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# The effect of institutional factors and people's preferences on expenditure for social protection

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**Abstract** This article analyses whether and to what extent social protection expenditure varies with institutional quality and people's preferences using cross-section and cross-country panel data. It uses data on expenditure taken from the International Labour Office database focusing on 52 low- and middle-income countries and on 80 high-, low- and middle-income countries. The results show that both factors have an impact for the group of low- and middle-income countries, but also for all the countries in the sample. The estimates are robust to different definitions of the dependent variables and different measures for the quality of institutions. Our results suggest that it is worthwhile to continue enhancing the capacity of institutions and public authorities as well as to channel people's preferences on social protection interventions into the planning and budgeting process where the decisions on social protection programmes are taken and resources allocated.

**Keywords** developing countries, social protection, public expenditure, international

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## Introduction

Although developing countries have shown significant progress in investing in social protection, and global recognition of the role these programmes play in fostering inclusive development has increased, most of the poor in low- and middle-income countries are not covered by any social protection programme and significant gaps in programme coverage persist around the globe (World Bank, 2018, p. 189). The existing evidence<sup>1</sup> tends to confirm the positive effects of social protection programmes on the reduction of poverty and inequality, the accumulation of human and physical capital and the local and regional spill-over effects (ESCAP, 2015; World Bank, 2011a), to name just a few. The remaining coverage gaps raise the question of why countries are not increasing their investments in social protection, to implement at scale social protection programmes that effectively protect the poor and other vulnerable groups against shocks. The existing literature converges on two main reasons: the availability of financial resources and political commitment. There is a significant amount of research that focuses on the affordability and financing of social protection programmes in developing countries (Barrientos, 2013; Behrendt et al., 2005; Ortiz et al., 2017). Other studies investigate the determinants of social protection in developed countries (Hålg, Potrafke and Sturm, 2020). In addition, it is recognized that the level of social protection expenditure in a country depends, among other factors, on its demography, its governance and the economic and political environment (Cichon et al., 2004; Hickey et al., 2020; Wilensky, 1975).

This article expands on the work conducted by Delavallade (2006) that assesses the extent to which corruption may affect the structure of government spending using a set of 64 countries. Our analysis provides new evidence on the role that institutions play in altering the expenditure of social protection programmes across 80 countries, but with a focus on 28 developing countries. Furthermore, inspired by the existing literature on how people's preferences influence government choices towards redistribution policies (Alesina and La Ferrara, 2005; Duman, 2013), the article empirically tests the linkages between people's request to governments to provide for more services and its effect on the levels of expenditure on social protection. We introduce variables to control for the maturity of social protection systems, poverty levels, inequality, and rents from natural resources. We make use of the International Labour Organization dataset (ILO, 2014, Table B.12), which also contains data for low- and middle-income countries.

1. Although social protection programmes can tackle the structural aspects of exclusion in various ways (Devereux and Sabates-Wheeler, 2004), more research is needed to understand the strengths and limitations of social protection in tackling social exclusion and promoting inclusion (Babajanian, 2012).

The hypothesis advanced is that well-functioning, freely elected and accountable governments tend to be more perceptive and responsive to their citizens' preferences on redistribution programmes. In addition, a well-performing government can better support the planning and budgeting process that determines the allocation of financial resources to social protection taking into account political and economic considerations. The findings presented indicate that the functioning of institutions and people's preferences influence the level of social protection expenditure. The results are significant across different measures of social protection and quality of institutions. In addition, indicators for the maturity of social protection systems and the level of government revenues are positive and highly significant. This is in line with the existing literature, which affirms a degree of path dependency of social protection expenditure over time and the importance of examining tax policies in conjunction with the design of social protection programmes.

The article begins by presenting the main definitions used in the analysis and refers to the existing literature introducing a simple conceptual framework. In turn, we describe the specification strategy, the econometric methods and the data. Following a presentation of the empirical results, we conclude and identify policy implications.

### Institutions, people's preferences and social protection

The existing literature does not converge on one single definition of the concept of social protection. The ultimate objective of social protection is to alleviate poverty and provide income security while minimizing social risk (Barrientos and Hulme, 2010; Barrientos, Hulme and Shepherd, 2005; Conway, de Haan and Norton, 2000; Holzmann, Sherburne-Benz and Tesliuc, 2003) and addressing the causes of poverty and not simply its symptoms (World Bank, 2001). Traditionally, social protection is associated with a range of public institutions, rules, and interventions aimed at protecting and preventing individuals and their households from poverty and deprivation (Barrientos, Hulme and Shepherd, 2005). In addition, social protection interventions have a profound impact on income distribution (Cichon et al., 2004). Through the provision of income, they allow households to smooth consumption and respond to vulnerabilities and contingencies (Kochar, 1999; Morduch, 1995). The concept of social protection has considerably widened from a notion related to policies that attempt to target the poor towards a universal approach based on the concept of human rights (Samson, 2013).

In this article, the term social protection programme indicates one or a combination of the following policy instruments, which are typically provided by public institutions or the provision of which is mandated to private entities or

nongovernmental organizations. The first is social insurance, such as for pensions and health or cash benefits for individuals or households who are vulnerable to specific risks, for example for unemployment, work injury or sickness. The financing for this policy instrument comes mainly from compulsory contributions (“contributory”), normally shared between employers and workers. The second instrument is social assistance (often called the “safety net”), which consists of a minimum income guarantee, a cash or in-kind transfer, for example to remove financial and income-related barriers to access social services or to promote income generating activities (Dupper, 2013; Piachaud, 2013). This policy instrument is mainly tax-financed (“non-contributory”), designed usually to relieve poverty and targets a specific category of the population, for example, income transfers to the elderly or children.

The term “institutions” can be interpreted in many different ways and is sometimes used interchangeably with the term “organizations” (Abah, 2012). This article refers to “institutions” as the rules of the game in society, as defined by North (1990), making reference to the set of formal legal frameworks, such as the laws, established in a country and the capacity of the government to enforce their respect. The term “performance of institutions” is used here to identify the quality of institutions, such as their functioning<sup>2</sup> or effectiveness (Rueschemeyer and Evans, 1985) and their interactions with the government in carrying out its activities to achieve a set of goals (McNamara, 1999).

People’s preferences can affect and drive the support for income redistribution in society. Individuals tend to support redistribution programmes either because their situation is improved after the implementation of the programme or because a redistribution programme conforms with their vision of what constitutes a good policy for society as a whole (Corneo and Grüner, 2002) or matches their values and beliefs (Fong, 2001). In this article, people’s preferences are defined as the degree of involvement that people would like the government to play in providing public services.

### *Social protection programmes: Evidence and challenges*

Over the last decade, the important role that investments in social protection programmes have played to support economic development has been recognized (Morel, Palier and Palme, 2012). In 2015, most countries had social protection systems established by law, albeit in many cases only for a minority of their population (ILO, 2017). Governments that decide to implement social protection

2. A critical and systematic discussion and review of concepts, evidence and measures of state capacity can be found in Cingolani (2013).

programmes are called to make choices with respect to the mix and scope of programmes based on country-specific contexts (World Bank, 2015).

A question asked frequently in recent years is whether and to what extent social protection programmes are effective. The evidence generated in numerous studies across different countries shows the positive impact of these programmes in improving poverty indicators, as well as on schooling and health, thereby raising overall human capital in the future (Baez and Camacho, 2011; Banerjee, Duflo and Sharma, 2020; DSD, SASSA and UNICEF, 2012, p. 132; The Kenya CT-OVC Evaluation Team, 2012), reducing inequality, improving social cohesion and effectively redistributing wealth among households (Debowicz and Golan, 2014; Handa et al., 2000) and different categories of the population (Jutting and Prizzon, 2013; OECD, 2009). In many countries, flagship programmes – such as *Prospera* (previously called *Oportunidades*) and *Seguro Popular* in Mexico, *Bolsa Família* in Brazil, the subsidized health insurance scheme in Colombia, the child, old age and invalidity grant system in South Africa, and the health insurance scheme in Rwanda – have shown the effects of social protection programmes on poverty and human capital outcomes. More recent studies have measured the positive local and regional multiplier effects that each dollar transferred to a poor household can generate (Thome et al., 2013; 2016), while others have estimated the rates of return on investments in social protection (Mideros, Gassmann and Mohnen, 2015).

Following up on these positive experiences, many other developing countries have either initiated or expanded their investments in social protection. To accompany this process, the international community has recently stepped up its support of the expansion of social protection programmes while addressing some underlying factors that delay their implementation. The ILO Social Protection Floors Recommendation, 2012 (No. 202) was adopted by the International Labour Conference (ILC, 2012), not the least as a response to the effects of the global financial and economic crisis. The objective of Recommendation No. 202 is to promote and strengthen national social protection systems involving, at least, minimum access to essential services and income security for all people across the life cycle. The International Labour Organization (ILO) and the World Bank (ILO and World Bank, 2015) have also called on world leaders to promote universal social protection, a step that further acknowledges and promotes the importance of these programmes.

In Africa, the number of cash transfer programmes has increased significantly over the last five years. In 2015, 40 out of 48 countries in the region had an unconditional cash transfer programme, which presents a doubling of the number since 2010. In 2015, conditional cash transfers had been introduced in 11 countries in Africa (World Bank, 2015). Compared to the beginning of the twentieth century, when a limited number of countries – mostly in Europe – were starting to build

social protection systems, currently the majority of countries in the world have social protection programmes covered by law.<sup>3</sup> However, and most commonly in developing countries, the benefits of these programmes do not necessarily reach the targeted population. Although some countries may have established laws to regulate the provision of social protection programmes, they may delay their implementation due to a lack of financial resources, complex procedures that deter participation or weak institutional capacity in the delivery and administration of interventions.

Many developed countries have well established and comprehensive social protection systems. Many of these industrialized countries have been increasing their social expenditure over the past decades. According to the Organisation for Economic Co-operation and Development (OECD, 2019), public social expenditure relative to the GDP increased from 14.4 per cent in 1980 to 20.5 per cent in 2016 in OECD Member countries. The increase in investment in social expenditure in these countries has been driven mainly by government ideology and electoral motives, demographic change and economic variables, such as unemployment (Hälg, Potrafke and Sturm, 2020).

Although the benefits of having social protection programmes are evident and efforts to increase these in number and scope have been strengthened, the budgets allocated particularly to non-contributory social protection programmes are still relatively constrained especially in developing countries. The global average public investment in social protection was between 7 per cent and 10.7 per cent of GDP. Expenditure on social protection (including health) displays high regional differences, spanning from about 6 per cent of GDP in Africa to 23 per cent of GDP in Europe and Central Asia (Durán-Valverde et al., 2020). Only an estimated 29 per cent of the global population enjoys access to comprehensive social protection that includes the full range of benefits, from child and family benefits to old-age pensions. The large majority – 71 per cent, or 5.2 billion people – are covered partially or not at all (ILO, 2017).

The decision to establish or expand social protection programmes mainly depends on two elements: “fiscal space”<sup>4</sup> and “political will”, i.e. government commitment to support social protection programmes (Barrientos and Hulme, 2010). Despite the fact that social protection programmes constitute an

3. The terms “covered by law”, “legal coverage” or “established by law” refer to the legal provision made by the government to anchor one or a mix of social protection instruments to the national legislation. However, the fact that specific social protection interventions are covered by country laws does not necessarily mean that their benefits reach the targeted population immediately because that depends on the actual implementation of the interventions.

4. Fiscal space defines “the availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government’s financial position” (Heller, 2005).

“investment in people” (Cichon, Hagemeyer and Woodall, 2006; World Bank, 2001, 2012), the identification of the resources to support their implementation represents a major challenge, particularly for developing countries. Governments in countries characterized by high poverty and financial constraints are concerned about the fiscal and political pressure these programmes might generate once they are established. Furthermore, the institutional capacity necessary for the implementation and delivery of the interventions frequently represents a further challenge (Niño-Zarazúa et al., 2010).

Each government must decide on the mix of domestic and external sources to be employed to support social protection programmes (ILC, 2001; Barrientos, 2007; Barrientos and Hulme, 2010; Hall, 2010). This may involve, for example, macroeconomic policy, re-allocating public expenditures, increasing tax revenues, eliminating illicit financial flows, using fiscal and foreign exchange reserves, borrowing or restructuring existing debt, printing money or using international aid (Cichon et al., 2004; Durán-Valverde and Pacheco, 2012; Heller, 2005; Ortiz, Cummins and Karunanethy, 2015). In situations where the level of taxes is already prohibitive, a country could decide to increase tax revenues by improving efficiency in tax collection or by fighting tax evasion (Ravallion, 2010; Warlters and Auriol, 2005). Failure to improve institutions generally results in a failure to implement welfare improving policies (Jennings, 2013, p. 375; Acemoglu and Robinson, 2012, p. 529). However, improving efficiency may be a daunting task especially in developing countries. Establishing a functioning and efficient tax administration without staff that have the appropriate skills, when money to pay good salaries to tax officers is scarce (Evans and Rauch, 1999; Tanzi and Zee, 2001), or in the context of corruption (D’Agostino, Dunne and Pieroni, 2016) is challenging. While developing economies may struggle to find resources to support social protection programmes, rich or fast-growing economies are in principle better equipped to find the fiscal space to support social protection interventions and redistribution programmes. At the same time, unexpected events – such as the 2008 economic crisis – may limit the ability of governments to find or sustain the financial resources in support of social protection programmes and can result in fiscal consolidation.

The second key element in the decision to allocate a budget to social protection is political will, defined as “the determination of an individual or a group of political actors to do and say things that will produce a desired outcome” (Manor, 2004). Even if fiscal space can be identified, without political commitment within the executive for reallocation, the available funds may be used for political or clientelist purposes (UNICEF and ODI, 2009). Commitment can be stimulated, and policy priorities guided, by evidence identifying the benefits to be derived from the implementation of social protection programmes



and from increasing their visibility, and from engaging with non-state actors to help embed social protection as a key part of policy, programming and resource allocation. Without political and civil consensus on how to implement the “right” to social protection, long-term commitments are difficult to obtain. Although still heavily supported by donors, Ethiopia and Nepal are examples of developing economies that have shown willingness to increase gradually the scope of social protection interventions while taking into account the available fiscal space.<sup>5</sup>

### *Conceptual framework*

Although fiscal space and political will are key in explaining commitments to social protection, other factors may also play a role. Institutional factors are expected to explain part of the variation in social protection spending. The functioning of institutions reflects, to a certain degree, the ability of governments to mobilize resources (Caiden and Wildavsky, 1974). Better institutions are generally more efficient in tax collection, which is the main source of finance for many social protection programmes. The functioning of institutions also exerts an influence through the planning and budgeting process (Wildavsky, 1992), which depends on the country context, fiscal conditions and political and economic considerations (Caiden and Wildavsky, 1974; Thurmaier, 1995; Willoughby, 1993). The planning and budget preparation in democracies consists of the following stages: i) assessment of overall resource availability and the adoption of aggregate expenditure and revenue targets; ii) disaggregation of aggregate targets into ministry ceilings; iii) preparation and distribution of budget guidelines and their distribution to spending ministries; iv) preparation of submissions by spending ministries and departments; v) review of submissions by the finance ministry; vi) preparation of draft estimates; vii) submission to and approval by parliament of draft estimates (World Bank, 1998). Although the steps appear to be sequential and distinct, in practice they can overlap. The main weaknesses in the budget preparation highlighted in the literature relate to the difficulties in making macroeconomic projections, the lack of independence of technocrats from political control, and the lack of accurate budget data and information on socioeconomic trends (Potter and Diamond, 1999). In a situation of well-functioning institutions, qualified personnel, and the sufficient capacity of ministries to carry out their own project management, the steps listed above may be executed more efficiently and effectively. At the same time,

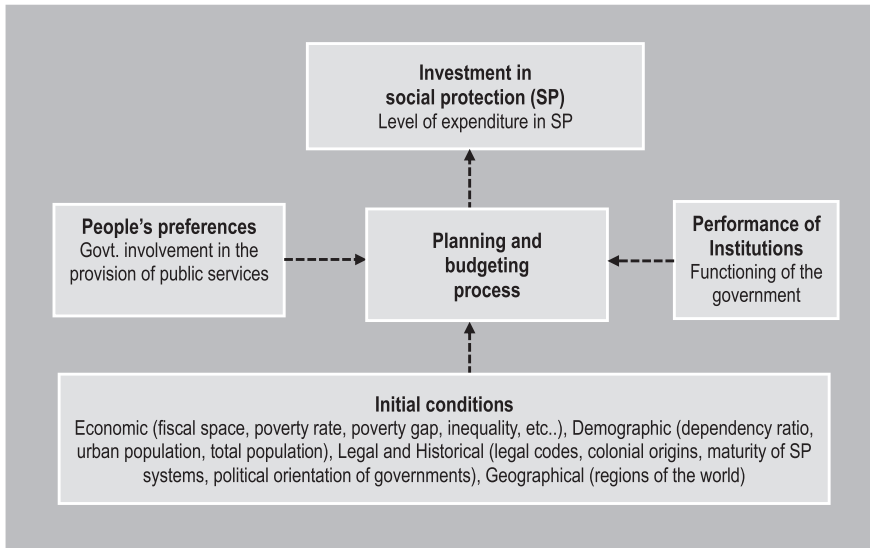
5. The Productive Safety Net Programme in Ethiopia was extended to selected urban areas in 2016/2017; the Old Age Allowance and the Child Grant in Nepal were expanded in the fiscal year 2015/16 and 2016/17, respectively.

political considerations are essential in the process of resource allocation (Norton and Elson, 2002). Alesina and La Ferrara (2005) argued that the choice for more redistribution can be affected by voting preferences and public perceptions as to the extent of government involvement in the provision of public services. Public perceptions regarding whether or not the poor deserve social assistance also affect the support for social protection programmes. According to this view, government policies and interventions are politically more sustainable if they reflect the society's preferences. People's preferences may therefore explain the level of social protection expenditure and its allocation to programme beneficiaries (i.e. targeted or universal) because of the political consequences (Pritchett, 2005; Sen, 1995). Moene and Wallerstein (2003) have argued that the degree of targeting of social protection programmes is determined prior to the political choice regarding the level of funding to be allocated. If the level of spending for social protection programmes is decided under majority rule with voters who are self-interested and who respond to targeting, a universal approach will result in a higher guaranteed income level for all. A shift towards a more targeted approach may compromise political support if the middle class does not benefit. The political economy models of targeting are based on the assumption that voters are self-interested. However, this may not be the case when people have a "prospect of upward mobility" (Bénabou and Ok, 2001). The prevalence of self-interested voters is also contested in developing countries. Evidence from Zambia indicates that voters are altruistic and prefer targeted to universal approaches (Schüring and Gassmann, 2012). The more a government is subject to fiscal constraints, as is the case in most developing countries, the more likely the decision about a specific social protection programme will depend on the political attitude concerning those who deserve support (Hickey et al., 2020).

This article argues that, in addition to a country's demographic, economic, legal, political and historical initial conditions, the quality of institutions plays a role in influencing the allocation of social protection expenditure via the planning and budgeting process. More efficient governments that are accountable to their citizens are better able to reflect and translate the preferences of their citizens into actual policies and related fiscal allocations. Figure 1 summarizes the arguments outlined above.

Changes in the public budget are not merely incremental (Wildavsky, 1964) but show a strong degree of path dependency compared to budget allocations in previous years. In particular, social protection expenditure reflects people's preferences towards social policies and government's involvement in the provision of public services and income distribution through more or less well-functioning institutions. Recent studies have analysed the determinants of expenditure of social protection across rich countries (Hälg, Potrafke and

**Figure 1.** *Conceptual framework*



Source: Authors.

Sturm, 2020) to describe why social expenditure has increased in industrialized countries. In this article, we mainly focus on developing countries where the evidence gathered is limited due to data availability.

### Estimation strategy and baseline model

Regression analysis is used to estimate the effects of the main independent variables, controlling for different economic, demographic, legal, historical and geographical factors. The dependent variable and its different measures refer to the year 2011, while the independent and control variables have been lagged by two years for the following reasons. Even though the budget outcome (i.e. the actual spending in a given year), depends on budgetary decisions made in the previous year after the completion of the planning and budget process, we have decided to use two-year lagged independent and control variables. This choice is inspired by the often limited room for budgetary reallocations and the difficulty of finding new financial resources within a short timeframe.<sup>6</sup> Lagging the independent and control variables also reduces the possibility of a simultaneity bias.

6. We have also run robustness checks using one-year lagged independent and control variables. They yielded similar results.

The following reduced form equation 1 is estimated:

$$SP_{it} = \beta_0 + \beta_1 QI_{it-2} + \beta_2 PP_{it-2} + \gamma' E_{it-2} + \delta' D_{it-2} + \theta' LH_{it-2} + \varepsilon_{it} \quad (1)$$

The variable  $SP_{it}$  measures the level of investment in social protection in country  $i$  in year  $t$ , which in this case is the year 2011.  $QI_{it-2}$  stands for the quality of institutions and  $PP_{it-2}$  measures people's preferences, both at time  $t-2$ .  $E_{it-2}$ ,  $D_{it-2}$  and  $LH_{it-2}$  are vectors of control variables for past economic performance, demographic characteristics, legal and historical factors respectively, while  $\varepsilon_{it}$  is the usual error term representing random variations across observations.

GDP per capita (in logarithm) and the level of government revenues (as a percentage of GDP), which serves as a proxy for fiscal space, are expected to have a positive effect on the allocation of resources to social protection (OECD et al., 2015). The effect of the share of natural resource rents as a percentage of GDP on the level of social protection expenditure could be positive or negative. Specifically, the richer a country's natural resources, the more it can in principle spend on social protection, but conversely a too high dependence on natural resources can lead to the so-called Dutch disease and a subsequent difficulty in funding social protection expenditure. The level of poverty in a country, measured by the poverty rate and the average poverty gap before taxes and transfers, reflects the need for social protection: the higher the extent and depth of poverty, the larger the demand for public support. Yet, high poverty rates are more prevalent in countries with limited economic potential and constrained financial resources. As for the level of inequality, predicting the sign of the coefficient of the Gini coefficient is not straightforward given that the level of social protection spending could be influenced by the inequality in access to alternative forms of social protection for richer and poorer households (Schwabish, Smeeding and Osberg, 2003).

The demographic dependency ratio is expected to contribute positively to the allocation of social protection because the greater share of benefit spending in most countries is reserved for children and the elderly (ILC, 2013). However, the impact of this variable on total social protection expenditure varies in conjunction with the specific social protection programmes implemented at country level, employment rates and the demographic dynamics of the population in the country.<sup>7</sup> The share of the urban population in a country is expected to positively influence total social protection expenditure, particularly because access to healthcare services is often concentrated in urban areas,

7. In particular, social protection expenditure is expected to be relatively higher in countries with a larger proportion of pension recipients compared to the number of working-age adults. In countries with social protection programmes that target children or youth, the expenditure on social protection can be affected by fertility, child mortality rates or the overall demographic dynamics.

especially in developing countries (Scheil-Adlung, 2015). Finally, the maturity of social protection systems is expected to contribute positively to the level of social protection expenditure (Cichon et al., 2004).

Owing to the likely endogeneity of institutions and levels of social protection expenditure, the estimates based on the ordinary least squares (OLS) method could be biased. Using an instrumental variable approach may address the issue of endogeneity. We have decided to use trade freedom (or globalization) as an appropriate instrument for the quality of institutions.<sup>8</sup> Aware of the possible bias that could affect 2SLS estimates using a finite sample (Hahn and Hausman, 2005), most of the estimates we present are based on OLS. We also attempt to partially remove the endogeneity by assuming it to be time invariant and estimating the model on panel data with fixed effects.

## Data

The data used draw on different sources (see Appendix 3). Data on the level of expenditure in social protection are taken from the ILO social protection database, which covers the years 1990–2011<sup>9</sup> and represents the most comprehensive dataset on social protection expenditure allowing for comparability among developing countries. The expenditure data are available for every five years between 1990 and 2005 and yearly for the years 2007 to 2011. In this article, we use the year 2011 for the dependent variable. Data on institutional and governance variables are taken from the Quality of Government Basic Dataset (QOG) (Dahlberg et al., 2013; Teorell et al., 2013). The QOG compiles country level data from individual researchers, from international organizations such as the World Bank, the International Monetary Fund and the International Social Security Association (ISSA), and from private sources such as Freedom House and the Heritage

8. The existing literature on institutions and economic growth (Bluhm and Szirmai, 2012) suggests different instruments for the quality of institutions. In particular, Mauro (1995) uses ethnolinguistic fractionalization to instrument bureaucratic efficiency, Hall and Jones (1999) use the distance from the equator as instrument of social infrastructure, and Acemoglu, Robinson and Johnson (2001) adopt the settler mortality to instrument institutions. These choices have been criticised by other authors. For example Acemoglu, Robinson and Johnson (2001) argue that ethnolinguistic fractionalization is influenced by economic performance and therefore is not suited as an instrument. Gallup, Sachs and Mellinger (1999) argue that the latitude can affect institutions through climate change and geography, and Glaeser et al. (2004) argue that the instrument proposed by Acemoglu, Robinson and Johnson (2001) is correlated with current disease environment and human capital, which could influence economic performance directly rather than through institutions. The proxy for human capital proposed by Glaeser et al. (2004) (average of years of schooling) has been tested and rejected as a valid instrument by Acemoglu, Gallego and Robinson (2014). Measures of openness to trade (Chan, 2002; Frankel, 2004) and human capital have been used as instrumental variable for institutions.

9. Data on social protection expenditure are published in Table B.12 of ILO (2014).

Foundation. Information on people's preferences is taken from the World Values Surveys (WVS), which collect information through interviewing representative national samples of individuals about changing values and their impact on social and political life.<sup>10</sup> The independent and control variables reflect information pertaining to the year 2009<sup>11</sup> (or the closest year available).

Due to the unavailability of data for the dependent and some independent variables (mainly on people's preferences), the estimates presented in this article are conducted using data from 80 countries: 28 high income countries (HICs) and 52 low- and middle-income countries (LICs and MICs), which have been divided in six geographical zones (see Appendix 1).

Total social protection expenditure (including administrative costs) is the sum of all existing public social protection programmes (mainly formal social protection programmes) including healthcare expenditure.<sup>12</sup> For the analysis, social protection expenditure is expressed as a percentage of GDP. Alternatively, we exclude health from total social protection expenditure.<sup>13</sup> In the sensitivity analysis, the two indicators are expressed either as a percentage of total government expenditure or as social protection expenditure per capita in international dollars. Figure 2 shows the levels of total social protection expenditure as a percentage of GDP across geographic regions in 2011. As expected, the highest level of expenditure on social protection is registered in Western Europe and North America. The lowest levels are measured for sub-Saharan Africa and South-East Asia.

A note is necessary regarding the limitation of using expenditure as a measure for the dependent variable (De Deken and Kittel, 2007). The level of total expenditure, as such, says nothing about the quality of the spending or its efficiency. Therefore, the assumption is that social protection expenditure is of equal quality across

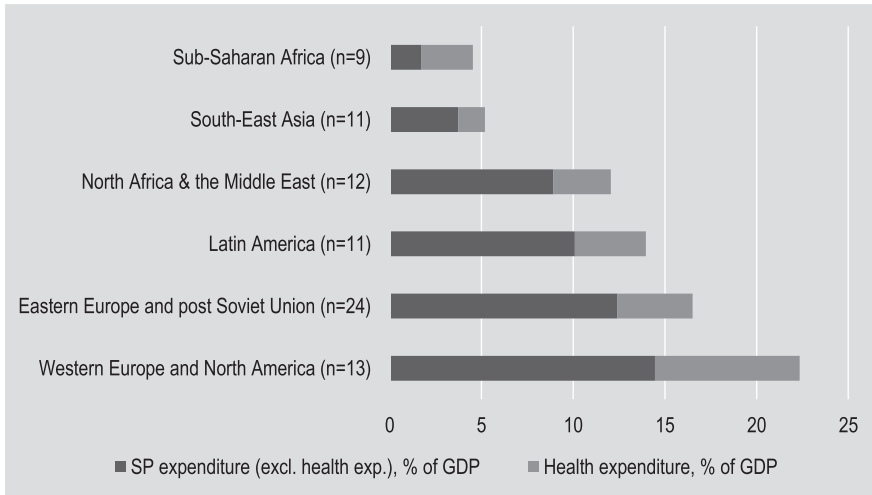
10. The proxy for people's preferences is collected from different waves of the WVS conducted during the period 1990–1994 (wave two: 17 observations); 1995–1999 (wave three: 32 observations); 2000–2004 (wave four: 31 observations); 2005–2009 (wave five: 28 observations); and 2010–2014 (wave six: 52 observations).

11. Regarding the year from which we have picked the data in the cross-sectional dataset, our first choice was 2009. If data for 2009 were not available, data for 2010 were used. If those for 2010 were not available, we used those for 2008, and if 2008 was lacking, 2011 data were used and so forth.

12. The scope of the indicator corresponds to the scope of the ILO Social Security (Minimum Standards) Convention, 1952 (No.102), which established nine classes of benefits or social protection areas (branches): 1) medical care, 2) sickness benefit, 3) unemployment benefit, 4) old-age benefit, 5) employment injury benefit, 6) family benefit, 7) maternity benefit, 8) invalidity benefit and 9) survivors' benefit, plus other income support and assistance programmes, including conditional cash transfers, available to the poor and not included under the above classes (ILO, 2014).

13. The ILO dataset contains the following indicators: social protection expenditure, health expenditure and total social protection expenditure. Public social protection spending includes all expenditures financed with resources controlled by the government (different levels of government and social security funds); such as, among others, social insurance and social assistance payments (OECD, 2007).

**Figure 2.** Allocation of expenditure to SP (different compositions) by geographic regions, 2011



Source: Authors' calculation based on ILO social protection data. Population weighted average per region; 80 countries in total.

countries. Furthermore, although measures of the quality of institutions and people's preferences are subjective, as they depend on the perspectives of respondents, they capture general values and opinions in society (Oorschot, 2000).

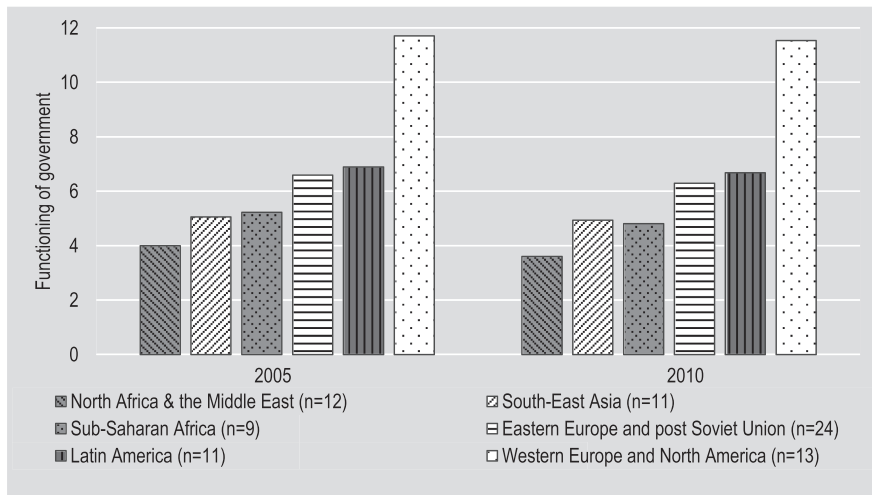
The variable *functioning of the government*<sup>14</sup> is used as a proxy for the quality of institutions and is available for the period 2005–2012. The variable examines the extent to which the freely elected head of government and a national legislative representative determine the policies of the government, whether the government is free from pervasive corruption, accountable to the electorate between elections and operates with openness and transparency: countries are graded between 0 (worst) and 12 (best).<sup>15</sup>

Figure 3 shows the average values of the index, which measures the functioning of the government across six geographic regions. While geographic disparities are evident, the values for 2010 are almost at the same level as in 2005. This is explained by the fact that changes in institutions are path dependent and evolve slowly over time, with the exception of unexpected events such as revolutions or

14. Other studies use similar measures for quality of institutions, such as alternative measures of quality and coherence of political institutions, and bureaucratic/administrative capacity; see Hendrix (2010).

15. The ratings are based on the subjective assessment of foreign investors and business experts in the respective countries.

**Figure 3.** Trend of functioning of government by geographic regions, 2005 and 2010



Source: Authors' calculation based on Quality of Government Basic Dataset (QOG) (Dahlberg et al., 2013); 80 countries in total.

natural events, which may affect substantially the overall status and performance of institutions (Acemoglu and Robinson, 2001).

Alternative indicators used in the literature to measure the quality of institutions<sup>16</sup> (Adserà, Boix and Payne, 2003; La Porta et al., 1998) are taken from the QOG dataset (Dahlberg et al., 2013), and are used to test the robustness of the findings. These indicators are *government effectiveness* and *rule of law*, which are borrowed from the Worldwide Governance Indicators (WGI) (World Bank, 2011b),<sup>17</sup> variable *property rights*,<sup>18</sup> which is part of the Heritage Foundation dataset (Heritage Foundation, 2013) and a classic measure used in the literature on institutions and economic growth (Mauro, 1995) and also used to measure the quality of government (La Porta et al., 1998), and the variable *polity2*, which is a

16. The variables used in this article to measure the performance of institutions are composed indices and have been widely used in the literature. Previously, these measures have received a degree of criticism with respect to their constructs, comparability and methodological shortcomings, thereby questioning their validity (Walle, 2006; Thomas, 2010). However, these arguments have been refuted as the critics do not provide evidence of any practical consequences, alternative definitions or failure to meet the criteria of construct validity (Kaufmann, Kraay and Mastruzzi, 2007, 2010).

17. The variables *Government effectiveness* and *Rule of law* have been transformed from the original range from -2.5 (weak) to 2.5 (strong) to a range which goes from 0 (weak) to 5 (strong) in order to facilitate the interpretation of the estimation results.

18. The scores of this indicator range from 0 to 100, where 100 represents the maximum degree of protection of property.



proxy for quality and coherence of political institutions (Marshall and Jaggers, 2009).<sup>19</sup>

The indicator for *people's preferences* measures the extent to which a society wants government to be involved in the provision of public services, redistribution or the provision of social protection interventions. The variable has values between 1 and 10 whereby a lower value is associated with the people's preference for less government involvement.<sup>20</sup> For this variable, the available data closest to the year 2009 have been used.

Control variables account for economic, demographic, legal, historical and geographical factors and have been selected according to economic and statistical criteria in relation to the variable analysed. The control variables are compiled from different sources, as listed above. The measure for the maturity of the social protection systems has been established using data provided by the ISSA.<sup>21</sup> The variable is constructed by counting the number of years since when the oldest law (legal coverage) on social protection was adopted in a country. The term "legal coverage" represents the extent to which social security areas are addressed by the national legislation, while the term "effective coverage" represents the extent to which social security areas are actually covered (actual implementation). The control variables are grouped as follows:

*Economic factors:* a) GDP per capita based on purchasing power parity (PPP) converted to constant 2005 international dollars; b) government revenue as percentage of total GDP; c) total natural resource rents as percentage of total GDP; d) income inequality (pre-taxes and pre-transfers) measured by the Gini coefficient; e) poverty rate and poverty gap according to the international standard (below 1.90 USD PPP per capita per day in constant 2011 international dollars derived from the latest available World Bank PovCal<sup>22</sup> data and limited to low- and middle-income countries).

*Demographic factors:* a) total age dependency ratio (younger than age 15 and older than age 65 to the population aged 15–64); b) proportion of the urban population; c) total population.

19. The scores of this indicator range from –10 to 10, where 10 represents highly stable and democratic institutions.

20. World Values Survey, latest available data. Question: Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 10 means you agree completely with the statement on the left; 1 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Higher scale: The government should take more responsibility to ensure that everyone is provided for. Lower scale: People should take more responsibility to provide for themselves. For easier interpretation, the variable has been transformed and reversed compared to the original one.

21. See ISSA Country profiles online database.

22. The latest PovCal data are based on estimates of global poverty from 1981 to 2012 based on 2011 purchasing power parity (PPP).

*Legal and historical factors:* a) country's legal systems; b) colonial origin; c) maturity of social protection system in the country.

Our proposed instrument for the variable measuring the quality of institutions is an index of trade freedom, which measures the trade-weighted average tariff rate and the non-tariff barriers. The descriptive statistics for these variables are reported in Appendix 2.

## Results

Table 1 presents the results of estimating equation 1 for the 52 low- and middle-income countries and for the entire set of 80 countries and by using successively OLS with robust standard errors and 2SLS on cross-sectional. In the 2SLS approach, we instrument the variable functioning of the government<sup>23</sup> with trade freedom to address the potential endogeneity of the quality of institutions due to reverse causality, common dependency with respect to a third variable, or measurement error between social protection expenditure and the quality of institutions. While trade freedom could reflect the vulnerability of a country to international economic fluctuations and may therefore increase the necessity for social protection expenditure (Dreher, 2006), it is not correlated over a period of ten years (1999–2009) with either the variation in exchange rates or the trade deficits,<sup>24</sup> which are alternative measures of vulnerability. Hence, the choice of trade freedom<sup>25</sup> is considered as an appropriate instrument for the variable functioning of government used in models 2 and 6. It also seems to be a valid instrument on the basis of its significance in the first-stage estimation, conditional on all other explanatory variables. The coefficient of people's preference is positive and significant in the models 1 and 2 for low- and middle-income countries.

The estimates show that the proxies for quality of institutions and people's preferences influence the level of expenditure in social protection in low- and middle-income countries. In the model specification (1) for developing countries, both variables are significant and positive with the exception of functioning of the government in the model specification (2). An increase in the functioning of

23. Functioning of the government is the variable that is instrumented by trade freedom in models 2, 4, 6 and 8: F statistics are used to test the weak identification. According to Staiger and Stock (1997), if the F-statistic is higher than 10, weak identification is not a matter of concern.

24. Exchange rate defined as local currency units (LCU) per US dollar (USD), with values prior to the currency's introduction presented in the new currency's terms and trade deficit is defined as net trade in goods (BoP, current USD), data from the World Development Indicators – World Bank.

25. The trade freedom score is based on two inputs: the trade-weighted average tariff rate and non-tariff barriers (NTBs). Weighted average tariffs is a purely quantitative measure and accounts for the basic calculation of the score. The presence of NTBs in a country affects its trade freedom score by incurring a penalty of up to 20 percentage points, or one fifth of the maximum score. The country's trade freedom ranges between 0 and 100, where 100 represents the maximum degree of trade freedom (Dahlberg et al., 2013).

## The effect of institutional factors and people's preferences on expenditure for social protection

**Table 1.** *Institutions, people's preferences and social protection (SP) expenditure*

Dependent variable	Total SP expenditure (as % of GDP)			
	Low- and middle-income countries		High-, low- and middle-income countries	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Functioning of government	0.408** (0.196)	0.293 (0.686)	0.533** (0.205)	-0.370 (0.733)
People's preferences – (Govt. provision of public services)	1.492** (0.663)	1.439* (0.771)	0.866 (0.557)	0.632 (0.665)
Maturity of SP systems	0.041* (0.024)	0.045 (0.036)	0.082*** (0.025)	0.123** (0.048)
Log per capita GDP, PPP (2005 constant intl. \$)	-0.016 (1.284)	0.165 (1.444)	1.101 (1.139)	3.641 (2.184)
Government revenue (% of GDP)	0.249*** (0.087)	0.250*** (0.090)	0.137** (0.057)	0.119* (0.067)
High share of natural resource rents	-1.384 (1.304)	-1.628 (2.014)	-2.370** (0.966)	-4.435** (1.956)
Poverty rate (1.90\$/day) (80 countries)	-0.190 (0.124)	-0.160 (0.189)	-0.315** (0.156)	-0.041 (0.252)
Poverty gap (1.90\$/day) (80 countries)	0.414 (0.260)	0.365 (0.350)	0.621** (0.289)	0.178 (0.434)
Gini index	-0.060 (0.080)	-0.052 (0.098)	-0.200*** (0.067)	-0.173** (0.078)
Age dependency ratio (total)	-0.036 (0.057)	-0.035 (0.058)	0.060 (0.048)	0.091 (0.065)
Urban population (% of total)	0.001 (0.039)	0.002 (0.040)	0.001 (0.036)	0.001 (0.040)
Population, total (in millions)	0.000 (0.002)	0.000 (0.002)	0.002 (0.003)	0.000 (0.002)
Constant	-4.148 (11.398)	-5.396 (12.247)	-8.785 (11.505)	-28.729 (19.566)
Observations	52	52	80	80
R-squared	0.721	0.719	0.789	0.736
<b>First Stage estimates and IV statistics</b>				
Trade Freedom	0.096*** (0.028)		0.091*** (0.032)	
Weak identification test	11.74			7.87

Note: Robust standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Models (1), (2), (3) and (4) use cross-sectional data with the dependent variable measured in 2011 and the explanatory variables in 2009. Social protection (SP) expenditure refers to the year 2011 or the closest year available. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the two levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents".

Source: Authors, based on the literature review.

the government index by one unit is associated with a change in the level of social protection expenditure of 0.41 per cent of GDP for the 52 low- and middle-income countries using cross sectional data (see column (1) in Table 1).

A unit increase in the people's preferences index changes the level of expenditure of social protection by as much as 1.4 per cent of GDP in low- and middle-income countries (see columns (1) and (2)).

Holding all other variables constant, one additional year of maturity of the social protection system increases by about 0.1 percentage points the level of expenditure in social protection over GDP in the total list of countries, which includes high-income countries. This is in line with the existing literature on path dependency and maturity of social protection systems (Cichon et al., 2004). A significant and positive effect is also associated with the level of government revenues that serves as a proxy for fiscal space. The fact that this variable is significant confirms that the level of social protection spending cannot be considered separately from tax policies (Bastagli, 2015). The wealth effect, measured by the logarithm of per capita GDP, contributes positively to the level of expenditure in models 2, 3 and 4. The share of natural resource rents does not seem to be related to the level of social protection expenditure in developing countries, while its coefficient is negative and significant across the model specifications conducted on all countries. The poverty rate is negatively correlated with social protection expenditure, but an increasing poverty gap is associated with higher social protection expenditure in model 3.

The Gini index captures the inequality in income distribution before taxes and transfers. It affects negatively the level of social protection expenditure among high-, low- and middle-income countries. While this result may seem counterintuitive, its interpretation can be found in the political economy theories of budget allocations to social protection. Schwabish, Smeeding and Osberg (2003) found that while inequality between the middle class and the poor has a small positive impact on the level of social spending, inequality between the rich and the middle class has a large and negative impact on social spending. As inequality between the rich and middle and lower classes increases, the rich may find it easier to opt out of public programmes and to buy substitutes for social insurance in the private market. Among the demographic control variables, the share of urban population contributes positively to the level of expenditure in social protection in low- and middle-income countries.

We tested whether there is a synergy between the quality of institutions and people's preferences (see Table 2). The measures for quality of institutions and people's preferences are transformed into binary variables in order to uncover potential synergy effects.<sup>26</sup>

26. The choice is driven by the fact that we are interested to understand the interaction between the different levels (high and low) of performance of institutions and intensity of people's preferences. The transformation of the variables into binary variables does not result into a substantial loss of information as both functioning of the government and people's preference are discrete variables.

The variable *functioning of the government* takes the value  $QI=0$  (low functioning) for values from zero to six, and  $QI=1$  (high functioning) for values from seven to twelve. Similarly, the variable *people's preference* has been recoded with  $PP=0$  for values from 1 to 6.4, and  $PP=1$  for values higher than 6.4. It is expected that the interaction of better functioning institutions and stronger preferences of the society for government involvement in the provision of public services is associated with higher levels of social protection expenditure.

The results show that a high level of functioning of the government increases significantly the intensity of social protection by 3.3 percentage points for all 80 countries selected. In addition, the simultaneous occurrence of high levels for both variables significantly increases the level of social protection expenditure over GDP by 3.6 percentage points on average for all countries and by 5.4 percentage points in low- and middle-income countries. Hence, for the full sample, we cannot conclude that there is complementarity in the sense of super-modularity between the two variables, as the simultaneous presence of people's preferences and quality of institutions is lower than the sum of the individual presence of each, compared to the reference scenario of the absence of both (Milgrom and Roberts, 1990). However, for low- and middle-income countries, there is, at least pointwise, an indication of super-modularity, although in statistical terms the simultaneous presence of both is not strictly greater than the sum of the individual effects (the confidence intervals of 5.444 and of  $1.596+2.649$  do intersect).

We have conducted a number of robustness checks. In Table 3, we report the results obtained using two definitions of social protection expenditure (with and without health expenditure) and four alternative measures of the quality of institutions in addition to functioning of the government (government effectiveness, the rule of law, an index of property rights and a measure of stability of institutions). Quality of institutions is significant and positive in six of the ten model specifications and for three out of the five measures of the quality of institutions. The variable that captures people's preferences is always significant and positive in all model specifications for low- and middle-income countries. The maturity of the systems and the level of government revenues are also highly significant throughout the different models, confirming the relevance of long-established social protection systems and the availability of fiscal space. The Gini index continues to have negative and significant coefficients in all model specifications. The poverty rate is negative and significant in two of the eight model specifications. While the Gini index continues to have negative and significant coefficients, the poverty gap continues to have a positive and significant marginal effect on social protection expenditure in five of the eight model specifications.

Similar but weaker results are presented in Table 4 for the low- and middle-income countries. The signs of the marginal effects remain the same with the exception of model 7, but many coefficients are no longer significant, partly

## The effect of institutional factors and people's preferences on expenditure for social protection

**Table 2.** *Quality of institutions, people's preferences and SP expenditure: Categorical analysis*

Dependent variable	Total SP expenditure (as % of GDP)	
	Low- and middle-income countries	High-, low- and middle-income countries
	OLS	
	(1)	(2)
Maturity of SP systems	0.027 (0.023)	0.088*** (0.028)
Government revenue (% of GDP)	0.291*** (0.086)	0.135** (0.057)
High share of total natural resource rents	-0.883 (1.303)	-2.744** (1.091)
Log per capita GDP, PPP (2005 constant intl. \$)	-0.937 (1.355)	1.553 (1.061)
Poverty rate (1.90\$/day) (80 countries)	-0.216* (0.126)	-0.237 (0.157)
Poverty gap (1.90\$/day) (80 countries)	0.462 (0.298)	0.488 (0.313)
Gini index	-0.072 (0.084)	-0.212*** (0.066)
Age dependency ratio (total)	-0.031 (0.050)	0.072 (0.049)
Urban population (% of total)	0.021 (0.040)	0.009 (0.042)
Population, total (in millions)	-0.000 (0.003)	0.002 (0.003)
<i>Baseline: 0.Functioning of Govt.#0.People's preferences</i>		
0.Functioning of Govt.#1.People's preferences	1.596 (1.673)	1.749 (1.491)
1.Functioning of Govt.#0.People's preferences	2.649 (1.612)	3.274* (1.841)
1.Functioning of Govt.#1.People's preferences	5.444** (2.156)	3.586* (1.957)
Constant	12.315 (12.298)	-6.955 (9.898)
Observations	52	80
R-squared	0.735	0.782

Note: Robust standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Models presented in the table use cross-sectional data with dependent variable measured in 2011 and explanatory variables in 2009. The variable that measures the functioning of the government has been divided into two levels: "low or 0" (for values from 0 to 6) and "high or 1" (for values from 7 to 12). The proxy for people's preferences has also been divided in two categories: "low or 0" (for values from 1 to 6.4) and "high or 1" (for values from 6.4 to 10) values. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents".

Source: Authors, based on the literature review.

Table 3. Different compositions of SP expenditure and quality of institutions

Dependent variable	Total SP Expenditure (as % of GDP)				
	(1)	(2)	(3)	(4)	(5)
	OLS				
Functioning of government	0.533** (0.205)				
Government effectiveness – Estimate		1.495 (0.903)			
Rule of law – Estimate			1.806** (0.747)		
Property rights				0.050 (0.032)	
Polity2 (Revised Combined Polity Score)					0.228** (0.103)
People's preferences – (Govt. provision of public services)	0.866 (0.557)	0.856 (0.557)	0.893 (0.544)	0.818 (0.557)	0.848 (0.561)
Maturity of SP systems	0.082** (0.025)	0.101*** (0.026)	0.100*** (0.026)	0.101*** (0.027)	0.093*** (0.026)
Government revenue (% of GDP)	0.137** (0.057)	0.134** (0.058)	0.118** (0.057)	0.129** (0.059)	0.137** (0.056)
High share of total natural resource rents	-2.370** (0.966)	-3.124*** (1.078)	-2.919*** (1.040)	-3.238*** (1.063)	-2.291** (1.006)
Log per capita GDP, PPP (2005 constant intl. \$)	1.101 (1.139)	1.354 (1.340)	1.099 (1.213)	1.577 (1.218)	2.114** (1.050)
Poverty rate (1.90\$/day) (80 countries)	-0.315** (0.156)	-0.231 (0.166)	-0.259 (0.158)	-0.224 (0.155)	-0.186 (0.145)
Poverty gap (1.90\$/day) (80 countries)	0.621** (0.289)	0.503 (0.303)	0.525* (0.281)	0.503* (0.287)	0.426 (0.280)
Gini index	-0.200*** (0.067)	-0.177*** (0.066)	-0.158** (0.067)	-0.177** (0.067)	-0.211*** (0.066)
Age dependency ratio (total)	0.060 (0.048)	0.068 (0.054)	0.058 (0.053)	0.054 (0.057)	0.066 (0.047)
Urban population (% of total)	0.001 (0.036)	-0.001 (0.034)	-0.006 (0.032)	-0.006 (0.036)	0.014 (0.037)
Population, total (in millions)	0.002 (0.003)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.002 (0.003)
Constant	-8.785 (11.505)	-13.514 (12.365)	-11.394 (11.548)	-12.458 (11.967)	-17.383 (11.500)

**Table 3. Different compositions of SP expenditure and quality of institutions - Continued**

Total SP Expenditure (as % of GDP)				
High-, low- and middle-income countries				
OLS				
Dependent variable	(1)	(2)	(3)	(4) (5)
Observations	80	80	80	80 79
R-squared	0.789	0.779	0.786	0.780 0.796
Total SP Expenditure (excl. Health expenditure) (as % of GDP)				
High-, low- and middle-income countries				
OLS				
Dependent variable	(6)	(7)	(8)	(9) (10)
Functioning of government	0.347** (0.160)			
Government effectiveness – Estimate		0.808 (0.717)		
Rule of law – Estimate			0.999* (0.569)	
Property rights			0.029 (0.023)	
Polity2 (Revised Combined Polity Score)				0.171** (0.082)
People's preferences – (Govt. provision of public services)	0.973** (0.458)	0.952** (0.448)	0.974** (0.446)	0.936** (0.452) 0.929** (0.456)
Maturity of SP systems	0.060** (0.019)	0.073*** (0.020)	0.072*** (0.020)	0.072*** (0.020) 0.061*** (0.021)
Government revenue (% of GDP)	0.117** (0.045)	0.114** (0.046)	0.105** (0.045)	0.112** (0.046) 0.126*** (0.046)
High share of total natural resource rents	-1.826** (0.736)	-2.369*** (0.802)	-2.249*** (0.790)	-2.414*** (0.795) -1.740** (0.789)



Table 3. Different compositions of SP expenditure and quality of institutions - Continued

Dependent variable	Total SP Expenditure (excl. Health expenditure) (as % of GDP)				
	High-, low- and middle-income countries				
	(6)	(7)	(8)	(9)	(10)
	OLS				
Log per capita GDP, PPP (2005 constant intl. \$)	0.543 (0.829)	0.845 (1.002)	0.689 (0.916)	0.918 (0.903)	1.118 (0.745)
Poverty rate (1.90\$/day) (80 countries)	-0.262** (0.122)	-0.199 (0.136)	-0.216 (0.129)	-0.199 (0.127)	-0.203* (0.115)
Poverty gap (1.90\$/day) (80 countries)	0.457** (0.213)	0.365 (0.239)	0.379* (0.222)	0.371 (0.225)	0.375* (0.209)
Gini index	-0.158*** (0.053)	-0.144*** (0.054)	-0.133** (0.054)	-0.143*** (0.054)	-0.170*** (0.053)
Age dependency ratio (total)	0.042 (0.041)	0.048 (0.043)	0.042 (0.042)	0.039 (0.045)	0.048 (0.039)
Urban population (% of total)	0.003 (0.028)	0.003 (0.027)	-0.000 (0.026)	-0.000 (0.028)	0.011 (0.029)
Population, total (in millions)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)	0.002 (0.002)	0.002 (0.002)
Constant	-6.003 (8.129)	-9.856 (9.090)	-8.596 (8.566)	-8.910 (8.776)	-10.370 (7.908)
Observations	80	80	80	80	79
R-squared	0.773	0.764	0.767	0.764	0.775

Note: Robust standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Models presented in the table use cross-sectional data with dependent variable measured in 2011 and the explanatory variables in 2009. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents". Polity2 (used in models 5 and 10) is only available for 79 observations.

Source: Authors, based on the literature review.

because of the lower number of degrees of freedom. Table 5 summarizes additional tests conducted to assess the robustness of the analysis using two alternative measures of social protection expenditure (social protection expenditure as a percentage of total government expenditure, and the log of social protection expenditure per capita). The estimates confirm the positive signs and significance of the variables for the functioning of the government and people's preferences, irrespective of the different definitions of the dependent variable; with the exceptions of model 1 and model 2, where the proxy for the quality of institution is not significant. To conclude, the results presented in Tables 3 and 4 are robust to changes in definitions of the dependent variable and to different measures of the quality of institutions.

A further extension of the baseline model controls for colonial and legal origins. The countries that have never been colonized show positive and significant coefficients. The hypothesis advanced by Bailey (2004) that countries with French colonial origins tend to be more generous in terms of social protection compared to those that were former British colonies is not supported by the data, models (1) and (2) in Table 6. The results are robust to the inclusion or not of health expenditure in social protection expenditure for the 52 low- and middle-income countries.

If legal origins are controlled for and the English Common Law system is used as a baseline, the French legal system and the socialist/communist laws do not seem to influence the level of social protection expenditure. A significant and positive additional level of social protection expenditure can be attributed to legal systems based on the Scandinavian code (using 80 countries) and using social protection expenditure excluding health as the dependent variable in models (3) and (4). The finding may reflect the relative generosity of social democratic welfare states (Esping-Andersen, 1990).<sup>27</sup> The estimates for the group of low- and middle-income countries show positive and weakly significant additional effects for countries that have inherited the French or socialist legal codes in models (5) and (6). Alternatively, controls for government political orientation have also provided robust estimates for both main independent variables.<sup>28</sup> Additional robustness checks have been conducted controlling for ethnic and linguistic

27. In particular, three ideal types of regimes or welfare states are advanced by Esping Andersen: the Social Democratic (for example Sweden), the Corporatist (such as Germany) and the Liberal (such as the United States). The Social Democratic regime is characterized by a high level of benefits and a high guaranteed minimum provided to the population, and it is mainly funded on general taxation. The Corporatist regime shows instead relative high level of benefits, which are mainly funded through contributions. Finally, the Liberal regime shows levels of benefits reduced to a minimum funded by general taxation (Wildeboer Schut, Vrooman and de Beer, 2001).

28. Tables are not included in the article, but are available from the authors upon request.

Table 4. Different compositions of SP expenditure and quality of institutions (LICs and MICs)

Dependent variable	Total SP Expenditure (as % of GDP)				
	(1)	(2)	(3)	(4)	(5)
Functioning of government	0.408** (0.196)				
Government effectiveness – Estimate	0.223 (1.184)				
Rule of law – Estimate		1.190 (1.027)			
Property rights				0.047 (0.038)	
Polity2 (Revised Combined Polity Score)					0.139 (0.099)
People's preferences – (Govt. provision of public services)	1.492** (0.663)	1.294* (0.720)	1.254* (0.695)	1.197* (0.684)	1.522** (0.694)
Maturity of SP systems	0.041* (0.024)	0.053** (0.026)	0.053* (0.026)	0.049* (0.026)	0.057* (0.029)
Government revenue (% of GDP)	0.249*** (0.087)	0.254** (0.095)	0.242** (0.092)	0.261*** (0.094)	0.221** (0.100)
High share of total natural resource rents	-1.384 (1.304)	-2.191 (1.353)	-1.825 (1.411)	-1.978 (1.336)	-1.428 (1.433)
Log per capita GDP, PPP (2005 constant intl. \$)	-0.016 (1.284)	0.549 (1.362)	0.266 (1.331)	0.332 (1.343)	0.248 (1.191)
Poverty rate (1.90\$/day) (80 countries)	-0.190 (0.124)	-0.090 (0.117)	-0.124 (0.118)	-0.117 (0.111)	-0.116 (0.116)
Poverty gap (1.90\$/day) (80 countries)	0.414 (0.260)	0.258 (0.254)	0.317 (0.243)	0.342 (0.236)	0.289 (0.252)
Gini index	-0.060 (0.080)	-0.035 (0.088)	-0.043 (0.083)	-0.055 (0.080)	-0.048 (0.081)
Age dependency ratio (total)	-0.036 (0.057)	-0.031 (0.060)	-0.034 (0.057)	-0.042 (0.058)	-0.039 (0.059)
Urban population (% of total)	0.001 (0.039)	0.005 (0.040)	0.007 (0.036)	0.005 (0.038)	0.009 (0.039)
Population, total (in millions)	0.000 (0.002)	-0.000 (0.002)	-0.001 (0.002)	-0.000 (0.002)	-0.000 (0.002)
Constant	-4.148 (11.398)	-8.299 (12.321)	-6.957 (12.022)	-5.635 (11.689)	-6.288 (11.301)

**Table 4. Different compositions of SP expenditure and quality of institutions (LICs and MICs) - Continued**

Total SP Expenditure (as % of GDP)					
Low- and middle-income countries					
OLS					
Dependent variable	(1)	(2)	(3)	(4)	(5)
Observations	52	52	52	52	51
R-squared	0.721	0.701	0.710	0.711	0.717
Total SP Expenditure (excl. Health expenditure) (as % of GDP)					
Low- and middle-income countries					
OLS					
Dependent variable	(6)	(7)	(8)	(9)	(10)
Functioning of government	0.236 (0.153)				
Government effectiveness – Estimate		-0.157 (0.944)			
Rule of law – Estimate			0.746 (0.813)		
Property rights				0.028 (0.029)	
Polity2 (Revised Combined Polity Score)					0.091 (0.078)
People's preferences – (Govt. provision of public services)	1.372** (0.478)	1.269** (0.518)	1.231** (0.507)	1.199** (0.506)	1.354** (0.504)
Maturity of SP systems	0.038** (0.018)	0.045** (0.019)	0.044** (0.019)	0.042** (0.019)	0.042* (0.024)
Government revenue (% of GDP)	0.149** (0.066)	0.150** (0.071)	0.144** (0.068)	0.156** (0.070)	0.145* (0.080)
High share of total natural resource rents	-1.038 (0.986)	-1.576 (1.024)	-1.273 (1.078)	-1.378 (1.013)	-1.049 (1.102)

**Table 4. Different compositions of SP expenditure and quality of institutions (LICs and MICs) - Continued**

Dependent variable	Total SP Expenditure (excl. Health expenditure) (as % of GDP)				
	Low- and middle-income countries				
	OLS				
	(6)	(7)	(8)	(9)	(10)
Log per capita GDP, PPP (2005 constant intl. \$)	-0.005 (0.950)	0.419 (0.972)	0.142 (0.956)	0.193 (0.968)	0.166 (0.879)
Poverty rate (1.90\$/day) (80 countries)	-0.154 (0.102)	-0.087 (0.103)	-0.117 (0.103)	-0.112 (0.097)	-0.121 (0.095)
Poverty gap (1.90\$/day) (80 countries)	0.288 (0.206)	0.176 (0.213)	0.235 (0.203)	0.247 (0.198)	0.235 (0.199)
Gini index	-0.059 (0.064)	-0.038 (0.071)	-0.050 (0.067)	-0.056 (0.065)	-0.056 (0.065)
Age dependency ratio (total)	-0.040 (0.043)	-0.038 (0.045)	-0.039 (0.043)	-0.044 (0.043)	-0.038 (0.045)
Urban population (% of total)	0.008 (0.030)	0.010 (0.031)	0.011 (0.028)	0.010 (0.029)	0.012 (0.030)
Population, total (in millions)	0.000 (0.002)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.002)	0.000 (0.002)
Constant	-3.265 (8.757)	-6.021 (9.132)	-4.814 (8.887)	-4.090 (8.787)	-4.457 (8.446)
Observations	52	52	52	52	51
R-squared	0.750	0.740	0.745	0.746	0.747

Note: Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Models presented in the table use cross-sectional data with the dependent variable measured in 2011 and the explanatory variables in 2009. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents". Polity2 (used in models 5 and 10) is only available for 51 observations.

Source: Authors, based on the literature review.

## The effect of institutional factors and people's preferences on expenditure for social protection

**Table 5.** Different measures of SP expenditure (including health expenditure)

	Total SP Exp. (as % of General Govt. total Exp.)	Log. total SP Public Exp. per capita	Total SP Exp. (as % of General Govt. total Exp.)	Log. total SP Public Exp. per capita
	Low- and middle-income countries		High-, low- and middle-income countries	
	OLS			
Dependent variable	(1)	(2)	(3)	(4)
Functioning of government	0.008 (0.007)	0.034 (0.026)	0.012** (0.006)	0.051** (0.025)
People's preferences – (Govt. provision of public services)	0.051** (0.019)	0.244*** (0.088)	0.035** (0.013)	0.183*** (0.067)
Maturity of SP systems	0.000 (0.001)	0.006** (0.003)	0.001** (0.001)	0.009*** (0.003)
Government revenue (% of GDP)		0.020** (0.010)		0.009* (0.005)
High share of total natural resource rents	-0.052 (0.039)	-0.142 (0.170)	-0.050* (0.027)	-0.159 (0.122)
Log per capita GDP, PPP (2005 constant intl. \$)	0.018 (0.031)	1.031*** (0.132)	0.013 (0.026)	1.019*** (0.121)
Poverty rate (1.90\$/day) (80 countries)	-0.003 (0.004)	-0.029* (0.015)	-0.007 (0.004)	-0.048** (0.019)
Poverty gap (1.90\$/day) (80 countries)	0.008 (0.007)	0.069** (0.034)	0.012 (0.008)	0.096*** (0.035)
Gini index	0.001 (0.002)	-0.000 (0.008)	-0.001 (0.001)	-0.010 (0.007)
Age dependency ratio (total)	-0.002 (0.002)	-0.009 (0.006)	0.000 (0.001)	-0.000 (0.005)
Urban population (% of total)	0.000 (0.001)	-0.002 (0.004)	0.000 (0.001)	-0.001 (0.003)
Population, total (in millions)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Constant	-0.133 (0.302)	-4.347*** (1.334)	-0.094 (0.262)	-3.905*** (1.199)
Observations	52	52	80	80
R-squared	0.538	0.931	0.655	0.948

Note: Robust standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Models presented in the table use cross-sectional data with the dependent variable measured in 2011 and the explanatory in 2009. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents".

Source: Authors, based on the literature review.

fractionalization and level of democracy. The results are in line with the initial estimates and do not change our conclusions.

Finally, Table 7 reports the difference between short-run and long-run effects. We construct panel data for 52 and 80 countries and 5 years (2007–2011). In columns 1, 2, 5 and 6 we report the pooled OLS and the 2SLS estimates with

Table 6. Different compositions of SP expenditure: controls for colonial and legal origins

Dependent variable	OLS					
	(1)	(2)	(3)	(4)	(5)	(6)
Functioning of government	0.396** (0.170)	0.206 (0.138)	0.444** (0.216)	0.293* (0.162)	0.569*** (0.206)	0.372** (0.164)
People's preferences – (Govt. provision of public services)	1.447** (0.711)	1.452** (0.540)	1.079* (0.548)	1.173** (0.451)	1.295* (0.670)	1.242** (0.474)
Maturity of SP systems	0.024 (0.018)	0.026 (0.016)	0.091*** (0.028)	0.066*** (0.020)	0.024 (0.024)	0.025 (0.019)
Government revenue (% of GDP)	0.379** (0.077)	0.252*** (0.060)	0.117* (0.063)	0.091* (0.048)	0.279*** (0.078)	0.167** (0.063)
High share of total natural resource rents	0.321 (1.352)	0.107 (0.980)	-2.786** (1.189)	-2.175** (0.955)	-0.192 (1.571)	-0.160 (1.149)
Log per capita GDP, PPP (2005 constant intl. \$)	0.041 (1.027)	0.030 (0.779)	0.928 (1.205)	0.490 (0.881)	0.360 (1.283)	0.264 (0.969)
Poverty rate (1.90\$/day)	-0.072 (0.122)	-0.073 (0.104)	-0.287* (0.153)	-0.238* (0.119)	-0.174 (0.142)	-0.152 (0.118)
Poverty gap (1.90\$/day)	0.181 (0.224)	0.155 (0.186)	0.569* (0.288)	0.426** (0.212)	0.395 (0.289)	0.302 (0.233)
Gini index	-0.017 (0.073)	-0.045 (0.058)	-0.159** (0.068)	-0.117** (0.052)	-0.041 (0.080)	-0.046 (0.061)
Age dependency ratio (total)	0.019 (0.064)	-0.011 (0.049)	0.032 (0.062)	0.013 (0.052)	-0.002 (0.078)	-0.023 (0.060)
Urban population (% of total)	0.007 (0.038)	0.001 (0.030)	-0.007 (0.038)	-0.008 (0.029)	-0.003 (0.043)	-0.001 (0.033)
Population, total (in millions)	0.001 (0.002)	0.000 (0.002)	0.001 (0.003)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)
Baseline: Former British colonies						
Never colonized	4.437*** (1.300)	2.914** (1.083)				

(Continued)

**Table 6.** Different compositions of SP expenditure: controls for colonial and legal origins - Continued

Dependent variable	Low- and middle-income countries		High-, low- and middle-income countries		Low- and middle-income countries	
	(1)	(2)	(3)	(4)	(5)	(6)
Former French colonies	-1.314 (1.617)	-1.230 (1.364)				
Other colonies	2.878 (2.041)	2.933* (1.578)				
<i>Legal origins. Baseline: English Common Law</i>			-0.250	0.331	1.917	1.852*
French Commercial Code			(1.218) -0.442	(0.994) 0.034	(1.338) 3.537*	(1.096) 2.714*
Socialist/Communist Laws			(1.658) 0.669	(1.399) 0.622	(1.902)	(1.453)
German Commercial Code			(2.544) 4.919**	(2.300) 5.236**		
Scandinavian Commercial Code			(2.317)	(2.040)		
Constant	-15.330 (10.559)	-10.292 (8.209)	-7.295 (12.532)	-5.644 (8.974)	-12.121 (13.712)	-8.520 (10.608)
Observations	52	52	80	80	52	52
R-squared	0.796	0.813	0.801	0.792	0.743	0.771

Note: Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Models presented in the table use cross-sectional data with the dependent variable measured in 2011 and the explanatory variables in 2009. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The out-of points for the levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents".

Source: Authors, based on the literature review.



The effect of institutional factors and people's preferences on expenditure for social protection

Table 7. Short-run and long-run effects

Dependent variable	Total SP Expenditure (% of GDP)							
	Low- and middle-income countries				High-, low- and middle-income countries			
	Pooled OLS	Pooled 2SLS	BE IV	FE IV	Pooled OLS	Pooled 2SLS	BE IV	FE IV
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Functioning of government	0.345** (0.132)	1.299** (0.600)	1.774 (1.272)	-1.026 (1.106)	0.412*** (0.126)	0.420 (0.450)	0.629 (0.751)	-0.738 (1.282)
Maturity of SP systems	0.049** (0.020)	0.021 (0.025)	0.004 (0.054)	-0.433* (0.242)	0.099*** (0.018)	0.099*** (0.027)	0.089** (0.039)	-0.141 (0.132)
Government revenue (% of GDP)	0.325*** (0.060)	0.352*** (0.062)	0.432*** (0.130)	0.066*** (0.021)	0.159*** (0.031)	0.159*** (0.032)	0.182*** (0.058)	0.005 (0.025)
High share of total natural resource rents	-0.255 (0.811)	0.092 (1.499)	1.346 (3.268)	-0.187 (0.539)	0.659 (0.683)	-2.493** (1.179)	-2.229 (2.023)	-0.175 (0.517)
Log per capita GDP, PPP (2005 constant international \$)	0.001 (0.001)	-1.206 (1.112)	-1.909 (2.216)	11.715** (5.382)	0.001 (0.001)	0.639 (1.352)	-0.129 (2.149)	8.302** (3.988)
Poverty rate (1.90\$/day)	-1.552* (0.907)	-0.244** (0.118)	-0.433 (0.273)	0.090 (0.062)	-2.508*** (0.717)	-0.229** (0.107)	-0.365* (0.202)	0.074 (0.054)
Poverty gap (1.90\$/day)	-0.138 (0.089)	0.479* (0.246)	0.886* (0.520)	-0.085 (0.060)	-0.228*** (0.087)	0.455** (0.198)	0.763** (0.379)	-0.053 (0.052)
Gini index	0.305 (0.189)	-0.176** (0.079)	-0.236 (0.156)	0.029 (0.121)	0.453** (0.179)	-0.184*** (0.040)	-0.202*** (0.069)	0.123 (0.106)
Age dependency ratio (% of working-age population)	-0.093* (0.049)	-0.034 (0.036)	-0.012 (0.086)	-0.256 (0.279)	-0.184*** (0.038)	0.035 (0.039)	0.032 (0.069)	0.020 (0.197)
Urban population (% of total)	-0.022 (0.029)	0.052** (0.026)	0.054 (0.049)	-0.181 (0.287)	0.036 (0.026)	0.023 (0.019)	0.026 (0.035)	-0.144 (0.280)
Population, total (in millions)	0.046** (0.020)	0.002 (0.003)	0.004 (0.004)	0.024 (0.038)	0.023 (0.019)	0.001 (0.001)	0.002 (0.003)	0.016 (0.037)
Constant	3.677 (7.426)	10.550 (9.274)	13.631 (19.400)	-42.344 (52.615)	-0.610 (6.337)	-0.439 (11.951)	5.805 (18.848)	-46.560 (46.079)

(Continued)

Table 7. Short-run and long-run effects - Continued

	Total SP Expenditure (% of GDP)							
	Low- and middle-income countries				High-, low- and middle-income countries			
	Pooled OLS	Pooled 2SLS	BE IV	FE IV	Pooled OLS	Pooled 2SLS	BE IV	FE IV
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Observations	156	156	52	156	240	240	80	240
R-squared	0.640	0.534			0.750	0.750		
<b>First Stage estimates and IV statistics</b>								
Trade freedom		0.065*** (0.021)	0.017*** (0.007)	0.016 (0.011)		0.076*** (0.023)	0.098** (0.038)	0.015 (0.010)
Over-identifying restrictions			0.00				0.00	0.00

Note: Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Models presented in the table use panel data with the dependent variable measured in 2011, 2010 and 2009 and the explanatory variables are lagged by two years. The variable that measures people's preferences is excluded in model specifications as we observe the variable only once during the period 2007–2011. BE and FE stand for Between and Fixed-effects estimates respectively. The variable that measures the rents from natural resources has been divided into two levels: "low or 0" (for values from 0 to 3.68) and "high or 1" (for values higher than 3.68). The cut-off points for the two levels have been selected by looking at the frequency and distribution of the values of the variables in the selected countries. The reference group is "low share of total natural resource rents". The reference group is "low share of total natural resource rents". The test conducted indicates the appropriateness of the fixed effect model compared to the random effect model. Trade freedom is the instrument for functioning of the government. F statistics are used to test the weak identification. If the F-statistic is higher than 10 weak identification is not a matter of concern. For the BE effect models, we use the Sargan–Hansen that tests the validity of the over-identifying restrictions.

Source: Authors, based on the literature review.

panel data. The variable that captures people's preferences is no longer included because it is only observed in one year during the period 2007–2011. The variable that measures the functioning of the government is positive and highly significant in the model specification 2 for low- and middle-income countries, while it is not significant in model specification 6 where estimates are conducted on all 80 countries. An increase in the functioning of the government index by one unit is associated with a change in the level of social protection expenditure of 1.3 per cent of GDP for the 52 low- and middle-income countries using panel data (see columns (2) of Table 7). With trade freedom as the instrumental variable, the functioning of government is positive and significant using panel data in model 2 for the 52 low- and middle-income countries.

We estimate the model using only the between variation of the data in columns (3) and (7) and only the within variation in columns (4) and (8). The former captures the long-run effects, the latter the short-run effects using trade freedom as instrument for the variable functioning of the government. The strong persistence in social protection expenditure explains the lack of significant explanatory variables in the fixed effects model. Given that the quality of institutions does not vary much over time, a change in the functioning of the government is not significantly associated with a change in the total level of expenditure in social protection in the short term. Only the maturity of social protection systems is significantly and positively associated with an increase in the total level of social protection expenditure as a percentage of the GDP in the estimates for all 80 countries, while it is negative and significant in the fixed effects model for low- and middle-income countries. In the short and long term, the government revenue is positive and highly significant suggesting that fiscal capacity is important in explaining the level of expenditure in social protection. The level of expenditure in social protection as a proportion of GDP is also related to the level of income. A one per cent increase in per capita GDP increases the level of expenditure in social protection by 8.3 percentage points and 11.7 percentage points in all 80 countries and in the low- and middle-income countries, respectively.

Additional robustness checks have been conducted using long-differences and a generalized methods of moments system estimator (GMM-SYS) for a dynamic model of panel data. What GMM-SYS does, in the absence of good outside instruments, is to use appropriately lagged levels of the exogenous variables as instruments for the first difference specification of the equation and appropriately lagged first differences of the exogenous variables as instruments for the level specification of the equation (Arellano and Bover, 1995). Specifically, the tests conducted show a high level of persistence of social protection expenditure while the proxies for quality of institutions are not significant. This could be due to the low level of variation across time of the

variables capturing the level of functioning of institutions or to the overall limited number of observations. Therefore, it would be important to conduct the same analyses once additional data become available.

## Conclusions

This article expands on the existing literature on the determinants of social protection by examining whether and to what extent the provision of social protection depends on the quality of institutions and people's preferences using panel data on 80 countries (52 low- and middle-income countries and 28 high income countries).

The results show that both factors have an impact for the group of low- and middle-income countries, but also for all the countries in our sample. The estimates are robust to the different definitions of the dependent variables and different measures for the quality of institutions. Data limitations to a certain extent affect the analysis conducted and call for additional research to be conducted once additional information can be obtained for a larger number of countries and for more years and for different kinds of social protection programmes.

These results have implications regarding social protection policies. First, our results suggest that it would be useful to continue enhancing the capacity of institutions and public authorities, as they are the backbone of the delivery of social protection programmes (Coll-Black, Monchuk and Stanford, 2018). This should not only be limited to the provision of technical support, for example to administrators who are expected to execute the social protection policies and to initiate reforms, but also to improve on existing legal frameworks, accountability, transparency, effectiveness, efficiency, coordination, equity, inclusiveness, participation and consensus at central and decentralized level (Vinci and Roelen, 2020). Furthermore, those countries that have established social protection programmes should try to maintain and expand these, as our findings show that the maturity of social protection systems may be associated with higher levels of expenditure on social protection programmes. Some tools suggested by the ILO to guide this path are social budgeting, social protection expenditure and performance reviews (SPERs), or the Social Protection System Review (SPSR) tool suggested by the OECD to assist countries in improving their quantitative knowledge base on social protection and to extend and reform social protection systems.

The second area of focus is to ensure that people's preferences regarding the involvement of the government in the provision of public services are represented. Therefore, advocating for mechanisms and systems allowing people's preferences to be heard is crucial. This could imply, for example, a more

effective role played by international organizations, academic institutions and think-tanks in providing technical assistance to countries to ensure that well-functioning systems are in place that are able to reflect people's preferences and influence social policies. At the country level, community participation in the planning and budgeting process should be promoted to increase the likelihood that people's preferences are reflected in this process and through which resources for social protection programmes are allocated.

The best source of finance for the social contract is domestic. Rich countries that support the least developed countries should encourage investment in institutions and advocate for people's preferences to be collected and reflected in the choice of social protection programmes. While supporting these two main areas might be beneficial to boost the level of expenditure in social protection programmes, the specific set of strategies and policy options to use will mainly depend on the specific national contexts.

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## A. Appendix

**Table 1.** *List of countries*

North Africa & the Middle East	Eastern Europe and post-Soviet Union	Western Europe and North America	Latin America
Algeria	Albania	Australia*	Argentina*
Cyprus*	Armenia	Canada*	Brazil
Egypt	Azerbaijan	Finland*	Chile*
Iran	Belarus	Germany*	Colombia
Israel*	Bosnia and Herzegovina	Italy*	Dominican Republic
Jordan	Bulgaria	Netherlands*	Guatemala
Kuwait*	Croatia*	New Zealand*	Mexico
Morocco	Czechia*	Norway*	Peru
Qatar*	Estonia*	Spain*	Trinidad and Tobago
Tunisia	Georgia	Sweden*	Uruguay
Turkey	Hungary*	Switzerland*	Bolivarian Rep. of Venezuela
Yemen	Kazakhstan	United Kingdom*	
	Kyrgyzstan	United States*	
<b>South-East Asia</b>	Latvia		
Bangladesh	Lithuania	<b>Sub-Saharan Africa</b>	
China	Macedonia	Burkina Faso	
India	Moldova	Ethiopia	
Indonesia	Poland*	Ghana	
Japan*	Romania	Mali	
Korea, Rep. of*	Russia	Nigeria	
Malaysia	Serbia	South Africa	
Pakistan	Slovakia*	United Rep. of Tanzania	
Philippines	Slovenia*	Uganda	
Thailand	Ukraine	Zambia	
Vietnam			

*Note:* Table listing the 80 selected countries, 28 of which are high income countries (\*) and 52 are low- and middle-income countries, which are grouped in six geographical zones.

*Source:* World Bank (2012).

## The effect of institutional factors and people's preferences on expenditure for social protection

Table 2. Descriptive statistics

	Year	Mean	Std. Dev.	Min.	Max.	Obs.
<b>Social protection</b>						
SP Public Exp. (incl. health exp.), % of GDP	2011	13.20	7.66	1.68	29.22	80
SP Public Social Security Exp. (excl. health exp.), % of GDP	2011	9.31	5.95	0.20	22.00	80
<b>Quality of institutions</b>						
Functioning of Government (from 0 to 12)	2009	7.19	3.46	1.00	12.00	80
Government Effectiveness - Estimate (from 0 to 5)	2009	2.75	0.89	1.28	4.73	80
Rule of Law - Estimate (from 0 to 5)	2009	2.65	0.93	0.91	4.47	80
Property Rights (from 0 to 100)	2009	48.88	23.89	0.00	95.00	80
Polity2 (Revised Combined Polity Score)	2009	5.34	5.85	-10	10	79
<b>People's preferences</b>						
Government to provide more public services (from 1 to 10)	2009	6.37	0.95	4.70	8.21	80
<b>Economic</b>						
GDP per capita, PPP (2005 constant international \$)	2009	14,692.24	13,191.62	866.37	65,894	80
Log GDP per capita, PPP (2005 constant international \$)	2009	9.13	1.07	6.76	11.10	80
Government Revenue, % of GDP	2009	25.58	10.53	9.20	57.33	80
Total natural resources rents, % of GDP	2009	8.33	10.95	0.03	43.83	80
Gini Household Gross Income (from 0 to 100%)	2009	37.56	8.00	23.72	63.14	80
Poverty rate at \$1.90 a day PPP (2011), % of population <sup>+</sup>	2009	8.19	15.28	0	60.46	80
Poverty gap at \$1.90 a day PPP (2011), % of poverty line <sup>+</sup>	2009	2.69	5.69	0	30.1	80
<b>Demographic</b>						
Total age dependency ratio, % of working-age population	2009	53.49	16.43	18.67	105.97	80
Urban population, % of total population	2009	62.30	21.08	13.18	98.41	80
Population, total (in millions)	2009	72.73	200.14	1.09	1331.26	80
<b>Legal and historical</b>						
Maturity of SP Systems (in number of years)	2009	63.80	26.00	7.00	120.00	80
Colonial origin	2009					
1 British (n=17)		0.21	0.41	0	1	80
2 French (n=6)		0.07	0.26	0	1	80
3 Never colonized (n=45)		0.56	0.49	0	1	80

(Continued)

**Table 2.** *Descriptive statistics* - Continued

	Year	Mean	Std. Dev.	Min.	Max.	Obs.
4 Other Colonies (Dutch, Portuguese, Spanish, US) (n=12)		0.15	0.36	0	1	80
Legal origin	2009					
5 English Common Law (n=19)		2.24	0.43	0	1	80
6 French Commercial Law (n=29)		0.36	0.48	0	1	80
7 German Commercial Code (n=4)		0.05	0.22	0	1	80
8 Scandinavian Commercial Code (n=3)		0.04	0.20	0	1	80
9 Socialist/Communist Law (n=25)		0.31	0.47	0	1	80
<b>Instruments</b>						
Index for trade freedom (from 0 to 100)	2009	79.06	9.19	50.20	90	80

*Note:* Descriptive statistics related to the 80 selected countries. Social Protection variables are related to the year 2011. Institutions, People's preferences, Economic, Poverty, Demographic, Geographic and Instrument are related to the year 2009. (\*) Poverty rate and Poverty Gap calculated using World Bank PovCal data; values set to zero for the 28 high-income countries.

*Source:* Authors', based on the literature review.

## The effect of institutional factors and people's preferences on expenditure for social protection

Table 3. Sources of data

Variable	Countries (Years)	Source
<b>Social protection</b>		
SP Public Exp. (incl. health exp.), % of GDP	188 (1990–2011)*	ILO social protection database, (2014 World Social Protection Report, Table B.12)
SP Public Social Security Exp. (excl. health exp.), % of GDP	188 (1990–2011)*	ILO social protection database, (2014 World Social Protection Report, Table B.12)
<b>Quality of institutions</b>		
Functioning of Government	196 (2005–2012)	Quality of Government Basic Dataset (QOG). Freedom House
Government Effectiveness – Estimate	191 (1996–2011)	QOG dataset. World Bank, Worldwide Governance Indicators (WGI)
Rule of Law – Estimate	193 (1996–2011)	QOG dataset. World Bank - WGI
Property Rights	179 (1994–2012)	QOG dataset. Heritage Foundation
Polity2 (Revised Combined Polity Score)	179 (1946–2011)	QOG dataset. (Marshall & Jagers, 2009)
<b>People's preferences</b>		
Government to provide more public services	98 (1990–2014)	World Values Surveys (WVSs). Period 1990–1994 (wave two - 17 observations); 1995–1999 (wave three - 32 observations); 2000–2004 (wave four - 31 observations); 2005–2009 (wave five - 28 observations); and 2010–2014 (wave six - 52 observations).
<b>Economic</b>		
GDP per capita, PPP (2005 constant international \$)	181 (1980–2011)	QOG dataset. (World Bank, WDI, 2013)
Government Revenue, % of GDP	149 (1990–2011)	QOG dataset. (World Bank and WDI, 2013)
Total natural resources rents, % of GDP	220 (1970–2014)	World Bank and WDI, 2017
Gini Household Gross Income (from 0 to 100%)	152 (1981–2012)	World Bank – PovCal
Poverty rate at \$1.90 a day PPP (2011), % of population	152 (1981–2012)	World Bank – PovCal
Poverty gap at \$1.90 a day PPP (2011), % of poverty line	152 (1981–2012)	World Bank – PovCal
<b>Demographic</b>		
Total age dependency ratio, % of working-age population	258 (1961–2013)	World Bank – WDI (accessed on 22 July 2014)
Urban population, % of total population	258 (1961–2013)	World Bank – WDI (accessed on 22 July 2014)

(Continued)



**Table 3.** *Sources of data* - Continued

Variable	Countries (Years)	Source
Population, total	258 (1961–2013)	World Bank – WDI (accessed on 22 July 2014)
<b><i>Legal and historical</i></b>		
Maturity of SP Systems	175 (2009)	Based on International Social Security Association (ISSA) (Country Profiles). Author's own calculation
Colonial origin	211 (1946–2012)	QOG dataset. (Hadenius & Teorell, 2005)
Legal origin	211 (1946–2012)	QOG dataset. (La Porta, López-de-Silanes, Shleifer and Vishny, 2009)
<b><i>Instruments</i></b>		
Index for trade freedom (from 0 to 100)	180 (1994–2012)	QOG dataset. Heritage Foundation
Latitude (from 0 to 1)	211 (1946–2012)	QOG dataset. (La Porta, López-de-Silanes, Shleifer and Vishny, 2009)

*Note:* (\*) Data available every five years between 1990 and 2005 and yearly for the years 2007 to 2011. For all the variables if data for the year 2009 is not available, the closest year available is chosen.