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**Public social spending, government effectiveness, and economic growth:
an empirical investigation**

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Public social spending, government effectiveness, and economic growth: an empirical investigation

Abstract

This paper reports the results of an empirical investigation into the relationships between public social spending, government effectiveness, and economic growth. Using panel data covering 132 developed and developing countries over the 2008 to 2019 period, we find significant and complementary relationships among the variables through fixed effects, system GMM, and instrumental variable estimation. All three components of public social spending, including social security benefits, education expenditure, and health expenditure, have a significant and positive impact on subsequent economic growth. Government effectiveness has a direct growth-enhancing effect as well as a mediating and positive effect on the association between public social expenditures and economic growth. Thus, governments accelerate the positive impact of public social spending on economic growth. These relationships hold for countries at all income levels, while the channels predicting a positive social spending–growth relationship are stronger in high-income countries than lower-income countries. To stimulate inclusive growth, governments must actively design and implement social spending policies. These, however, should be complemented by concomitant efforts to strengthen the quality of public institutions, which exerts a substantial impact on the social spending–growth relationship.

Keywords: public social spending, government effectiveness, economic growth, social security expenditure, inclusive growth

JEL classification: E60; H51; H52; H55; O43

I. Introduction

Public social spending is a powerful tool in the hands of governments to achieve their socioeconomic objectives. Social spending has been one of the most important instruments of post-war welfare states, with governments relying on publicly funded education, health, and social protection programmes to secure the citizens' economic and social well-being. Since the early twenty-first century, the role of public social spending—in particular, in developing countries—has attracted unprecedented attention as the international community agreed on the global development initiatives such as the Millennium Development Goals and Sustainable Development Goals in 2000 and 2015, respectively. Much of the increase in development assistance has been directed to support government spending in the social sectors in developing countries. Underlying the push for higher public social spending has been the expectation that public spending toward the social sectors will stimulate fostering inclusive growth, with its role to both reduce inequality and poverty and promote economic growth (Zouhar et al. 2021).

Has the increased public social spending promoted economic growth? In the literature, a general consensus has been reached that public social spending contributes to reducing poverty and inequality (Causa and Hermansen 2018; Cammeraat 2020). However, the consensus on whether public social spending also contributes to a country's economic growth is less substantial. This study empirically examines whether public social spending policies affect economic growth from a cross-country perspective. In particular, it analyzes the growth-enhancing effect of the quantity of public social expenditures in various sectors as well as the effectiveness of governments formulating and implementing social spending policies.

The impact of public social spending on a country's economic performance has been the subject of longstanding debate in academia and policy circles. The critics of welfare state

policies point to the possible trade-off between equity and efficiency and argue that redistributive government spending can create disincentives to work and save or crowd out other forms of investment, thereby inhibiting a country's growth performance. In contrast, others have suggested that these social expenditures can contribute to subsequent economic growth through many channels, including the accumulation of education and health human capital (e.g., Beraldo, Montolio, and Turati 2009) and the promotion of social cohesion and political stability (Salai-i-Martin 1992; Alesina and Perotti 1996).

This line of the growth literature focuses on the size of public social expenditures but pays little attention to the quality of public administration through which social policies are formulated and implemented. Since the early 1990s, a growing body of literature has investigated the quality of government institutions or government effectiveness as an explanatory factor of growth performance. Following North's (1990) seminal work, studies have shown that government effectiveness contributes to subsequent economic growth and development (Hall and Jones 1999; Rodrik, Subramanian, and Trebbi 2004; Alam, Kitenge, and Bedane 2017). While most studies have examined the direct impact of government effectiveness on growth, Baldacci et al. (2008), among others, show that good governance promotes growth mainly through its impact on the association between social spending and social outcomes such as human capital. This finding suggests another channel through which government effectiveness might impact growth. Yet this role of government effectiveness in mediating the relationship between public social spending and economic growth has undergone relatively little empirical scrutiny.

This study builds on these two strands of literature and attempts to fill the gap in knowledge by providing an integrated assessment of public social spending, government effectiveness,

and economic growth based on a broad sample of developed and developing countries. Some empirical studies have suggested that the growth effects of social spending and government effectiveness differ between countries grouped by income level (Bellettini and Berti Ceroni 2000; Yang 2020). As we also examine these relationships within our sample, the objectives of our inquiry are threefold. First, we investigate the effects of the various components of public social expenditures on economic growth. Second, we examine the effect of government effectiveness on economic growth, considering both its direct effect and mediating effect on the association between social spending and economic growth. Third, we investigate whether these relationships differ between countries grouped by income level. The growth in health and education spending is part of growth in GDP. We additionally control for this in our analysis to ensure that our findings explain an economic relation rather than an accounting identity (see Friedman and Meiselman 1963 and Friedman and 1957 for a discussion on consumption being correlated to income). Therefore, a fourth contribution of our study, is to control for this correlation between economic growth and expenditure on health and education.

The analysis is based on a panel data of 132 developed and developing countries over the 2008 to 2019 period, which were obtained from the World Development Indicators (WDI) database and the International Monetary Fund (IMF)'s Government Finance Statistics (GFS) database. Our study established an analytical framework that examines the channels through which the public sector affects economic growth through social spending policies. In the study, public social spending encompasses government expenditures in social security benefits, education, and health. We utilize different panel estimation methods, including fixed effects, system GMM, and instrumental variable (IV) estimation. To the best of our knowledge, empirical studies investigating the relationship between public social expenditures,

government effectiveness, and economic growth in an integrated framework using a large dataset of both developed and developing countries have been rare. Public social spending increased substantially after the 2008 financial crisis.¹ It is worthwhile to empirically examine the effects of public social spending policies on economic growth given the rising levels of public social expenditures and mounting fiscal pressures faced by governments around the world.

Our results strongly suggest that public social spending has a positive impact on economic growth, with all three components of public social spending (social security benefits, education expenditure, and health expenditure) showing a significant and positive effect on subsequent growth. In addition, government effectiveness has a direct and positive impact on economic growth as well as a significant mediating effect on the association between social expenditures and growth. Combined, these results indicate that both the quantity of public social expenditures and the quality of government institutions work to promote economic growth.

The rest of the paper is structured as follows. Section 2 discusses the literature, focusing on the relationships between public social spending, government effectiveness, and economic growth. Section 3 presents the data, model, and methodology. Section 4 analyzes the econometric results and robustness checks. Section 5 is the conclusion.

¹ Public social spending in advanced economies increased from 25% of GDP in 2000–2003 to 26.5% of GDP in 2016–18. During the same period, it increased from 11% to 13.8% of GDP in emerging economies, and from 6.5% to 8% of GDP in low-income countries (Zouhar et al. 2021).

II. Literature review

This study is based on two strands of the literature: one related to the effect of public social spending on economic growth and one that deals with the association between the quality of public institutions or government effectiveness and economic growth.

Literature on the effect of public social spending on economic growth

The neoclassical economic theory generally holds that government expenditures depress growth through the adverse incentive effects associated with distortional taxation and crowding out of private investment. In particular, redistributive policies, such as social security programmes, create disincentives to work and save and hence depress national investment and growth (see, e.g., Feldstein 1974). In contrast, endogenous growth theories suggest that public social expenditures can lead to higher economic growth through their influence on the accumulation of education and health human capital (Romer 1990; Rebelo 1991; Buiter and Kletzer 1993; Beraldo, Montolio and Turati 2009). A healthy and educated worker is likely to be more productive and quicker to adopt productive innovations; similarly, a nation with a higher level of human capital stock is expected to have a higher capacity to innovate and adopt new technologies (Nelson and Phelps 1996; Benhabib and Spiegel 1994). From the perspective of political economy, studies have suggested the politico-economic channels through which redistributive spending policies may contribute to subsequent growth by promoting social peace and cohesion (Salai-i-Martin 1992) and by generating more equal income distribution and sociopolitical stability, would lead to higher investment (Alesina and Perotti 1996). Furthermore, policies supporting welfare programmes and public education can reduce inequality and distributional conflict and hence create political consensus to adopt growth-oriented policies (Alesina and Rodrik 1994; Bellettini and Berti Ceroni 1999).

These contrasting arguments have given rise to a substantial body of empirical studies evaluating the effects of public social expenditures on economic growth. For the OECD countries, Furceri and Zdzienicka (2012) show that social spending has a positive effect on growth, whereas Connolly and Li (2016) find a negative effect. As for the sub-categories of social spending, studies have shown that social security has a detrimental effect on growth, despite reducing inequality (e.g., Feldstein 1974; Izák 2011). In contrast, others have found a positive effect of social security on growth (Salai-i-Martin 1996; Lee and Chang 2006). Several studies have reported a positive effect of education and health spending on growth (e.g., Beraldo, Montelio, and Turati 2009), while some have found insignificant or negative effects. For example, analyzing data for 72 countries over the 1970–89 period, Kelly (1997) finds that health expenditure is negatively related to growth and conjectures that misallocation of health resources might have caused this result.

While most studies have analyzed only a subset of social expenditures, a small group of empirical studies have assessed the growth effects of a broader range of social spending, including education, health, and social security expenditures. Examining panel data from both old and new post-socialist EU countries from the mid-1990s to 2008, Izák (2011) finds that both health expenditure and social security reduce growth, whereas education expenditure supports growth. In contrast, analyzing panel data from 18 OECD countries for 2002–2013, Alper and Demiral (2016) find that all three components of public social expenditures significantly and positively contribute to economic growth. Applying a multivariate panel cointegration analysis, Alam, Sultana, and Butt (2010) also observe the existence of long-run dynamic relationships between social expenditures and economic growth for 10 Asian countries in 1970–2005.

Thus, existing empirical studies have not yielded clear-cut conclusions. One possible reason for the conflicting results could be the presence of non-linear or non-monotonic relationships between public social spending and growth. For example, Lambrecht, Michel, and Vidal (2005) and Glomm and Kaganovich (2008) suggest models with a non-monotonic relationship between social security spending and growth. Analyzing a cross-country sample of 61 countries and panel data for 20 OECD countries, Bellettini and Berti Ceroni (2000) find that the positive impact of social security expenditure on economic growth is larger in less developed countries than in more developed countries. For the health sector, Yang (2020) observes a non-linear relationship between health expenditure and economic growth. This is in line with studies such as those by Aydin and Esen (2019), who found a non-linear relationship between total government expenditure and economic growth.

Literature on the association between government effectiveness and economic growth

The impact of public social spending may depend not only on the size of budget allocation but also on the quality of public administration in charge of formulating social policies and delivering public goods. Studies have shown a significant degree of cross-country differences in the public sector's performance and efficiency (Afonso, Schuknecht, and Tanzi 2010; Antonelli and De Bonis 2018). North (1990) proposes a theoretical framework in which institutions, as the rules of the game in a society, reduce uncertainties in human interactions by providing a framework within which to operate. Thus, institutions shape the incentives of economic agents and become the underlying determinant of economies' long-run performance. Knack and Keefer (1995) suggest that the security of property rights and the efficiency with which governments determine policies and allocate public goods are significant determinants

of economic growth. Hall and Jones (1999) show that institutions and government policies shape the economic environment within which people accumulate skills and companies accumulate capital and produce output. Thus, effective governments are expected to promote productivity, capital accumulation, and economic growth.

Empirical studies examining the impact of government effectiveness have produced mixed results. For example, Acemoglu, Johnson, and Robinson (2001) and Rodrik, Subramanian, and Trebbi (2004) highlight the role of historically generated political institutions in determining future economic growth and development. Other empirical studies include Hausmann, Pritchett, and Rodrik (2005) who examine the role of economic policy as a significant predictor of sustained growth accelerations; Alam, Kitenge, and Bedane (2017) the positive impact of government effectiveness on economic growth across 81 countries; Rodrik (1997) and Law and Habibullah (2006) the importance of institutional quality in explaining the performance of East Asian countries; and Osman, Alexiou, and Tsaliki (2012) and Fayissa and Nsiah (2013) the importance of institutional quality in the economic performance of sub-Saharan African countries. In contrast, other studies have cast doubt on the causal association between government effectiveness and subsequent growth (Quibria 2006; Kurtz and Shrank 2007).

While these past studies have mainly focused on the direct impact of government effectiveness on growth, Baldacci et al. (2008) explore the role of government effectiveness in mediating the effects of public spending on growth. Using panel data from 118 developing countries in 1971–2000, the authors find that the quality of governance does not affect growth directly but contributes to it mainly through its positive impact on the association between education and health expenditures and human capital outcomes. Butkiewicz and Yanikkaya

(2011) examine this effect for government capital expenditure and consumption expenditure, and Kimaro, Keong, and Sea (2017) investigate this mediating effect for the total government expenditure of 25 Sub-Saharan African countries. Empirical investigation into the mediating effect for a broad category of public social expenditure has been rare; therefore, this is the focus of our study.

III. Data, model, and methodology

Data and model

We use panel data covering the 2008–2019 period for 132 countries—a representative panel of regions covering Eastern Europe and Central Asia, the Middle East and North Africa, Latin America and the Caribbean, East Asia and the Pacific, South Asia, and Sub-Saharan Africa. All data except for the social protection variables were sourced from the WDI. The social protection variables, including social security benefits, are taken from the IMF’s GFS database. The dependent variable is real GDP per capita growth. As the figure for GDP, incorporates health and education expenditure, which are right hand side variables in our regression equation, we reduce these expenditures from GDP, and then calculate the GDP per capita growth rates for the countries in the sample (Friedman and Meiselman 1963 and Friedman and 1957). The base-model includes the commonly used variables identified in the literature as potential factors determining economic growth: the investment ratio measured by gross capital formation as a percent of GDP, the population growth rate, the stock of education human capital proxied by the secondary enrolment ratio (Barro 1991; Mankiw, Romer, and Weil 1992), and the stock of health human capital measured by the child mortality rate per 1,000 births (Gyimah-Brempong and Wilson 2004).

Our main variables of interest are government expenditure in three broad areas: (1) social protection, (2) education, and (3) health. We use three different variables to capture government social protection expenditures: social security benefits as a percentage of GDP, social assistance benefits as a percentage of GDP, and employment-related social benefits as a percentage of GDP.² Government expenditure on education as a percentage of GDP, and government expenditure on health as a percentage of GDP are used to capture government spending on education and health.

Another main variable of interest is government effectiveness. As in past studies such as Kurtz and Shrank (2007) and Alam, Kitenge, and Bedane (2017), we used the government effectiveness indicator taken from the Worldwide Governance Indicators (WGI) developed by the World Bank (Kaufmann, Kraay, and Mastruzzi 2009). The WGI contain six sub-indicators of governance, among which the government effectiveness indicator captures perceptions concerning the quality of public services; the quality of the civil service and its degree of independence from political pressures; the quality of policy formulation and implementation; and the credibility of the government's commitment to such policies, constitutes the main

² The IMF GFS database includes three categories of social protection expenditures (IMF 2014). Social security benefits are social benefits payable in cash or in kind to households by social security schemes. Social security benefits in cash include sickness and invalidity benefits, maternity allowances, children's or family allowances, unemployment benefits, retirement and survivors' pensions, and death benefits. Social security benefits in kind consist of goods and services purchased from a market producer on behalf of households and reimbursements of benefits purchased by households in accordance with the rules of the scheme.

Social assistance benefits are transfers payable to households to meet the same needs as social insurance benefits but not made under a social insurance scheme. Social assistance benefits may be payable when no social insurance scheme exists to cover the circumstances in question, certain households do not participate in existing social insurance schemes, or social insurance benefits are deemed inadequate to meet particular needs.

Employment-related social benefits are social benefits payable in cash or in kind by government units to their employees or employees of other government units participating in the scheme (or to survivors and dependents of the employees who are eligible for such payments). The kinds of benefits provided are similar to those listed for social security schemes, such as the continued payment of wages during periods of absence from work as a result of ill health, accidents, maternity, etc.; family, education, or other allowances; severance allowances in the event of redundancy, incapacity, or accidental death; general medical expenses not related to the employees' work; and charges for convalescent and retirement homes.

subject of our study. Several interaction terms are incorporated into the model to investigate the differential impacts of public social expenditures and government effectiveness in different countries grouped by income level. Dummy variables are included for low- and middle-income countries, with the high-income group as the benchmark group.

The estimation methodology

We use the fixed effects estimator to control for any unobserved country-specific, time-invariant effects. Equation (1) expresses the panel data model as follows:

$$g_{it} = Y_{it-1} + X_{it}\beta + \varpi_i + \eta_t + \mu_{it} \quad (1)$$

where, g_{it} is real GDP per capita growth in country i , in period t . Y_{it-1} is the initial level of GDP per capita. X_{it} is a vector which includes all independent variables, including the social security and control variables. ϖ_i captures country-specific effects, and η_t considers relevant time effects. μ_{it} is a random error term.

All explanatory variables used in our empirical model are not strictly exogenous. The difficulty in establishing causal relations from public social expenditures to economic growth is the potential endogeneity of social expenditures. The Arellano-Bover (1995) Blundell-Bond (1998) system GMM estimator is an approach that allows to control for the joint endogeneity of explanatory variables through the use of internal instruments. Arellano and Bover suggest using the system GMM estimator, which is an efficient approach for panel data estimation and involves using lagged first differences as instruments for the equation in levels and lagged levels as instruments for the equation in first differences; in this way, all the available moment conditions can be fully exploited. Therefore, we adopt the system GMM approach, which maximizes the consistency and efficiency of the applied estimator. We conduct two diagnostic tests: (1) the Hansen test for over-identifying restrictions under which the null hypothesis is

that the instruments are not correlated with the residuals, and (2) the Arellano-Bond test for second order correlation in the first differenced residuals.

Economic growth and social expenditures may both be related to a third variable omitted from the estimation. In this case, the estimates may be biased and inconsistent, and the relationship between the variables could be a correlation rather than a causal relation. Therefore, instrumental variable (IV) estimation could be useful, in addition to system GMM as a test for establishing causality. In the IV estimation, a good instrument should be correlated to social expenditure and not influence growth through other channels. As in Bellettini and Berti Ceroni (2000), we use the percentage of population over 65, which is highly correlated to social expenditure but has a very low correlation with economic growth, as our instrument. The first stage F-statistics in the system all exceeded 10 with a p value of 0.00; therefore, the instruments are relevant. The null hypothesis that the instruments are exogenous was rejected at the 1% level of significance, with a p value of 0.01, for the J test.

IV. Empirical results

The preliminary estimation was conducted using fixed effects estimation to control for time-invariant country effects. Table 1 reports the results. All variables are converted into logarithmic form for empirical estimation. The dependent variable is real GDP per capita growth. The three government social protection variables are used one at a time in the estimation as these benefits may overlap. Column (1) presents the estimates for social security benefits on economic growth without controlling for other variables. In column (2), we add additional control variables to the estimation. The results show that social security benefits have a significant positive effect at the 1% level on economic growth. Examining the other

variables that influence economic growth, according to the results in column (2), we find that gross fixed capital formation and education human capital as measured by the secondary enrolment ratio have a positive and significant effect on economic growth. In addition, the population growth rate is not statistically significant. The coefficient of the child mortality rate per 1,000 births is negative and statistically significant at the 1% level, suggesting that higher levels of child mortality slow down economic growth. Government expenditure on education and expenditure on health, which are our additional variables of interest, have a positive and significant impact on economic growth: a 1% increase in public education expenditure, for examples, leads to a 0.01% increase in economic growth; similarly, a 1% increase in public health expenditure leads to a 0.11% increase in economic growth. The initial level of GDP is negative and statistically significant, implying the convergence of the models.

In column (3) and (4), we re-estimat the model in column (1) and (2) by replacing social security benefits with social assistance benefits. The results are similar to those in column (1) and (2), with social assistance benefits showing a positive and significant effect on economic growth. Government expenditures on education and health also continue to have a positive significant effect on economic growth. In columns (5) and (6), we re-run the estimation with employment-related social benefits as a percentage of GDP. The results are again similar to those obtained from estimation using social security benefits and social assistance benefits. Our results are consistent with those of Sala-i-Martin (1996) and Bellettini and Berti Ceroni (2000), among others, who show that social security expenditures are associated with an increase in growth. The results also support the argument that public expenditure on education and health contributes to growth through the accumulation of education and health human capital.

[Table 1, about here]

Robustness checks

System GMM and IV Estimation

Next, we estimate the models in columns (1) and (2) of Table 1 using the system GMM and IV methods to correct for possible endogeneity bias. As the results using social security benefits, social assistance benefits, and employment-related benefits are consistent, we report only the estimation using social security benefits. The results for the GMM estimation reported in columns (1) and (2) of Table 2 are broadly similar to those of Table 1, with the exception that population growth is positive and significant. The main variables of interest—social security benefits, education spending, and health spending—have a positive and significant impact on economic growth. The Hansen test and the serial correlation test in the system GMM estimation confirms that the moments conditions cannot be rejected.

Columns (3) and (4) report the results of the IV estimation. As stated above, we use population over 65 as an instrument for the social spending-related variable. As a rule of thumb, if the F-statistics in the models exceed a value of 10, then they suggest instrument relevance (Staiger and Stock 1997); nevertheless, this has been found to be an inadequate measure of instrument relevance (Stock, Wright, and Yogo 2002). In a weak instrument setting, the tests of Cragg-Donald Wald F-statistic and the Kleibergen-Paap Wald F-statistic become more reliable as statistical inferences. An F-statistic above the critical value (10% maximal test size) indicates the rejection of weak instruments. Additionally, in the second-stage equation, the instrumental variables should not vary systematically with the disturbance term. The Hansen J test (Hansen 1982) is employed to check whether the selected instruments satisfy the exclusion restriction; the joint F-statistics from the first stage reject the null that the instruments selected

are not relevant. The Cragg-Donald Wald F-statistic and the Kleibergen-Paap Wald F-statistic test the identification of the equation as a whole, rejecting the hypothesis that one of the endogenous regressors is under- or weakly identified. The IV estimation results reported in columns (3) and (4) of Table 2 are qualitatively similar to the baseline models in Table 1.

[Table 2, about here]

Incorporating government effectiveness

Next, we include, government effectiveness, and re-run the estimation to test both the direct and mediating impacts of government effectiveness on growth. The mediating impact is tested in the interaction with social security, education, and health expenditures. The results are reported in columns (1) and (2) of Table 3. Column (1) incorporates a variable for government effectiveness. The coefficient is positive and significant at the 10% level, implying that government effectiveness has a direct and positive effect on economic growth. This result is in line with past research showing that government effectiveness contributes to subsequent economic growth (e.g., Alam, Kitege, and Bedane 2017). Column (2) adds the interaction terms between the government effectiveness and social expenditure variables. The coefficients on all three interaction terms are positive and significant, suggesting that government effectiveness promotes economic growth through its mediating impact on the association between social expenditures and economic growth. The earlier study by Baldacci et al. (2008) showed this mediating effect for education and health spending. Our analysis confirms this impact for all three categories of social spending, including social security benefits. Thus, the results of Table 3 suggest that government effectiveness has a positive effect on the efficiency of social spending on economic growth through both a direct impact and a mediating impact.

[Table 3, about here]

Estimating for countries grouped by income level

Next, we examine our research question concerning whether these relationships differ between countries grouped by income level. First, the models in Table 2 are estimated by incorporating a set of dummy variables for countries grouped by income level. Three dummy variables are defined for high-income, middle-income, and low-income countries, with the high-income group as the benchmark group. As the effects of public social expenditures on economic growth could vary depending on a country's development level, the interaction terms between these country groups and the expenditure variables are also incorporated into the models. Table 4 reports the results.

[Table 4, about here]

The results in all three columns using FE estimation, system GMM, and IV are qualitatively similar to those obtained above. The main variables of interest—social security benefits, education spending, and health spending—remain positive and statistically significant. The coefficients of the middle- and low-income dummy variables are negative in all columns, implying that if a country is a middle-income one, its growth rate is approximately lower than in the benchmark or high-income group.

The interaction terms between the middle- and low-income country dummy variables with social security benefits and expenditures on education and health indicate that countries in the middle-income and low-income groups perform worse in terms of economic growth compared to those in the high-income group under all three estimation methods. The coefficients on the interaction terms for the low-income country group are negative and higher than those for the middle-income group, signifying that they perform worse compared to the middle- and high-income groups. Thus, the results suggest that high-income countries have

higher public spending efficiency in terms of transforming public social expenditures into economic growth, followed by middle-income countries and low-income countries. This is observed for all three categories of social spending. Although we cannot state any concrete reason for this result, it might be related to the presence of relatively higher inequality and larger segments of poor households in lower-income countries. The analysis by Cingano (2014) suggests that wider income inequality lowers the educational and occupational opportunities of individuals from low socioeconomic family backgrounds; this hinders the potentially positive effects of providing incentives for human capital accumulation and productivity through public social spending for this population group.

Given the results in Table 4 above, we disaggregate the sample by income level and estimate the models with government effectiveness to determine whether and to what extent the associations between social spending, government effectiveness, and economic growth can be observed in different parts of the world's income distribution. The results reported in Table 5 show that the coefficients of social security benefits, education spending, and health spending are significant and positive in all subsamples of high, middle, and low-income countries. We also find a statistically significant positive effect of government effectiveness—both direct and mediating positive effects—on growth for all three income groups. Thus, the associations between social spending, government effectiveness, and economic growth are observed for countries at different income levels. The coefficients on social expenditures are higher in the high-income group, followed by the middle-income group. These results are consistent with those outlined in Table 4.

[Table 5, about here]

Lagged Values

As public social spending can take time to influence economic growth (Izák 2011), we lag social security benefits, education spending and health spending by five periods and re-estimated the models in columns (1) and (2) of Table 3. The results reported in Table 6 are qualitatively similar to those obtained above. The coefficients on all three social expenditures are higher, suggesting that the lagged values have a stronger impact on growth. As before, government effectiveness has both a direct growth-enhancing effect and a mediating impact on the association between three components of social spending and economic growth.

[Table 6, about here]

Excluding Health and Education Expenditure from the Dependent Variable

Finally, Friedman and Meiselman (1963) and Friedman and Becker (1957) argue that consumption is correlated to income and therefore, it is plausible to remove autonomous expenditures from both sides of the equation. As health and education expenditures are independent variables, but are also incorporated in the dependent variable GDP, we exclude these expenditures from GDP, and re-estimate the model given in Table 3. The results are reported in Table 7.

[Table 7, about here]

While the size of the coefficients on health and education are slightly smaller, the conclusions remain the same. Health and education expenditure continue to have a positive and significant effect on GDP per capita growth. Similarly, government effectiveness continues to have a direct and positive effect on economic growth and the interaction terms between government effectiveness and social benefits and health and education expenditure continue to be positive

and significant, suggesting that the relation between social spending and GDP per capita growth is an economic relation rather than an arithmetic one.

V. Conclusion

This paper reports the results of an investigation into the relationships between public social spending, government effectiveness, and economic growth, using panel data for 132 developed and developing countries from 2008 to 2019. This study finds significant and complementary relationships among the variables based on an analytical framework that examines the channels through which the public sector affects economic growth through social spending policies. All three components of public social spending—social security benefits, education spending, and health spending—have a positive and significant impact on economic growth, which implies complementarity between social spending policies and economic growth. Furthermore, government effectiveness has a direct growth-enhancing effect as well as a significant mediating effect on the relationship between public social spending and economic growth. Thus, in countries with effective governments, the positive effects of greater social spending can increase substantially. These relationships hold for countries at all income levels, while the channels predicting a positive social spending–growth relationship are stronger in high-income countries than in lower-income countries.

Our study suggests that various public policies could be effective in moving countries toward inclusive growth. Social security benefits, education spending, and health spending have a growth-enhancing effect; thus, they should not be viewed as a fiscal drain but as a productive investment generating a significant and positive effect on subsequent economic growth. Governments should endeavor to maximize the benefits of public social spending by

channeling more funds into the social sectors to stimulate inclusive growth, particularly in low-income countries. At the same time, countries should make concerted efforts to strengthen the quality of public institutions, which can work as a catalyst for accelerating the impact of public social spending on economic growth. Without this effort, the positive effects of increased social spending may be reduced. The results also show a substantial time lag between increased social spending and government effectiveness on the one hand, and the realization of their full effects on economic growth on the other. Policymakers will need to keep this lag effect in mind when designing and evaluating policy interventions.

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