

Impact of Government Spending In Social Sectors on Economic Growth: A Case Study of West African Economic and Monetary Union Countries

Ayira KOREM

University of Lomé (FASEG), P.O. Box 1515, Lomé, Togo

Abstract

This study aims to investigate the short-run and long-run effects of government's social expenditure proxies, namely education, and health spending on economic growth during the period 1985 - 2019 in West African Economic and Monetary Union. Using Auto Regressive Distributed Lag model (ARDL) based on panel data, the results of the study reveal that in short-run, government spending in social sectors has no significant impact on economic growth but in long-run the effects of education and health expenditures on the economic growth are significantly positive.

Keywords: Social expenditure, economic growth, Auto Regressive Distributed Lag model, WAEMU.

Résumé

Cet article vise à étudier les effets à court et à long terme des dépenses sociales, à savoir les dépenses d'éducation et les dépenses de santé sur la croissance économique durant la période 1985 - 2019 dans l'Union économique et monétaire ouest-africaine. Partant d'un modèle autorégressif à retards distribués sur des données de panel, les résultats révèlent qu'à court terme, les dépenses publiques dans les secteurs sociaux n'ont pas d'impact significatif sur la croissance économique mais à long terme les effets des dépenses d'éducation et de santé sur la croissance économique sont significativement positifs.

Mots clés : Dépenses sociales, croissance économique, modèle autorégressif à retards distribués, UEMOA

1. Introduction

In literature, many economists and policymakers acknowledge economic growth as one of the most important indicators of welfare level in all countries. Therefore, increasing the income level is the main concern of public policies. Studies in the related immense literature on the determinants of economic growth have commonly examined the effects of economic factors like capital and labor stocks, financial development, investment, productivity, level of production technology, education, health, social spending, etc. In recent years, the impact of government spending on economic growth has gained marked attention of the researchers and policy makers. Social policy is as important to economic development as economic policy. The four main components of social spending are education, public welfare and unemployment benefits, social security, and public health spending. In developed economies, these expenditures account for nearly 70% of public spending according to Heitzig (2015). Until the endogenous growth theories, the traditional neoclassic approach which underlined that the macroeconomic policies of the government are not effective on the economic growth dominated the growth of literature. On the contrary, the endogenous growth models take government expenditures in health, education, social security and even in defense areas into account while modeling the growth of countries. The origins of endogenous growth models are based on the studies of Romer (1986), Lucas (1988), Barro (1990) and Rebelo (1991). Determining the economic growth as endogenous means that government can affect the economic growth rate by applying

macroeconomic policies. In other words, government affects long-term growth with taxing, spending and changing the budget balance (Pevcin, 2004). However, the endogenous growth models have focused on the role of human capital as a key driver of economic growth (Stokey, 1991; Pyo, 1995) which directs the public expenditures to invest in the human capital stock.

According to Afzal and al (2010), the combination of the expenditures on human capital also matters in the endogenous growth models and there are important and direct relations between government expenditures like education, health, social protection and social security and economic growth. Education is one of the most important factors which contributes to the sustainable economic growth and competitiveness of countries. Therefore, it is expected that education expenditures contribute to the economic growth by increasing the efficiency and productivity levels of individuals. Likewise, health expenditures have multiple contributions to economic growth in both short-run and long-run (Lusting, 2006; Barro, 2013). The effects of social protection expenditures of governments on long-run economic growth are not clear with two opposite evidences. On the one hand, the benefit these programs provide can discourage people from working. Because of the decline in the amount of labor supplied in the economy, the level of output and, in some circumstances, the level of capital investment and, hence, growth can lower. On the other hand, social protection expenditures will make a positive contribution to the economic growth since the individuals are insured against disease and unemployment risk and, therefore, they become more productive and motivated to work (Arjona and al, 2002). These two different suggestions keep the doors open to the debates about whether social protection is an expenditure or an investment.

Over the period of analysis, from 1981 to 2019, the share of public education expenditure in GDP evolved irregularly in WAEMU countries. In 1985, public education expenditure accounted for more than 9% in Côte d'Ivoire while it represented less than 5% in Togo and less than 2% in Burkina Faso. This rate fell in almost all the countries of the zone to between 2.5% and 4.5% between 1994 and 2005. From 2006 to 2019, there was a steady upward trend in the share of government expenditure in GDP in all countries. In 2019, the region's ratios ranged from 3.6% in Mali to 8% in Senegal. On the other hand, the share of health expenditure in GDP remained somewhat more stable over the analysis period and for all WAEMU countries between 4 and 8.6%. In 1985, this ratio varied between 3.8% in Senegal and 7.3% in Mali. In 2019, in the UEMOA countries, public health expenditure represented between 4.3% in Senegal and 8.2% in Togo. It is evident from these factual elements that the health sector is relatively better funded than the education sector.

The main objective of the study is to analyze the impact of government spending in social sectors (particularly in education and health, due to the availability of data) on economic growth in the context of West African Economic and Monetary Union. The results of this study may indicate the areas where government spending is much needed for achieving sustainable economic growth. This study is particularly important for West African Economic and Monetary Union at a time when the economy of the area is facing many political and economic challenges such as energy crises, terrorism, corruption and poor governance at national and international levels. This study is highly important for West African Economic and Monetary Union as it is struggling to find appropriate development strategy for overcoming the economic, political, and social problems that are responsible for low economic growth. The results of this study may provide a guideline to the policy makers so that appropriate policies can be formulated and implemented which may be helpful for overcoming economic, political, and social problems faced by West African Economic and Monetary Union. This paper is organized in five sections, with the introduction being the first one. The second section briefly discusses the review of literature. The third section describes the methodological approaches while the fourth one presents the empirical results and discussion. The last section is a conclusion.

2. Review of Literature

In literature, many authors have assessed the effect of social spending on economic growth. Some authors argue that on the whole the increase for social spending improves societal well-being and reduces long-term inequalities (1). Other authors believe that social spending reduces incentives to work, and thus encourages individuals who depend on government assistance, and thus slows down economic growth (2). Finally, a third group of authors find that an increase in social spending has no significant effect on the growth of the real sector of a developing economy (3). According to the assumption (1) that supports that social spending improves growth, many authors found that social spending such as health spending, education spending, unemployment spending and social security increases human capital that positively affects the growth of the real sector of an economy. Among the authors who support this hypothesis we can cite Piabuo and Tieguhong (2017) who found that health expenditure has a positive and significant effect on economic growth in economic community for central African states. Alper and Demiral (2016) found that social expenditures in all three dimensions (education, health and social spending) significantly contributed to the economic growth in 18 OECD countries from 2002 to 2013. Khan and Bashar (2015) found that social expenditures promoted economic growth in Australia and New Zealand over the period 1980-2012. The same results were found by Alam et al (2010) for whom social expenditures increased efficiency and, therefore, affected growth positively in 10 Asian countries over the period 1970-2005 with panel data analysis. Other authors found the same results in particular: Asghar and al (2011), Beraldo and al (2009), Dreger and Reimers (2005), Kelly (1997), Barro (1991).

According to the hypothesis (2) which holds that social spending negatively affects economic growth, some authors found in their analysis that social spending reduces incentives to work and thus reduces the workforce coupled with increased unemployment which involves more social spending and all this negatively affects economic growth. Among the authors who support this point of view, we have Carter and al (2013) for whom total government spending lessens growth rates, particularly in the short-run. Health and social security had little influence in Barbados over the period 1976-2011 based on dynamic OLS, unrestricted error correction model. Many other authors found similar results: Eggoh and al (2015), Pereira and Andraz (2014), Folster and Henrekson (2001) and Devarajan and al (1996). According to the hypothesis (3) that an increase in social spending has no significant effect on the economic growth many authors found that social spending (an incomplete clause). According to Heitzig (2015), the level of US state social spending has no effect on personal income growth, a conclusion which agrees with Lindert (2004).

3. Methodological approaches

The theoretical framework on which the study is based is Keynesian theory. Keynesian theory states that public expenditure determines economic growth. During recession, a policy of budgetary expansion should be undertaken to increase the aggregate demand in the economy, thus boosting the Gross Domestic Product (GDP), the employment rises, income and profits of the firms increase, and this would result in the firm's hiring more workers to produce the goods and services needed by the government. The Keynesian modeled economic growth as a function of public expenditure is as shown in equation 1:

$$Y = f(PubExp) \quad (1).$$

Jerono (2009) shows that total public of expenditure as a function of summation of all individual government expenditure in all components is as:

$$PubExp = f(Educ, Health, Infrac, Defense, Secu) \quad (2)$$

While *Educ* is expenditure on education, *Health* is expenditure on health, *Infrac* is expenditure on infrastructure, *Defense* is expenditure on defense, *Secu* is expenditure on public order and security. On the basis of this theoretical model, the empirical model used to analyze the impact of government spending in social sectors on economic growth in the context of West African Economic and Monetary Union is as follows:

$$LnGDPP_t = \alpha_0 + \alpha_1 LnEDUC_t + \alpha_2 LnHEALTH_t + \alpha_3 LnEMP_t + \alpha_4 LnCREDIT_t + \alpha_5 LnINVEST_t + \varepsilon_t \quad (3)$$

While GDPP is GDP per capita, EDUC is total public expenditures on education as a percentage of GDP, HEALTH is total public expenditure on health as a percentage of GDP, EMP is labor participation rate total percentage (meaning) of total population aged 15 and more, CREDIT is domestic credit to private sector (% of GDP) and INVEST is Gross capital formation (% of GDP). ε is the stochastic error term and α_i are the elasticities. This study used secondary data for the period 1985-2019. The data used came from the World Bank database (World Development Indicator, 2021). However, due to data availability, this study focuses on 7 West African economic and monetary union countries. These countries are: Benin, Burkina Faso, Ivory Coast, Mali, Niger, Senegal and Togo. The main objective of the study is to analyze the impact of government spending in social sectors on economic growth in the context of West African Economic and Monetary Union countries. The estimation method allowing to identify short and long-term effects is the Auto Regressive Distributed Lag model (ARDL). However, analysis of time series requires stationarity and cointegration tests. This study uses IPS, ADF and PP tests for observing the order of integration of the variables included in the model. Pedroni Residual Cointegration Test has been used for observing the long-run relationship between the variables. Pedroni residual test is used in this study. Seven tests would be used four for within-dimension panel and three for between-dimension group. The within-dimension panel tests also highlight the weighted statistics.

4. Results and Discussion

4.1. Unit root test

The results of the unit root test are presented in Table 1. From these results, it appears that all variables are **I(1)** except the variable of public expenditure on health as a percentage of GDP and population growth.

Table 1. The Results of unit root tests

Variable	Level			First difference			Conclusion
	IPS	ADF	PP	ADF	IPS	PP	
GDPP	2.39	3.16	4.49	-6.66***	69.66***	106.28***	I(1)
EDUCATION	2.61	10.21	11.05	-6.88***	72.04***	135.81***	I(1)
HEALTH	-1.91**	31.29***	42.88***	-9.19***	100.34***	146.99***	I(0)
CREDIT	1.95	5.89	5.87	-4.82***	50.12***	104.29***	I(1)
EMPLOYMENT	2.62	8.61	8.92	-2.28**	25.54**	34.94**	I(1)
POPULATION	-7.10***	77.09***	21.12*	-8.77***	96.52***	17.01	I(0)

Note: *, ** and *** represent the significance at 10%, 5% and 1% level.

4.2. Cointegration Test

This study applies Pedroni Residual Cointegration Test for cointegration, determining the number of co-integrating equations. The results of this test are reported in Table 2.

Table 2. The Results of Pedroni Residual Cointegration Test

		Statistic	Weighted Statistic
Within-dimension (panel)	Panel v-Statistic	-1.697473**	-0.897090
	Panel rho-Statistic	2.340789	1.641231
	Panel PP-Statistic	1.591331	0.388970
	Panel ADF-Statistic	3.246383	1.997888
Between-dimension (group)	Group rho-Statistic	1.769944	
	Group PP-Statistic	-0.289890	
	Group ADF-Statistic	1.332389	

Notes: The test statistics are normalized so that the asymptotic distribution is standard normal. *, **, *** indicate rejection of the null hypothesis of non-co-integration at the 10, 5 and 1% significance levels, based respectively on critical values of 1.281; 1.644 and 2.326

To determine whether a cointegrating relationship exists, the recently developed methodology proposed by Pedroni [1999a] is employed. Basically, it employs four panel statistics and three group panel statistics to test the null hypothesis of no cointegration against the alternative hypothesis of cointegration. We see from Table 2 that the variables are co-integrated, and that panel co-integration test developed by Pedroni is employed to empirically verify if there is co-integration. The results from the panel co-integration test for this study show that for the seven within-dimension and between-dimension tests with normal statistics, one is significant as for the weighted statistics. We can, therefore, conclude from these test statistics that there is co-integration between the variables. This means that co-integration panel regression is necessary.

4.3 Auto Regressive Distributed Lag model (ARDL)

In this study, short-run and long-run dynamics among variables are captured through Auto Regressive Distributed Lag model (ARDL). The results of ARDL estimation are presented in Table 3.

Table 3. Results of Auto Regressive Distributed Lag model (ARDL)

Dependent Variable: DLOG(GDPP)		
Variable	Coefficient	Prob
COINTEQ01	-0.438*	0.0737
Short Run Equation		
DLOG(EDUC)	0.107	0.5655
DLOG(HEALTH)	-0.618	0.1621
DLOG(EMPLOI)	1.502	0.8923
DLOG(CREDIT)	0.133	0.1122
DLOG(INVEST)	0.135*	0.0454
CONSTANT	-7.042	0.0728
Long Run Equation		
LOG(EDUC)	0.530***	0.0000
LOG(HEALTH)	0.512***	0.0028
LOG(EMPLOI)	5.28***	0.0025
LOG(CREDIT)	0.218***	0.0000
LOG(INVEST)	-0.196**	0.0343

Note: *, ** and *** represent the significance at 10%, 5% and 1% level.

Table 3 shows the short-run and long-run. From the short-run result, in the context of West African Economic and Monetary Union countries, government spending in social sectors has no significant impact on economic growth. This result is similar to those of Nubukpo (2007) and Heitzig (2015) and can be explained by investments in human capital in terms of education and health have more effect in the long term than in the short term (Pritchett, 2001)). The inefficiency of public spending and bureaucrats seeking to maximize their income by increasing public spending (Muller, 2005). But, in the long-run, public expenditure in the social sectors significantly improves the economic growth of WAEMU countries. Indeed, any increase in the share of public spending on education in GDP by 10% increases economic growth up to 5.3%. Also, any increase in the share of public health expenditure in GDP by 10% improves growth by 5.12%. In general, public spending in the social sectors, particularly in education and health, positively contributes to the growth of the real sector in WAEMU countries in long-run. This result is similar to those of Piabuo and Tieguhong (2017) in the case of economic community for central African states, Alper and Demiral (2016) in the case of 18 OECD countries, Asghar et al (2011) in the case of Pakistan and Dreger and Reimers (2005) in the case of 21 OECD countries.

5. Conclusion

There is a longstanding debate with no consensus on whether government expansion through public policies helps or hinders economic growth. Consistently, the empirical studies in the related literature conclude with unclear findings. The endogenous growth theories, in general, predict that effective public expenditures can

lead to increase in economic growth trends of countries. The main objective of the study is to analyze the impact of government spending in social sectors (particularly in education and health, due to the availability of data) on economic growth in the context of West African Economic and Monetary Union using panel dataset covering 1985 – 2019. Findings reveal that in short-run, government spending in social sectors has no significant impact on economic growth but in long-run the effects of education and health expenditures on the economic growth are significantly positive. Education (0.53) expenditures made by governments are found most contributing to the growth, followed by health expenditures (0.512). According to these results, it appears that any policy of increasing public spending in the social sectors in the WAEMU countries contributes to the improvement of the growth and thus the countries of the zone would benefit from increasing their expenditure in the social sectors, including education and health.

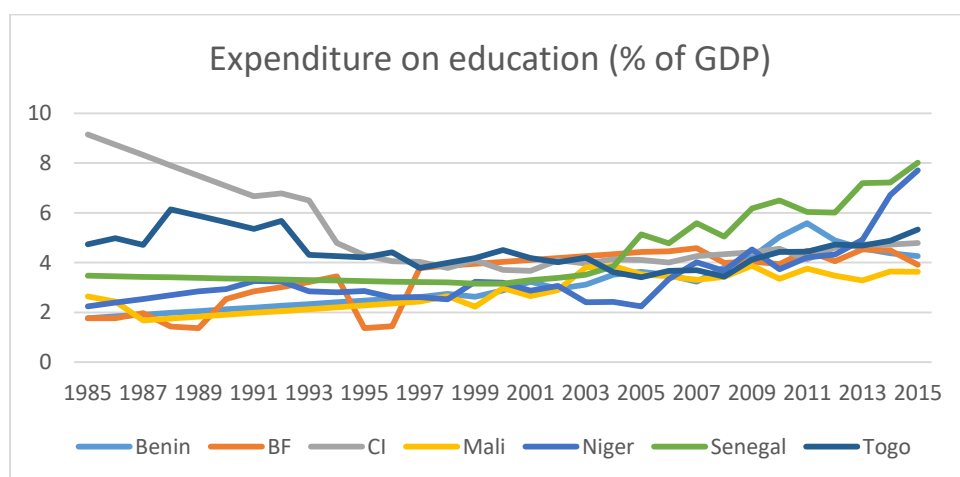
References

1. Afzal, M., Farooq, M.S., Ahmad, H.K, Begum, I., & Quddus, M.A. (2010), “Relationship between school education and economic growth in Pakistan: ARDL bounds testing approach to cointegration”, *Pakistan Economic and Social Review*, 48(1), p 39-60.
2. Alam, S., A. Sultana, and M. Butt (2010). “Does Social Expenditures Promote Economic Growth? A Multivariate Panel Cointegration Analysis for Asian Countries,” *European Journal of Social Sciences* 14 (1), p 44-54.
3. Alper F. O. and M. Demiral (2016), “Public Social Expenditures and Economic Growth: Evidence from Selected OECD Countries”, *Research in World Economy*, Vol 7, No 2, p 44 – 51.
4. Arjona, R., Ladaique, M., & Pearson, M. (2002), “Social protection and growth”, *OECD Economic Studies*, 35(2), p 7-45.
5. Asghar N., P. Azim and H. Rehman (2011), “Impact of Government Spending in Social Sectors on Economic Growth: A Case Study of Pakistan”, *Journal of Business and Economics*, Vol 3, No 2, p 214-234.
6. Barro, R.J. (2013); “Education and economic growth”, *Annals of Economics and Finance*,14(2), p 301- 328.
7. Barro, R.J. (2013), “Health and economic growth”. *Annals of Economics and Finance*, 14(2), p 329-366.
8. Barro, R. J. (1990), “Government Spending in a Simple Model of Economic Growth”. *Journal of Political Economy*, 98(5), p 103-126.
9. Barro, R.J. (1991), “Economic growth in a cross section of countries”, *The Quarterly Journal of Economics*, 106(2), p 407-443.
10. Beraldo, S., Montolio, D., & Turati, G. (2009), “Healthy, educated and wealthy: A primer on the impact of public and private welfare expenditures on economic growth”, *The Journal of Socio-Economics*, 38(1), p 946-956.
11. Carter, J., Craigwell, R., & Lowe, S. (2013), “Government expenditure and economic growth in a small open economy: A disaggregated approach”, *CBB Working Papers*, WP/13/15.
12. Devarajan, S., Swaroop, V., & Zou, H. (1996), “The composition of public expenditure and economic growth”, *Journal of Monetary Economics*, 37(2), p 313-344
13. Dreger, C., & Reimers, H.E. (2005), “Health care expenditures in OECD countries: A panel unit root and cointegration analysis”, *IZA Discussion Papers*, 1469, p 1-20
14. Eggoh J., H. Houeninvo and G.A. Sossou (2015), “Education, Health and economic growth in African countries”, *Journal of economic development*, Vol 40, Number 1.
15. Folster, S., & Henrekson, M. (2001), “Growth effects of government expenditure and taxation in rich countries”, *European Economic Review*, 45(8), p 1501-1520
16. Heitzig C. (2015), “U.S. State Social Spending and Economic Growth”, *Honors Theses*, College of Saint Benedict and Saint John’s University.
17. Jerono, C.R. (2009), “Government Expenditure Components on Economic Growth in Kenya”, *International Journal of Business and Social Science*, Vol. 4, No. 4, p. 256-279.
18. Khan, H., & Bashar, O. (2015), “Social expenditure and economic growth: evidence from Australia and New Zealand using cointegration and causality tests”, *The Journal of Developing Areas*, 49(4), p 285-300

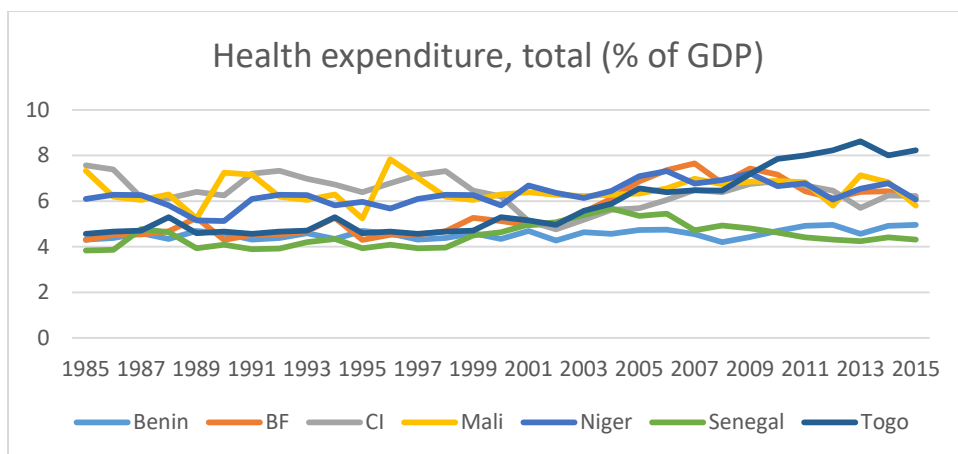
19. Kelly, T. (1997), "Public expenditures and growth", *The Journal of Development Studies*, 34(1), p 60-84
20. Lindert, P. (2004), "Growing Public: Social Spending and Economic Growth since the Eighteenth Century". Vol 1-2. New York: Cambridge Press
21. Lucas, R.E. (1988), "On the mechanics of economic development", *Journal of Monetary Economics*, 22(1), p 3-42.
22. Lustig, N. (2006), "Investing in health for economic development: The case of Mexico". UNU-WIDER Research Papers, 2006/30
23. Muller P. (2005), « Esquisse d'une théorie du changement dans l'action publique : structures, acteurs et cadre cognitifs », *Revue française de science politique*, Vol 55, No 1, p 155-187. Presse de Sciences Po.
24. Nubukpo K. (2007), "Dépenses publiques et croissance des pays de l'Union économique et monétaire ouest-africaine (UEMOA)", *Afrique contemporaine*, vol 2, No 222, p 223-250.
25. Pereira A. M. and J. M. Andraz (2014), "On the Long-Term Macroeconomic Effects of Social Security Spending: Evidence for 12 EU Countries", *CEFAE-UE Working Paper 2014/8*
26. Pevcin, P. (2004), "Does optimal size of government spending exist?", Retrieved from, working paper p 20-04.
27. Piabuo S. M. and J. C. Tieguhong (2017), "Health expenditure and economic growth - a review of the literature and an analysis between the economic community for central African states (CEMAC) and selected African countries", *Health Economics Review*, vol 7, No 23, p 1-13
28. Pritchett L. (2001), "Where Has All the Education Gone?" *World Bank Economic Review*, volume 15, p 367-391.
29. Pyo, H.K. (1995), "A time-series test of the endogenous growth model with human capital", Retrieved from, working paper 8851.
30. Rebelo, S.T. (1991), "Long-run policy analysis and long-run growth", *Journal of Political Economy*, vol 99, No 3, p 500-521
31. Romer, P.M. (1986), "Increasing returns and long run growth", *Journal of Political Economy*, vol 94, No 5, p 1002-1037
32. Stokey, N.L. (1991), "Human capital, product quality and growth", *Quarterly Journal of Economics*, vol 106, No 2, p 587-616

ANNEXES

A1: Evolution of education expenditure (% of GDP)



A2: Evolution of Health expenditure (% of GDP)



A3: Cointegration Test

Pedroni Residual Cointegration Test
 Series: GDPP EDUC HEALTH EMPLOI CREDIT INVEST
 Date: 06/19/17 Time: 14:57
 Sample: 1985 2019
 Included observations: 217
 Cross-sections included: 7
 Null Hypothesis: No cointegration
 Trend assumption: No deterministic trend
 User-specified lag length: 1
 Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-1.697473	0.9552	-0.897090	0.8152
Panel rho-Statistic	2.340789	0.9904	1.641231	0.9496
Panel PP-Statistic	1.591331	0.9442	0.388970	0.6514
Panel ADF-Statistic	3.246383	0.9994	1.997888	0.9771

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	1.769944	0.9616
Group PP-Statistic	-0.289890	0.3860
Group ADF-Statistic	1.332389	0.9086

Cross section specific results

Phillips-Peron results (non-parametric)

Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
1	0.191	2653.081	2653.081	0.00	30
2	0.331	3057.545	3057.545	0.00	30
3	0.833	11065.94	15079.07	2.00	30
4	0.455	6833.916	7149.972	3.00	30
5	0.334	760.4672	643.0300	4.00	30
6	0.547	5214.507	7607.253	3.00	30
7	0.357	1581.566	1568.239	2.00	30

Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
1	0.114	2721.535	1	--	29
2	0.230	3077.788	1	--	29
3	0.837	9162.043	1	--	29
4	0.517	6945.385	1	--	29
5	0.137	662.2340	1	--	29
6	0.643	4334.590	1	--	29
7	0.287	1617.366	1	--	29

A4: Auto Regressive Distributed Lag model (ARDL)

Dependent Variable: DLOG(GDPP)
 Method: ARDL
 Date: 06/19/17 Time: 14:56
 Sample: 1988 2019
 Included observations: 196
 Maximum dependent lags: 3 (Automatic selection)
 Model selection method: Akaike info criterion (AIC)
 Dynamic regressors (3 lags, automatic): LOG(EDUC) LOG(HEALTH)
 LOG(EMPLOI) LOG(CREDIT) LOG(INVEST)
 Fixed regressors: C
 Number of models evaluated: 9
 Selected Model: ARDL(3, 3, 3, 3, 3)
 Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
LOG(EDUC)	0.530389	0.107776	4.921206	0.0000
LOG(HEALTH)	0.512385	0.166276	3.081531	0.0028
LOG(EMPLOI)	5.276515	1.691573	3.119294	0.0025
LOG(CREDIT)	0.218180	0.034766	6.275702	0.0000
LOG(INVEST)	-0.196293	0.091119	-2.154256	0.0343
Short Run Equation				
COINTEQ01	-0.437815	0.241584	-1.812273	0.0737
DLOG(GDPP(-1))	-0.126014	0.121301	-1.038858	0.3020
DLOG(GDPP(-2))	-0.074878	0.104603	-0.715835	0.4762
DLOG(EDUC)	0.106735	0.184958	0.577078	0.5655
DLOG(EDUC(-1))	-0.101207	0.129401	-0.782124	0.4365
DLOG(EDUC(-2))	-0.014177	0.129622	-0.109372	0.9132
DLOG(HEALTH)	-0.617556	0.437643	-1.411096	0.1621
DLOG(HEALTH(-1))	-0.691225	0.375435	-1.841130	0.0694
DLOG(HEALTH(-2))	-0.272001	0.160186	-1.698029	0.0934
DLOG(EMPLOI)	1.502100	11.05988	0.135815	0.8923
DLOG(EMPLOI(-1))	-21.35864	13.40240	-1.593642	0.1150
DLOG(EMPLOI(-2))	6.210167	10.48102	0.592516	0.5552
DLOG(CREDIT)	0.133483	0.083095	1.606385	0.1122
DLOG(CREDIT(-1))	0.052876	0.086765	0.609413	0.5440
DLOG(CREDIT(-2))	-0.043255	0.093753	-0.461371	0.6458
DLOG(INVEST)	0.135444	0.066609	2.033405	0.0454
DLOG(INVEST(-1))	0.213640	0.096394	2.216329	0.0295
DLOG(INVEST(-2))	0.026853	0.101133	0.265515	0.7913
C	-7.041794	3.871959	-1.818664	0.0728
Mean dependent var	0.019086	S.D. dependent var	0.125681	
S.E. of regression	0.095371	Akaike info criterion	-1.304512	
Sum squared resid	0.718560	Schwarz criterion	0.844916	
Log likelihood	279.5395	Hannan-Quinn criter.	-0.436232	

*Note: p-values and any subsequent tests do not account for model selection.