Social protection benefits and growth: Evidence from the European Union[*]

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Abstract

Using a harmonised data set for the European Union and panel data techniques, and following a production function approach, we find a positive growth effect of total social protection expenditure on growth. When evaluating the effects of different programmes, the results are mixed.

Keywords: social protection benefits, economic growth, European Union.

JEL codes: I38, O40, O52.

1. Introduction

The link between growth and social protection has attracted recently much attention linked to the general issue of the relationship between government expenditure and economic performance [see Atkinson (1995, 1996) for a survey]. There are several reasons to believe that social protection and growth may be related. The so-called "social asset argument" states that high transfers cause high growth due to the institutional assurance individuals face against risks implying loss of income. The fact is that many different programmes are working simultaneously under the terms "Social Protection" both raising reservation wages and confidence that onerous risks are properly covered, and lowering net earnings because of taxes and social contributions. Also, it can happen that built-in stabilisers imply higher social expenditure in the downturns or that higher national income pushes the desire of voters for better social protection.

In this paper we provide evidence on the influence of social protection benefits on economic growth for the EUR12 countries between 1970 and 1994. To that end we follow a production function approach, using data on the twelve European Union (EU) countries existing before the enlargement to Austria, Finland and Sweden. After controlling for capital accumulation and a catching-up factor, our results suggest a positive relationship between social protection benefits and growth.

The rest of the paper is organised as follows. In Section 2 we briefly lay out the theoretical framework. Section 3 describes the data used in the estimation and presents the empirical results. Finally, Section 4 offers some concluding remarks.

2. The model

Our model considers a production function:

$$Y=AK^{\alpha}L^{1-\alpha} \tag{1}$$

where Y denotes output, A is a measure of technology, K is capital stock and L is labour. Dividing expression (1) by L, we have the production function in *per capita* terms:

$$y=Ak^{\alpha} \tag{2}$$

where the lower-case letters denote the *per capita* values of the corresponding upper-case letters. Taking logarithms in (2) and differentiating with respect to time gives us the following expression:

$$g_y=g_A + \alpha g_k \tag{3}$$

where g_x denotes the rate of growth of variable X. Therefore, according with expression (3), the rate of growth of *per capita* production would be the sum of the rate of growth of the technological progress and the rate of growth of the capital stock, the latter in *per capita* terms and weighted by the corresponding elasticity of production with respect to capital.

Regarding g_A, we will assume that it is determined by a catching-up factor and by *per capita* social protection benefits:

$$g_A = \lambda_1 \log(y^*/y) + \lambda_2 sp \tag{4}$$

where the catching-up factor is proxied by the logarithmic difference in *per capita* production between the country more technologically advanced (USA in our case)

and the country under study, and where *sp* denotes *per capita* social protection benefits.

By combining (3) and (4), *per capita* output growth can be expressed as follows:

$$g_y = b_0 + b_1 log(y^*/y) + b_2 sp + b_3 g_k \qquad (5)$$

Expression (5) will be the basic model we are going to estimate.

3. Data description and empirical results

All data, except for social protection benefits, comes from Bell (1994) and have been extended to 1994 using OECD (1996) data. For *Y* we have used Gross Domestic Product and for *L* total population. The capital stock (*K*) has been computed using the perpetual inventory model. From an initial value for 1950, taken from Bell (1994), we cumulate gross fixed capital formation, appropriately adjusted for discards using the same retirement rates as in Bell (1994). The data on social protection benefits comes from EUROSTAT (1988 and 1996). All the variables (except *L*) were expressed at constant 1985 prices, and then the local currencies converted to a common standard using the OECD (1996) purchasing power parity estimates.

Table 1 reports the estimations of equation (5) for the period 1971-1994, using total protection expenditures. Column 2 shows the estimation results of the cross-section by ordinary least squares (OLS), whereas columns 3 and 4 offer the results of panel data estimation of the fixed and random effects models, respectively.

Table 1:
Growth effects of total social protection expenditures. Panel data estimations.
Dependent variable: Log of interannual GDP *per capita* growth.

	OLS	Fixed Effects	Random Effects
Intercept	-0.099 (-6.731)	- -	-0.088 (-5.832)
Catch-up term	0.024 (1.847)	0.058 (3.910)	0.043 (3.100)
Social protection expenditures	25.405 (6.810)	9.015 (2.435)	13.017 (3.633)
Capital growth	0.180 (4.645)	0.316 (6.656)	0.298 (6.634)
Adjusted R^2	0.249	0.505	0.446
F-test	$F(11,229) = 12.283$		
Haussman test	$\chi^{(3)} = 22.244$		
N. of observations	244		

As can be seen, we have statistically different individual effects for each country (F statistics) that seem to be correlated with the independent variables (Haussman test). Therefore we will focus on the fixed effects model.

As shown in Table 1, we obtain a significant and positive sign for the catching-up term, the capital growth and the social protection variables. These effects increase in size and significance after controlling for country effects and do not vary much independently of whether we use the fixed or the random effects specification.

Therefore, we observe a significant and positive effect of the social protection programmes on economic growth. This result contrasts with the negative role that government expenditure exerts on growth in studies like those by Landau (1985) or Hansson and Henrekson (1994). The first author finds however mixed evidence for transfer expenditures when total government outlays are split into different categories. If one focus in the *social asset* argument mentioned above, considering for instance the positive role that less inequality has on economic performance as found by Persson and Tabellini (1994), it should not be difficult to justify our result provided that social protection programmes

reduce inequality. The level of social protection is also important to this respect. McCallun and Blais (1987) find that social expenditure plays a positive role towards economic growth below a certain level and a negative one beyond it.

In order to check the robustness of our result to changes in the sample, we have analysed the sensitivity of the estimated coefficients to the exclusion of each country once at time. All the parameters are within the 95% confidence interval we have estimated, suggesting that our results are based on a homogeneous sample of countries.

To further assess the effects the social protection expenditures on economic growth, we re-estimated equation (5) using data on five separate programmes: health, old age and survival, family and maternity, employment and unemployment, and housing. Again, the values of the F and Haussman tests suggest that the fixed effect model is the proper estimation model, yielding also the highest adjusted R^2. Therefore, in Table 2 we report the results for that model (the results for the OLS and random effect model can be obtained from the authors upon request).

Table 2:
Growth effects of social protection expenditures.
Panel data estimations (fixed effects) by programmes.
Dependent variable: Log of interannual GDP *per capita* growth.

Catch-up term	0.058	0.056	0.055	0.044	0.044
	(3.914)	(3.781)	(3.916)	(3.227)	(6.695)
Social protection expenditures: health	23.706				
	(2.424)				
Social protection expenditures: old age		18.867			
		(2.186)			
Social protection expenditures: family			101.135		
			(2.931)		
Social protection expenditures: employment				23.732	
				(0.967)	
Social protection expenditures: housing					38.768
					(0.712)
Capital growth	0.323	0.321	0.340	0.334	0.332
	(6.879)	(6.780)	(7.431)	(6.987)	(6.695)
Adjusted R^2	505	503	510	494	493
F-test (11,229)	9724	12552	10970	13408	15028
Haussman test $\chi^{(3)}$	26391	21880	17425	24003	21055
N. of observations	244	244	244	244	244

As can be seen in Table 2, while a significant and positive effect is obtained for the three first programmes (health, old age and family), that result is not found for the last two programmes (employment and housing).

Regarding the case of health and family expenditures, both programmes can be considered as investment in human capital (Barro, 1990) for they enhance and preserve the capacity of the working population to perform their productive tasks. It is true, however, that these expenses are also directed towards a group of the population, (the young and the retirees), that make no part of the active lot.

In the case of pensions expenditures the positive effect found would be consistent with the above-mentioned social asset argument, (in other words, public pensions schemes efficiently reassure workers against the risk of diminishing income due to ageing, what contributes to social cohesion). Sala-i-Martin (1996) offers an alternative explanation: the Social Security pension system constitutes a mechanism to encourage less productive old people to leave

the labour market, making room for younger and more productive workers that contribute to increase productivity and growth.

For the employment/unemployment programme, the insignificant effect found could be interpreted as a confirmation of the passive role, i.e., merely income sustaining), played by policies towards the unemployed since, in theory, this expenditure could also positively contribute to human capital accumulation through training of the unemployed to facilitate their access to a job, what is commonly known as active employment policies. Indeed, the estimated effect must be reflecting the fact that a high proportion of this expenditure is related to unemployment benefits.

Finally, in the case of housing expenditure the estimated insignificant effect may be related with the fact that this programme could tend to discourage unemployed people to move to other regions to seek work [see, e. g., Oswald (1996)].

4. Concluding remarks

In this paper we have investigated the effects of social protection benefits on economic growth, using a panel data on twelve European Union countries covering the 1970-1994 period. Our results suggest a positive growth effect of social protection benefits once we control for country effects. After a short discussion of some diverging results in the literature, we offer a justification for our result based on what we term *social asset* and *normal good* aspects of social protection programmes.

When analysing the effects of the different categories of social protection benefits, we found a significant and positive effect for the health, old age and family programmes. In contrast, such significant effect was not found for the employment and housing programmes.

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