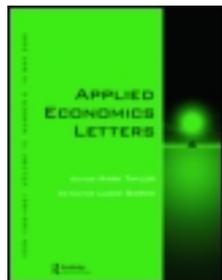


This article was downloaded by: [Mr Juan De Lucio]

On: 26 July 2013, At: 06:04

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Applied Economics Letters

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rael20>

### Social protection benefits and growth: evidence from the European Union

Jose A. Herce , Simon Sosvilla-Rivero IV & Juan Jose De Lucio

Published online: 06 Oct 2000.

To cite this article: Jose A. Herce , Simon Sosvilla-Rivero IV & Juan Jose De Lucio (2000) Social protection benefits and growth: evidence from the European Union, Applied Economics Letters, 7:6, 397-400, DOI: [10.1080/135048500351348](http://dx.doi.org/10.1080/135048500351348)

To link to this article: <http://dx.doi.org/10.1080/135048500351348>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

# Social protection benefits and growth: evidence from the European Union

JOSÉ A. HERCE\*, SIMÓN SOSVILLA-RIVERO and JUAN JOSÉ DE LUCIO

FEDEA and Universidad Complutense de Madrid, Jorge Juan, 46 – 28001 Madrid, Spain

Using a harmonized 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.

## I. INTRODUCTION

The relationship between growth and social protection has attracted recently much attention linked to the general issue of the connection 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 stabilizers 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 organized as follows. In Section II we briefly lay out the theoretical framework. Section III

describes the data used in the estimation and presents the empirical results. Finally, Section IV offers some concluding remarks.

## II. THE MODEL

Our model considers a production function:

$$Y = AK^\alpha L^{1-\alpha} \quad (1)$$

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:

$$y = Ak^\alpha \quad (2)$$

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

$$g_y = g_A + \alpha g_k \quad (3)$$

where  $g_x$  denotes the rate of growth of variable  $X$ . Therefore, according to 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.

\* To whom correspondence should be addressed. E-mail: jose.a.herce@fedea.es

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

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

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.

On the other hand,  $g_k$  can be decomposed in its two components, the rate of growth of capital and the rate of growth of labour. By combining Equations 3 and 4, per capita output growth can be expressed as follows:

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

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

### III. DATA DESCRIPTION AND EMPIRICAL RESULTS

All data, except for social protection benefits, come 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 come 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 1971–94, 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. As can be seen, we have statistically different individual effects for each country ( $F$  statistics) that seem to be correlated with the independent variables (Hausman test).

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 one at a time. To save space we do not report the results here (they are available from the authors upon request). 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 Hausman tests suggest that the fixed effect model is the proper estimation model, yielding also the highest adjusted  $R^2$ . Therefore, in Table 2 we only report the results for that model (the results for the OLS and random effect model can be obtained from the authors upon request). 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

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	$F(11,229) = 12.283$		
Hausman test	$\chi^2(3) = 22.244$		
No. of observations	244		

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 (3.914)	0.056 (3.781)	0.055 (3.916)	0.044 (3.227)	0.044 (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 (6.879)	0.321 (6.780)	0.340 (7.431)	0.334 (6.987)	0.332 (6.695)
Adjusted $R^2$	0.505	0.503	0.510	0.494	0.493
F-test (11,229)	9.724	12.552	10.970	13.408	15.028
Haussman test $\chi^2(3)$	26.391	21.880	17.425	24.003	21.055
No. of observations	244	244	244	244	244

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).

#### IV. CONCLUDING REMARKS

In this paper we have investigated the effects of social protection benefits on economic growth, using panel data on twelve European Union countries covering the 1970–94 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.

#### ACKNOWLEDGEMENTS

The authors would like to thank Daniele Franco, at the Bank of Italy, and Teresa Bento, at EUROSTAT, the supply of complete data set from the SEEPROS base. Remaining shortcomings are our own responsibility.

#### REFERENCES

- Atkinson, A. B. (1995) The welfare state and economic performance, *National Tax Journal*, **48**, 171–98.
- Atkinson, A. B. (1996) Growth and the welfare state: is the welfare state necessarily bad for economic growth, *New Economy*, **3**, 182–6.
- Barro, R. J. (1990) Government spending in a simple model of endogenous growth, *Journal of Political Economy*, **98**, S103–25.
- Bell, B. (1994) The CEP-OECD data set, CEP Discussion Paper 118.
- EUROSTAT (1988) Social protection, current expenditure and receipts 1970–1985, mimeo.
- EUROSTAT (1996) *Social Protection Expenditure and Receipts 1980–94*, Office des Publications Officielles des Communautés Européennes, Luxembourg.
- Hansson, P. and M. Henrekson (1994) A new framework for testing the effect of government spending on growth and productivity, *Public Choice*, **81**, 381–401.
- Landau, D. L. (1985) Government expenditure and economic growth in the developed countries: 1952–76, *Public Choice*, **47**, 459–77.
- McCallum, J. and A. Blais (1987) Government, special interest groups and economic growth, *Public Choice*, **54**, 3–18.

- OECD (1996) *National Accounts. Main Aggregates 1960–1994*, OECD, Paris.
- Oswald, A. J. (1996) A conjecture on the explanation for high unemployment in the industrialised nations: part I, Warwick Economics Research Paper No. 475.
- Persson, T. and G. Tabellini (1994) Is inequality harmful for growth? *American Economic Review*, **84**, 600–21.
- Sala-i-Martin, X. (1996) A positive theory of social security, *Journal of Economic Growth*, **1**, 227–304.