditure accrue immediately while the benefits of more productive spending and sound public finances tend to accrue only over time (Buchanan and Tullock, 1962). There is more inertia in social spending than in other parts of public spending that could be administratively more easily reduced. Due to limits to taxation, a trade-off emerges between social expenditure and other public expenditures, such as public investment and education expenditure, while stickier items such as public order and security spending, which are necessary for a stable institutional environment, are more resilient (Delgado-Tellez et al., 2020).

There is not a large empirical literature body exploring the possible dominance of social expenditure. The studies mainly focus on OECD countries and include various components of social spending and other public spending items. Bonoli and Reber (2010) and Bonoli (2013) examined the effect of old-age related expenditure on childcare services and on active labour market spending policies (ALMPs) spending, respectively, and found a negative effect on both components of social investment. Kim and Choi (2020) analyzed the relationship between social protection spending and social investment in the OECD countries and could not confirm the crowding-out effect in general. However, they established that the impact has turned negative in the more recent period, more pronounced for unemployment benefit spending than for pension spending. Schuknecht and Zemanek (2018) found some evidence of social spending dominance. Their results indicated a negative effect of social spending on infrastructure and on education (though the latter only significant at 10% significance level), while their regressions yielded insignificant coefficients for core public service spending. Delgado-Tellez et al. (2020) also found evidence of social spending crowding-out public investment.

This paper contributes to this literature and investigates whether social expenditure dominates fiscal policy in the European Union, i.e. whether social expenditure crowd-out more productive spending, thus undermining growth potential and endangering fiscal sustainability. Our sample differs from the reviewed studies and includes all member states of the EU. The paper is structured as follows. Section 2 examines the trends of social expenditure in the EU, followed by a descriptive analysis of the relationship between social protection expenditure and expenditure on infrastructure, public core services and education in Section 3. Section 4 introduces the methodology and data used. Section 5 presents the empirical results and section 6 gives concluding remarks.

2. SOCIAL PROTECTION EXPENDITURE IN THE EUROPEAN UNION

Spending on welfare presents the largest part of general government expenditures in the European Union member countries (see Figure 1). The largest share of total expenditure in

2018 was dedicated to social protection - 41.2%, followed by health expenditure with 15%. The share of government expenditure dedicated to social protection and health increased from 38.1% and 13.2% in 2001, respectively. Social protection accounts for 18.6% of GDP, while health accounts for 7% of GDP (increased from 17.3% and 6% in 2001). They constitute a largest share of GDP in France, Denmark and Finland, while the smallest in Ireland, Romania and Cyprus. On the other hand, total government expenditure grew from 45,1% of GDP to 45,8% of GDP (Figure 2). The share of education on the other hand, which is a social investment especially important for strengthening the human capital, has slightly fallen, from 10.3% to 9.9% of the GDP. Additionally, the expenditures on other purposes also fell, most notably those dedicated to general public services (from 16,6% of GDP to 12,9% of GDP). This also implies a certain crowding-out by social expenditure. Namely, the increase in social protection expenditure and health expenditure as a percentage of GDP was compensated by a decrease in other government expenditure functions. (Eurostat, 2020) Of course, the rising social expenditures were also financed by a rising public debt and in some countries rising revenues compensated the increase in spending (see for example Schuknecht and Zemanek, 2018, for analysis on OECD countries).

Figure 1: General government expenditure by function (COFOG) (% of GDP)
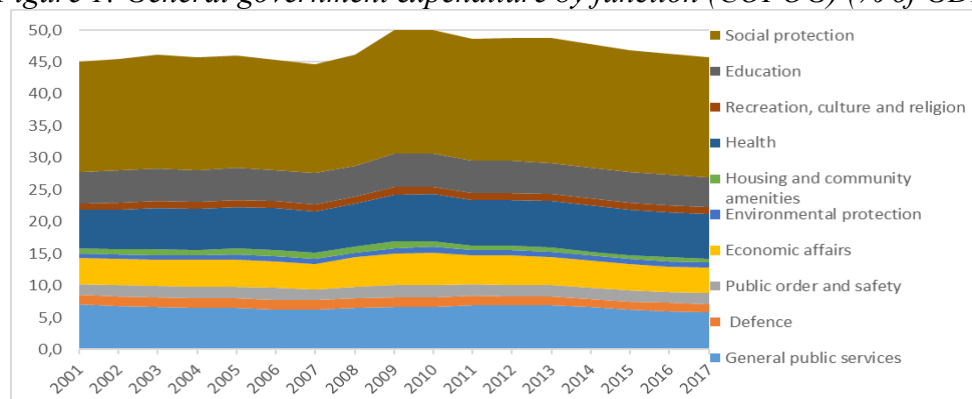
(Source: Eurostat database)

Figure 2 illustrates the evolution of social protection expenditure versus the evolution of total general government expenditures in the period 2001-2018. After a period of falling expenditure ratios in times of strong economic growth, a jump in both social and total expenditure was triggered by the Great Recession. A particularly big jump in expenditures was recorded in 2009. Total government expenditure had a steeper drop than social protection expenditure after the financial crisis (whether because the latter played its automatic stabilizing function or in order to protect particular segments of the population for political reasons), implying that the rising social expenditure had crowded out other public expenditure, and all of this occurred despite the 'austerity' narrative (Begg et al., 2015). Social spending thus has proved to be more immune to fiscal retrenchment than other public policy areas such as defense, education, economic affairs, public investments. However, the fiscal austerity measures did not leave social expenditure untouched, the reductions being more visible in the most recent period on the graph. After a double peak trend until 2014, public expenditure started to gradually decline in the last few years, partly due to reduction of spending, partly because of the resumed growth, but is still above the pre-crisis level.

Figure 2: Social protection expenditure and total public expenditure (% of GDP)
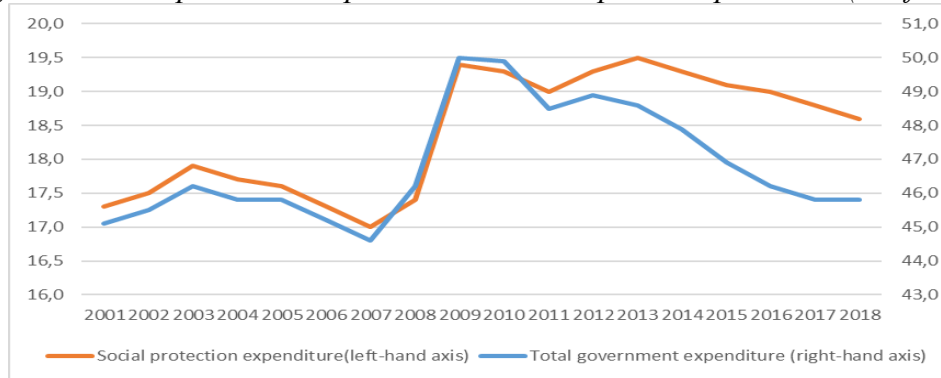
(Source: Eurostat database)

The member countries of the European Union differ regarding the generosity and universality of benefits, the different financing sources etc. The European welfare state literature recognizes the following groups of countries (see Obinger and Wagschal, 2012; Hemerijck et al., 2013; Kostadinova, 2014; ILO, 2017): Nordic (Social-democratic); Continental (Conservative-corporatist); Anglo-Saxon (Liberal); Mediterranean (Southern European); Central-Eastern European – in more recent studies. Hence, social protection expenditure differs significantly among countries, ranging from 12.41% of GDP in Central-Eastern Europe to 21.83% of GDP in Nordic countries. Despite the narrowing of cross-national differences in the last few decades, the division between larger spenders from the Nordic and Continental group and smaller spenders from the other groups exist. CEE countries have the lowest social protection expenditure ratios in the EU. Over the analyzed period, the Mediterranean countries, starting from a very low level, experienced the largest increase in social protection expenditure from 12.53% in 1995 to 16.2% of GDP in 2018, while social expenditure in the Nordic countries declined from 25.23% in 1995 to 21.83% of GDP in 2018. On the other hand, the Central-Eastern and Continental European countries maintained relatively constant levels of social protection expenditure around 13% and 19%, respectively. The cyclical component is evident after 2008 when social spending grew in almost all analyzed countries. After the initial increase due to the response to the crisis, social spending has stabilized and even declined in some groups of countries, as part of the austerity measures aimed at improving their public finances. The same dynamics would be evident if we include health expenditure in a wider social expenditure variable.

Figure 2: Social protection expenditure % of GDP in the EU country groups, 1995-2018
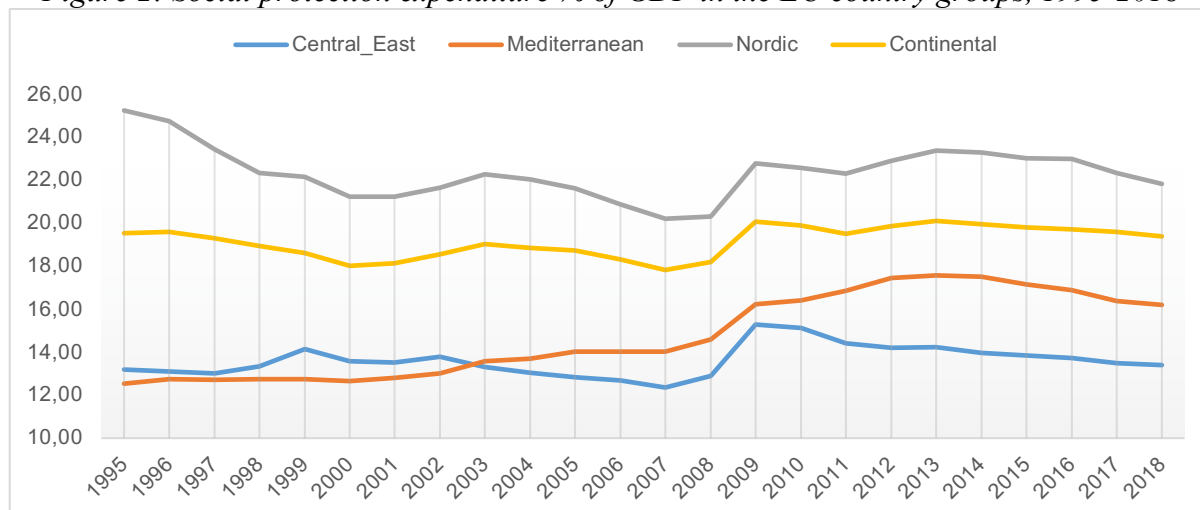
3. IS THERE A RISK OF SOCIAL DOMINANCE IN THE EU?

In order to determine whether social protection expenditure had some crowding-out effect on other public expenditures in European countries, we analyze its relationship with public gross fixed capital formation, core public expenditure and public education expenditure. The data captures the average value of each country group for every fifth year, beginning with 1995.

The correlation between social spending and public investments over the period 1995-2018 is given in figure 3. Public investments differ significantly, ranging from 2.2% of GDP in 2019 in Continental European countries to 4.2% of GDP in Central-Eastern countries. As shown in figure 3, a strong negative correlation between social protection expenditure and public gross fixed capital formation (both as % of GDP) is observed only in the case of the Mediterranean countries. On the other hand, in the Continental and Nordic countries there is moderate positive correlation between social spending and public investment, while in the Central-Eastern European countries there is a stronger positive correlation between the two analyzed variables.

Figure 3: Social protection expenditure and public gross fixed capital formation expenditure in the EU, by country group (1995-2018)
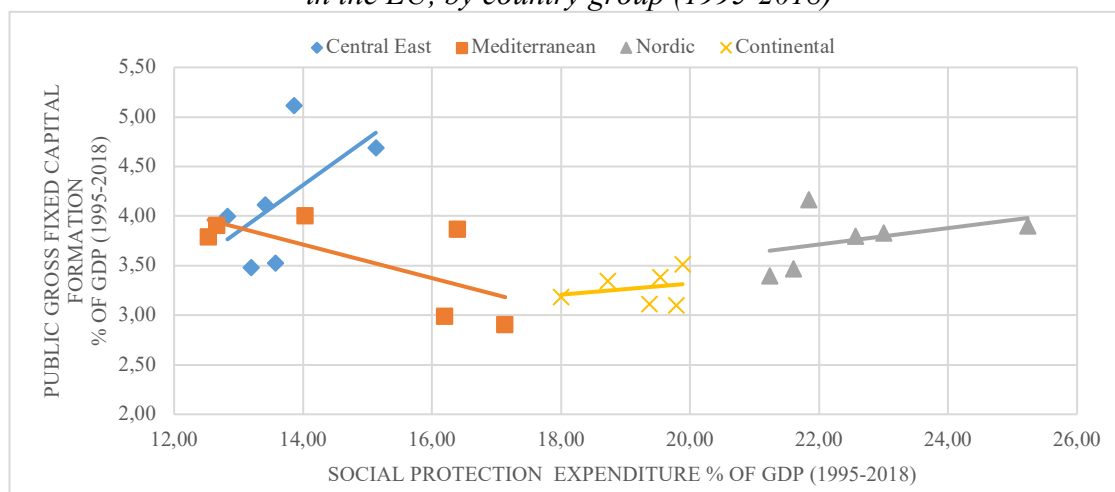
(Source: Eurostat database, authors' calculations)

The correlation between social spending and core public service expenditure (general public service, public order and safety, defense and recreation, culture and religion) is given in figure 4. Over the period 1995-2018, core public expenditure as % of GDP has declined in all European countries, from 14.87% to 11% in Nordic countries, from 14.18% to 10.72% in Mediterranean countries, from 12.68% to 9.48% in Continental countries and from 11.97 to 9.66% in Central-Eastern countries. In addition, the figure shows that there is a negative correlation between social protection expenditure and core public expenditure in all groups except for Nordic countries.
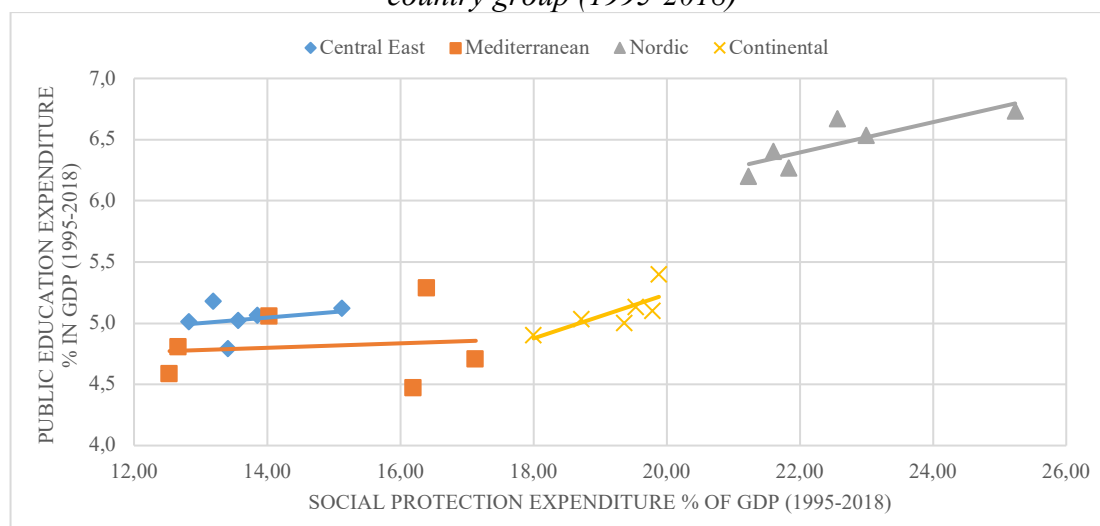
Figure 4: Social protection expenditure and core public service expenditure in the EU, by country group (1995-2018)
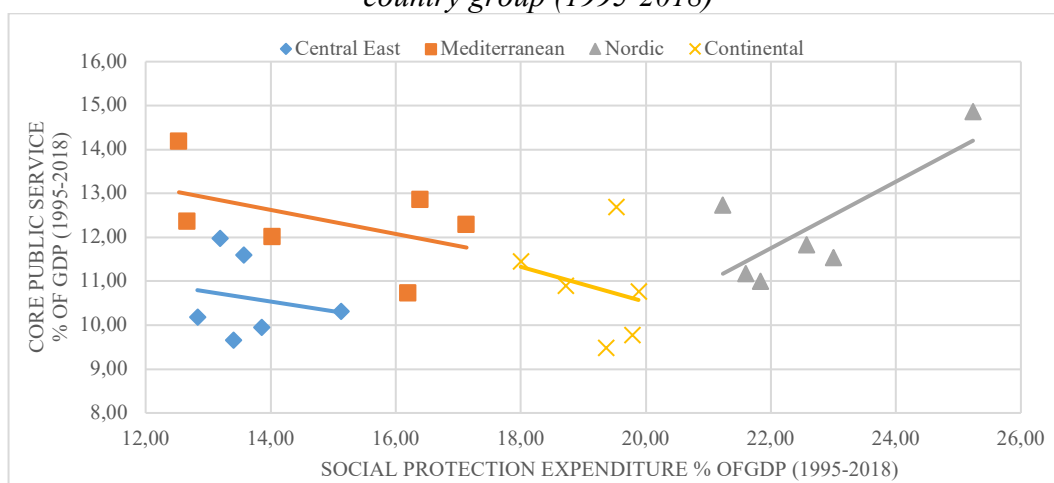
(Source: Eurostat database, authors' calculations)

As for public education, Nordic countries have the highest average education expenditure related to GDP (6.3%), while the Mediterranean countries are at the bottom with the lowest average education expenditure (4.5%). According to the data, over the analyzed period (1995-2018), education expenditure had remained relatively stable in Continental and Mediterranean countries and it has slightly declined in Central-Eastern and Nordic countries. Figure 5 doesn't provide evidence that social protection expenditure crowded out education expenditure in European countries, on contrary data shows that here is a positive correlation between the two variables in all four analyzed groups.

Figure 5: Social protection expenditure and public education expenditure in the EU, by country group (1995-2018)

(Source: Eurostat database, authors' calculations)

4. METHODOLOGY AND DATA

The crowding out effect of social protection expenditure is examined by estimating six panel regression models. The purpose is to test whether social protection expenditure crowded out expenditure on infrastructure, core public service and education. The observed period is from 1995 to 2018 and the models include twenty-seven countries, current members of the European

Union. The total number of observations is 648. The summary of the variables is presented in Table 1.

Table 1: Variables included in the analysis

Dependent variables	Independent variables	Control variables
INF - Public gross fixed capital formation (% of GDP)	ΔGDP-trend - Business cycle	NETLEND – Net lending (% of GDP)
CORE - Core public service (% of GDP)	SOEXP - Social protection expenditure (% of GDP)	DEBT – Gross debt (% of GDP)
EDU - Education expenditures (% of GDP)		TERT – Tertiary school enrolment (%)

(Source: Eurostat, IMF, World Bank)

The empirical investigation includes as dependent variables the following general government expenditures: infrastructure (INF), proxied by government gross fixed capital formation, core public service (CORE), which includes general public services, public order, recreation and culture, defense, and education (EDU). The key explanatory variables are the business cycle (ΔGDP-trend) and social protection expenditure (SOEXP). The business cycle or automatic stabilizers is a variable that is derived from the difference between real GDP growth (in %) and the trend that was calculated with Hodrick–Prescott filter. For each dependent variable, a second equation is estimated, where net lending (NETLEND) and general government gross debt (DEBT) are included as control variables. The data on the various government expenditure items and real GDP growth rate are retrieved from Eurostat, the data on gross general government debt and net lending/borrowing come from IMF's World Economic Outlook database and the data on tertiary school enrolment are retrieved from World Bank. The estimated panel regression equations are as follows.

The first equation examines the impact of social protection expenditure (SOEXP) (up to four-time lags) on the differenced public gross fixed capital formation (INF), including the business cycle (ΔGDP-trend) as an additional explanatory variable. The noise term is represented with $\varepsilon_{i,t}$ and the country fixed effects with u_i:

$$\Delta INF_{i,t} = \beta_1\left(\Delta GDP_{i,t} - trend_{i,t}\right) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) + \beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + u_i + \varepsilon_{i,t} \tag{1}$$

The second equation is an extension of the first one. Net lending (% of GDP) (NETLEND) and gross debt (% of GDP) (DEBT), both with one-time lag, are included in the equation as control variables:

$$\Delta INF_{i,t} = \beta_1\left(\Delta GDP_{i,t} - trend_{i,t}\right) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) + \beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + \beta_5(NETLEND_{t-1}) + \beta_6(DEBT_{t-1}) + u_i + \varepsilon_{i,t} \tag{2}$$

The third equation treats CORE (core public service as % of GDP) as a differenced dependent variable, while the independent variables are the same as in equation one:

$$\Delta CORE_{i,t} = \beta_1\left(\Delta GDP_{i,t} - trend_{i,t}\right) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) + \beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + u_i + \varepsilon_{i,t} \tag{3}$$

Equation four includes $\Delta CORE_{i,t}$ as dependent variable, and the independent variables are the same as the ones in equation two:

$$\Delta INF_{i,t} = \beta_1(\Delta GDP_{i,t} - trend_{i,t}) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) +$$
$$\beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + \beta_5(NETLEND_{t-1}) + \beta_6(DEBT_{t-1}) + u_i + \varepsilon_{i,t} \quad (4)$$

The final two equations consider the differenced variable EDU (education expenditure as % of GDP) as dependent variable. In equation five the independent variables are the same as in equations one and three:

$$\Delta EDU_{i,t} = \beta_1(\Delta GDP_{i,t} - trend_{i,t}) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) +$$
$$\beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + u_i + \varepsilon_{i,t} \quad\quad\quad (5)$$

Equation 6 has the same dependent variable as equation 5, while the independent variables expanded with control variables NETLEND, DEBT and differenced and logarithm values of TERT (tertiary school enrolment in %):

$$\Delta EDU_{i,t} = \beta_1(\Delta GDP_{i,t} - trend_{i,t}) + \beta_2(\Delta SOEXP_{t-1}) + \beta_3(\Delta SOEXP_{t-2}) +$$
$$\beta_3(\Delta SOEXP_{t-3}) + \beta_4(\Delta SOEXP_{t-4}) + \beta_5(NETLEND_{t-1}) + \beta_6(DEBT_{t-1}) +$$
$$\beta_7(\Delta logTERT_{t-1}) + u_i + \varepsilon_{i,t} \quad\quad\quad (6)$$

4. DISCUSSION OF RESULTS

To explore the hypotheses of crowding out of more productive public expenditures by rising social protection expenditure, we estimate how the change in the social protection expenditure ratio (SOEXP) affects infrastructure spending (INF), core public administration (CORE) and public education spending (EDU). The effect of social protection expenditure is tested for up to four-time lags since rising social spending might crowd out other budgetary outlays gradually and with certain delays (see also Kim and Choi, 2020). If a statistically significant negative coefficient is estimated for the social expenditure variable, we can conclude that crowding out is at work (Schuknecht and Zemanek, 2018). The results from the estimated equations are presented in Table 2.

Table 2. Crowding out effects of social protection expenditure, 1995-2018, EU27 countries

Dependent variable	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6
	ΔINF	ΔINF	ΔCORE	ΔCORE	ΔEDU	ΔEDU
CONS	0.012	0.187*	-0.104***	0.346***	-0.006	0.134**
ΔGDP-trend	0.032***	0.030***	-0.068***	-0.066***	-0.040***	-0.039***
Δ(SOEXP t-1)	-0.011	0.028	-0.005	0.006	-0.036	-0.041**
Δ(SOEXP t-2)	-0.091*	-0.040	-0.007	0.029	-0.024	-0.016
Δ(SOEXP t-3)	-0.053	-0.015	-0.011	0.017	-0.030*	-0.022
Δ(SOEXP t-4)	-0.060	-0.026	0.006	0.045	-0.021	0.001
NETLEND (t-1)		0.040***		0.023*		0.004
DEBT (t-1)		-0.001		-0.007***		-0.003***
Δ(log(TERT)						0.724**
R-squared	0.061	0.083	0.099	0.135	0.158	0.192
Observations	506	505	507	506	507	437
Fixed effect	Country	Country	Country	Country	Country	Country
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

*, **, *** Statistical significance levels of 10,5 and 1%
(Source: Authors' calculations)

Regarding public infrastructure spending there seem to be some evidence of crowding out caused by the social protection expenditure, since there is a statistically significant coefficient for two-time lags in equation 1. If social protection expenditure grows by one percentage point, there should be a decrease in public infrastructure spending by 0.091 percentage points. However, when the control variables are included in equation 2, this relationship does not prove to be significant. On the other hand, the second equation confirms that there is a statistically significant positive short-term effect of net lending on the public infrastructure spending. This implies that larger deficits are followed by reduced infrastructure spending, confirming the claim that infrastructure spending is crowded out also indirectly by more deficit financing.

When core public administration is considered, the results from equations 3 and 4 do not seem to indicate presence of crowding out by social protection expenditure. As for infrastructure, larger deficits seem to cause scaling back of expenditure on core public service. Also, larger gross debt has an inverse and statistically significant effect on core administration spending, implying that rising debt and tightening fiscal space tend to lead to cuts in this component of public spending.

The last two specification refer to the effect of social spending on education spending. They confirm that a statistically significant effect from social spending on education expenses exists (though with a different time delay), thus crowding out is confirmed. There is a statistically significant indirect effect from gross debt and a positive effect from tertiary school enrolment. Similar to core public administration spending, an increase in gross debt causes a reduction in education spending. Ain the end, as expected, higher tertiary school enrolment rates contribute to more spending on education.

5. CONCLUSION

This paper analyzed the interaction of social protection expenditure with other government expenditure items in the European Union for the period 1980-2018, more specifically with spending on public infrastructure, education and core public service. The main objective was to test whether the 'social dominance hypothesis' is valid for this set of countries. This hypothesis claims that the upward social expenditure trends, related mostly to ageing populations and social preferences, are accompanied by declining expenditure in more productive areas of public expenditure. This could undermine the growth potential and could also threaten long-run fiscal sustainability. These spending items are usually more vulnerable to spending cuts in times of fiscal austerity, while social spending seems to be more resilient to adjustment measures.

The empirical results find some evidence for the social dominance hypothesis. There is some evidence of crowding out of infrastructure spending, but once fiscal balance is introduced in the equation, this effect disappears. Larger deficits are followed by a scaling back in public infrastructure expenditure, confirming the claim that infrastructure spending is crowded out not only by social protection expenditure, but mostly indirectly by more deficit financing. Deficit financing also negatively affects core public administration expenditure and additionally rising debt and tightening fiscal space tend to lead to cuts in this component of public spending. The results confirm a crowding-out effect of social spending on education spending. Education spending is also found to be negatively affected by increases in gross public debt but positively affected by tertiary school enrolment. The results indicate that in the analyzed period the fiscal balance and the fiscal space in the European Union countries have been a more significant determinant of spending on infrastructure, education and core public administration, confirming that they are more prone to cutbacks in times of worsening public finance, when governments take measure to contain the rising indebtedness.

Considering the results, it would be important for welfare states to pursue restructuring of existing social policies to cope with increasing social risks without losing the productive elements. It is not an easy task to introduce and implement efficient (and politically not very costly) measures for containing social spending, given the long-run pressure from population ageing. The old-age dependency ratio in the European Union already reached 30.5% in 2018. Yet, some measures identified in the literature could help contain rising social spending and reduce the risk of social dominance, many of which the European Union has already introduced. European Union countries have undertaken pension reforms in order to make pension systems sustainable under conditions of low or declining fertility and increasing life expectancy, such as: increasing the retirement age, limiting early exit, introducing occupational and private pillars on top of the public pension schemes and redefining the actuarial links between contributions and benefits. The demographic impact of population ageing can be partly alleviated with qualified immigration, particularly if migrants are predominantly younger working-age people. However, if the migrant structure is such that most do not join the labour market, then this would increase the welfare burden and their role in countering population ageing would be questionable. Additionally, countries work on improving the flexibility of labour markets and helping people balance work and family, so as to alleviate the difficulties of work-life balance and increase the work incentives of parents of small children. The EU member countries have agreed upon the European Pillar of Social Rights ('Social pillar') in 2017, which combines the principles of social investment, which enhances human capital, with social protection and stabilization and stresses the strong link between labour force activation and access to quality services (childcare, housing, healthcare).

REFERENCES

Afonso, A., (2005), "Fiscal Sustainability: The Unpleasant European Case", *FinanzArchiv/ Public Finance Analysis*, Vol. 61, pp. 19–44.

Barr, N., (2012), *Economics of the Welfare State,* 5th edition, Oxford University Press.

Begg, I., Mushövel, F. and Niblett, R., (2015), "The Welfare State in Europe - Visions for Reform", Chatham House Europe Programme, Research paper, The Royal Institute of International Affairs.

Bonoli, G., and Reber, F., (2010), "The political economy of childcare in OECD countries: Explaining cross-national variation in spending and coverage rates", *European Journal of Political Research*, Vol. 49(1), 97–118.

Bonoli, G., (2013), *The origins of active social policy: Labour market and childcare policies in a comparative perspective*, Oxford: Oxford University Press.

Buchanan, J.M. and Tullock, G., (1962), *The calculus of consent*, Ann Arbor: University of Michigan press.

Burret, H., Feld, L. and Köhler, E., (2015), "Fiscal Sustainability of the German Laender: Time Series Evidence", *Freiburger Diskussionspapiere zur Ordnungsökonomik,* No. 15/11.

Castles, F., (2004), *The Future of the Welfare State: Crisis Myths and Crisis Realities*, New York: Oxford University Press.

Czech S. and Tusińska M., (2016), "Economic growth, public debt and social spending. Should welfare state take the blame?", *Ekonomia i Prawo. Economics and Law,* Vol. 15 (1), pp. 33–45.

Delgado-Téllez, M., Gordo, E., Kataryniuk, I. and Pérez, J., (2020), "The decline in public investment: "social dominance" or too-rigid fiscal rules?", *Documentos de Trabajo,* No. 2025. Banco de España.

Esping-Andersen, G., (1990), *The Three Worlds of Welfare Capitalism*, Cambridge: Polity Press.

European Commission, (2017), *Employment and Social Developments in Europe: Annual Review 2017.* Brussels.

European Commission, (2020a), *Spring 2020 Economic Forecast.*

European Commission, (2020b), *Summer 2020 Economic Forecast.*

Eurostat, (2018), *Social protection statistics,* Eurostat statistics explained. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Social_protection_statistics

Eurostat, (2019), *Ageing Europe: Looking at the lives of older people in the EU,* Statistical books.

Hakkio, C.S. and Rush, M., (1991), "Is the budget deficit "too large?", *Economic inquiry*, Vol. 29(3), pp.429-445.

Hemerijck, A., Dräbing, V., Vis, B., Nelson, M. and Soentken, M., (2013), "European welfare states in motion", *Neujobs Working Paper* No. D5.2.

ILO, (2017), *World Social Protection Report 2017–19: Universal social protection to achieve the Sustainable Development Goals,* International Labour Office – Geneva: International Labour Organization.

Kim, Y.Y. and Choi, Y.J., (2020), "Does social protection crowd out social investment?", *Policy and Society*, Vol.39:2, pp. 208-225, DOI: 10.1080/14494035.2019.1677377.

Kostadinova, P., (2014), "Social Policy Arrangements across Europe: Continuing Disparities between Social Models in the EU?", *L'Europe en Formation*, Vol.2, pp.33-50.

Lee, I., (2018), "Is social expenditure responsible for recent rise in public debt in OECD countries?", *Applied Economics Letters*, Vol. 25(1), pp.43-46.

Lora, E. and Olivera, M., (2007), "Public debt and social expenditure: Friends or foes?", *Emerging Markets Review*, Vol. 8(4), pp.299-310.

Milotay, N., (2018), *Social protection in the EU: State of play, challenges and options*, Briefing EPRS | European Parliamentary Research Service.

Obinger, H. and Wagschal, U., (2012), "Social Expenditure and Revenues". In: Castles, F.G., Leibfried, S., Lewis, J., Obinger, H. and Pierson, C. eds. *The Oxford Handbook of the Welfare State,* Oxford University Press, pp. 333-35.

Richter, C. and Paparas, D., (2013), "How reliable are budget sustainability tests? A case study for Greece", *International Journal of Public Policy,* Vol. 14, 9(1-2), pp.23-43.

Rodríguez-Vives, M. and Kezbere, L., (2019), "Social spending, a euro area cross-country comparison", *Economic Bulletin Articles*, Vol.5.

Schuknecht, L. and Zemanek, H., (2018), "Social dominance", *CESifo Working Paper* No. 6894.

Tashevska, B., Trpkova-Nestorovska, M. and Trenovski, B., (2019), "Socio-economic determinants of social spending in the EU", *CEA Journal of Economics*, Volume 14, Issue 4, pp. 35 – 48.

Van Kersbergen, K., (2015), "The Welfare State in Europe", In *The Search for Europe, Contrasting Approaches*, Madrid: BBVA, Vol. 7.