Economic Effects of Social Protection

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4 The Effect of Constitutional Commitment to Social Security on Social Expenditure Schemes

Abstract

This paper studies the effect of constitutional commitment to social security (CCSS) on different categories of social expenditure. For this purpose, we use a pooled cross sectional database for 17 EU-countries from 1990 till 2012. We run OLS models, 2SLS regression models and the Heckman two step model, using the rigidity of the constitution as instrumental variable to correct for possible endogeneity. A positive effect of constitutional commitment to social security is found on total social expenditure and on all four categories of social security spending: old age and survivor, incapacity, unemployment and active labor market policies (ALMPs). The largest effect sizes, expressed as a percentage of average spending, are found for expenditure on unemployment and ALMPs. This shows that constitutional commitment to social security has the largest effect on social expenditure schemes targeted at people who are perceived as less deserving by the public opinion.

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4.1 Introduction

In recent decades, politicians and academics have emphasized the role of social rights for providing social and economic development (Townsend 2007; ILO 2014). The main argument for a rights-based approach to development is that it gives an entitlement that can be enforced in court. Without such a right, people are fully dependent on the 'good-will' of the government of that time for proper education, health care and social security. In theory, the constitution can play an important role for social rights, as constitutions provide universal rights for everyone and protect minorities against the majority. However, the number of empirical studies on the effect of social rights in the constitution is still very limited.

In this paper, we study the effect of constitutional commitment to social security (CCSS) on different kinds of social expenditure.[1] We define CCSS as a dichotomous variable, being 1 if there is at least a general statement in the constitution on a social right to income, unemployment, sickness, work injury, old age, survivor or disability and 0 if there is no statement on any of these categories. First, we are interested in the effect of CCSS on total social expenditure, which shows whether CCSS has an effect at all. Second, we study if the effect of CCSS is most sizable on social expenditure schemes for beneficiaries who are seen as less deserving by the public opinion. We expect this if the median voter cares less about these social expenditure schemes, leaving a larger role for the constitution.

We run OLS models, 2SLS regression models and the Heckman two step model with the rigidity of the constitution as an instrument to correct for possible endogeneity. In line with our expectations, we find a positive effect of the rigidity of the constitution on CCSS. First, this is in accordance with Landes and Posner (1975), who argue that the discounted value of the constitution is larger when the constitution is more durable. Second, uncertainty increases over time and thereby the risk that politicians themselves, but also the median voter, or their offspring become dependent on social security is larger for the distant future rather than the near. These

[1] The use of the acronym CCSS for constitutional commitment to social security is in line with Ben-Bassat and Dahan (2008, 2016).

two reasons show an added value of the constitution that supplements laws and policies.

We use a panel data set for 17 EU-countries from 1990 until 2012. The data on social expenditures as a % of GDP are taken from the Social Expenditure Database (SOCX) of the OECD. For CCSS, we use the indicator created by Ben-Bassat and Dahan (2008), which we defined as one or zero, depending on the presence of a legal provision on assistance to old age, survivors, disability, unemployment, sickness, work injury or the poor in the constitution.

Our main findings are as follows. First, we find a positive significant effect of CCSS on total social expenditure. This includes a positive effect on spending on old age and survivor, incapacity, unemployment and active labour market policies. Second, the most sizable effects, expressed as a percentage of average spending, are found for spending on unemployment and active labor market policies. These are the expenditure schemes targeted at people who are perceived as less deserving by the public opinion. Thirdly, no positive effect is found on expenditure on health and family, which are not covered in CCSS. This suggests that the positive effect we observe for social security types of social expenditure is due to CCSS and not caused by a positive attitude towards redistribution.

Our paper relates to two important studies that consider the effect of commitment to social rights in the constitution. Ben-Bassat and Dahan (2008) were the first to investigate the effects of the rights to social security, education, health, housing and workers' rights. They find no relation between these rights and expenditure on these different categories, except for the positive relation between the degree of constitutional commitment to social security and transfer payments and between constitutional commitment to health and health policy performance. In a more recent paper, Ben-Bassat and Dahan (2016) find a positive relationship between CCSS and the extent and coverage of actual measures of social security laws. The studies of Ben-Bassat and Dahan (2008, 2016) are the only two studies on the relation between CCSS and spending on social security, which makes more research on this topic a valuable contribution.

We make the following contributions to the literature. First, knowing if there is an effect of CCSS on total social expenditure contributes to research

on the popular rights-based approach, as it tells us if social rights in the constitution contribute to social security. Second, studying the effects on different kinds of social expenditure allows us to explain if CCSS has the strongest effect on social expenditure targeted at people who are perceived as less deserving by the public opinion. Third, an important contribution is how we correct for possible endogeneity in our empirical methodology. We select similar EU-countries and correct for the endogeneity problem by using both 2SLS models and the Heckman two step model. We use the rigidity of the constitution as an instrument in order to derive the effect of CCSS on social expenditure. This contributes to the current literature, which does not go beyond correlations inferred from OLS models for a sample with a wide variety of countries, which we deem as insufficient to deal with the endogeneity issue as well as to draw conclusions for the more homogeneous group of EU-countries.

The outline of the paper is as follows. Section 4.2 gives a literature review, in which we start with a theoretical framework on the effects of CCSS in Section 4.2.1 and proceed with the related empirical literature in Section 4.2.2. We continue with describing the methodology with an elaborate discussion on the causes of endogeneity and the methodological solutions to deal with this in Section 4.3.1. We give the empirical specification in Section 4.3.2. We discuss the data in Section 4.4 and the results in Section 4.5. We conclude with a discussion on the implications of the results in Section 4.6.

4.2 Constitutional rights and social security

4.2.1 Theories on the effects of CCSS

In this section we discuss the mechanisms how CCSS is expected to have an effect on top of normal laws and policies by the rigidity of the constitution, the interdependence cost calculus and the expressive function of law. We end this section with explaining the role of the median voter for social expenditure and how we expect the effects of CCSS for the different

expenditure schemes to be dependent on the preferences of the median voter.

The difference between constitutional law and normal laws and policies lies mainly in the more durable character of the constitution. Landes and Posner (1975) argue that benefits for interest groups are larger if policies or laws are more durable. This gives value to constitutional rights on top of normal laws.[2] This means that more rigid constitutions, which are more durable constitutions, are more valuable. This greater value makes it more likely that politicians will implement CCSS when the constitution is more rigid, as it is more worthwhile to put a statement on social security in the constitution when it is more durable. A second reason why we expect CCSS to be more valuable when constitutions are more durable is that uncertainty increases over time. The risk that politicians themselves, but also the current median voter, or their offspring become dependent on social security is larger for the distant future than the near future, making the willingness to pay for social security in the future larger than for social security in the present.[3] Hence, there is enough theoretical support for our empirical finding of a positive effect of the rigidity of the constitution on CCSS. Therefore, we can use the rigidity of the constitution as an instrument to derive the effect of CCSS on social expenditure in our empirical part, as we will explain in the methodology section.

Another economic rationale for CCSS is given by the interdependence cost calculus, which is about the trade-off between external costs and decision making costs (Buchanan and Tullock 1962). Rights in the constitution can protect minorities and thereby reduce external costs of political decisions. Therefore, the number of people involved in the decision making

[2]Politicians know that the durable character of the constitution will be questioned when they abolish or dramatically change the constitution. They also know that this would decrease the value of the constitution. For this reason, politicians are in favor of constitutions even when it limits their power, as they can use the constitution as a tool to extract rents related to a longer period than the time being an elected politician. Hence, we could explain the existence of constitutions in a multiparty system where different political parties alternate power. We can show in a game theoretical framework in which a tit for tat strategy is applied, like in Ordeshook (1992), that the Nash equilibrium is to respect the constitution.

[3]The risk-averse nature of humans may even increase this difference in willingness to pay for the uncertain future compared to the present in which the politician or median voter is unlikely to rely on social security.

can go down, reducing decision making cost. Hence, CCSS can reduce the sum of external costs and decision making costs. Also, more potential efficiency gains will be realized, as decision making costs can be an obstacle to implement efficient policies when these decision making costs outweigh the efficiency gains. We can compare this with an efficient contract that is not concluded when transaction costs are too high (Coase 1960). Besides, a reduction of the external costs affects policies through political stability. A right to social security protects the lower and middle class, making them less willing to resist against the government.

A third way in which CCSS can have an effect on social expenditure can be explained by the expressive function of law, in which CCSS gives information and thereby influences behavior. A provision in the constitution indicates that it is more fundamental and thereby provides a reference point, allowing lower decision making costs. Funk (2007) finds in her research on voting turnout that a law without penalties, targeted at the civic duty, might have a bigger impact on behavior than actions which affect the costs of provision for the public good. We expect this mechanism to be important as CCSS may have an effect on the political duty to care about social security.

We also study if CCSS has the largest effect on expenditure schemes that are preferred by the median voter or on expenditure schemes targeted at groups who are perceived as less deserving.[4] Blekesaune and Quadagno (2003) and Van Oorschot (2006) show that elderly people are seen as most deserving, closely followed by sick and disabled, whereas the unemployed are seen as less deserving. Knowing the preferences of the median voter allows us to test empirically if CCSS has the largest effects on the expenditure schemes preferred by the median voter or on

[4]In a democracy, we expect the preferences of the median voter to be the most important determinant for the level of social expenditure (Hotelling 1929; Black 1948; Downs 1957). Firstly, the median voter attaches more value to universal kinds of social expenditure, compared to targeted forms of social expenditure, as not only the poor but also the middle class benefits from these types of expenditure. This is supported by Korpi and Palme (1998), Rothstein (2001) and Larsen (2008) who show that a more universal character of entitlements causes higher levels of redistribution. Secondly, the median voter is expected to be more in favor of supporting social expenditure targeted at groups who are perceived as more deserving by the public opinion.

the expenditure schemes targeted at groups that are perceived as less deserving.

Empirical literature 4.2.2

In this section, we discuss the empirical literature on the effects of social rights in the constitution. Ben-Bassat and Dahan (2008) studied the effects of the rights to social security, education, health, housing and worker rights in the constitution. They constructed quantitative indicators for constitutional commitment for these five categories for 68 different countries. For social security, they studied the relationship between CCSS and the size of government and between CCSS and redistribution policy. They find no robust relation between constitutional commitment and public policy, except for the statistically significant association between CCSS and government transfers and between constitutional commitment to health and health policy performance. They find that an increase of one standard deviation in their CCSS index is associated with an increase of 1.7 percentage points in the share of transfers in GDP.

In a more recent study, Ben-Bassat and Dahan (2016) find a positive relation between their indicator of CCSS and the extent and coverage of actual measures of social security laws. The constitution seems to explain part of the cross country variation in welfare coverage around the world. They also tested for interaction effects between CCSS and the degree of constitutional review, the ease of amending the constitution, the power of NGOs and international organizations and ethnic fractionalization. In contrast with theoretical predictions, they find that these institutional factors do not have a significant influence on the effect of CCSS on social security policy.

Two other related studies look at a right to social security in the constitution on poverty and inequality. Bjørnskov and Mchangama (2019) find no evidence for an effect of the introduction of a right to social security in the constitution on inequality. Minkler and Prakash (2017) find no association between constitutional rights generally framed and poverty. These findings are in contrast with what we would expect based on the positive association between CCSS and social expenditure found

by Ben-Bassat and Dahan (2008, 2016). Both Bjørnskov and Mchangama (2019) and Minkler and Prakash (2017) use large panels covering 160 and 195 countries, whereas we are interested in the effect for the more homogeneous EU-countries. The results of these two studies may be driven by endogeneity as country characteristics are likely to play a role in explaining both social rights and poverty and inequality in a sample covering such a variety of countries. Furthermore, we look at the effect on social expenditure on which we expect a more direct effect than on inequality or poverty which can only indirectly be affected by a social right.

When taking a broader perspective, Espinosa (2016) finds that countries that spend more tend to inscribe fewer rights in their constitution. In line with this, social expenditure may have a negative effect on CCSS. Hence, the positive estimate of the effect of CCSS on social expenditure is a conservative estimate if the effect of social expenditure on CCSS is negative. Further, Espinosa (2016) finds fragile evidence that constitutional rights are more likely to induce larger governments only for a sample of democratic countries. Our sample exists of merely democratic countries and we use social expenditure rather than government expenditure and CCSS instead of their more general constitutional rights indicator, which makes it more likely that we find a positive significant effect. Another way by which constitutions affect government spending is by constitutional entrenched spending limits (Blume and Voigt 2013).

4.3 Methodology

4.3.1 Endogeneity issues

One way by which endogeneity may be a problem is by reverse causality, as the political conditions and the state of public opinions may cause constitutional structure, rather than the other way around (Riker 1976). Another endogeneity issue may be that societies with a culture that cares more about social security are expected to have both higher CCSS and higher total social expenditure. The latter indicates that third variables

as history, culture and religion my explain correlation between CCSS and social expenditure, rather than an effect of CCSS on social expenditure. In this section, we explain to what extent endogeneity may cause problems to find the effect of CCSS on social expenditure and how we address this endogeneity issues to find an effect that goes beyond mere correlations.

Constitutions can be considered as a representation or expression of social and political preferences, which have a deeper root in history, culture and religion. Ben-Bassat and Dahan (2008, 2016) show that cultural values and history, like religion and legal origin, indeed have an effect on both constitutional commitment and social benefits. They find that CCSS is on average higher in countries that share the tradition of French civil law. They also find that common law countries exhibit on average a lower CCSS. Constitutional commitments for socialist countries are closer to French civil law whereas German and Scandinavian traditions resemble the English common law more closely (Ben-Bassat and Dahan 2008). Part of the endogenous variation in CCSS can be explained by legal origin, which is related to geographical location and religion. Therefore, we control for legal origin to determine the partial effect of CCSS.

However, Ben-Bassat and Dahan (2016) argue that the endogeneity issue is less of a problem than we would expect, as it is hard to find common economic, cultural or other characteristics among countries that share a similar degree of constitutional commitment to social security. For example Scandinavian countries, which are known for their broad welfare state, have very different levels of CCSS. Finland has very high CCSS whereas Norway has a CCSS of zero. The same large differences for similar countries exist all over the sample with Greece having zero commitment whereas Italy has a very high CCSS. Hungary has a high CCSS while the Czech Republic has zero CCSS.

Ben-Bassat and Dahan (2016) also argue that endogeneity problems are absent if the effect of CCSS is interpreted as a proxy for stated preferences of the past, embedded in the culture. This is in line with Acemoglu et al. (2005), who argue that economic outcomes and the distribution of resources determine de facto political power, which has an effect on political institutions such as the constitution. In turn, these institutions have an effect on future redistribution of resources and future political

power. In this chain of causation, we measure the effect of the latest step, that is the effect of the 'stated public preferences in the constitution' on 'future political power', namely redistribution of resources and future public preferences. In this interpretation, we recognize that CCSS is affected by political preferences at the time when the constitution came into force. Finding an effect of CCSS indicates that former political preferences have a stronger effect on preferences of current politicians when these are stated in the constitution. Hence, culture is not a third variable that makes CCSS endogenous, but CCSS is a proxy of stated public preferences of the past. Finding a positive effect makes us conclude that political or public preferences are more durable if they are stated in the constitution.

To avoid biases in estimating the effect of CCSS, we use the rigidity of the constitution as an instrumental variable to derive the effect of CCSS on social expenditure in a 2SLS model and in the Heckman two step model. In these models, we assume that the rigidity of the constitution has an effect on CCSS, but no independent effect on social expenditure schemes. It is easy to imagine that CCSS is positively affected by the rigidity of the constitution, as explained in the theory part. First of all, because a higher level of rigidity implies a more durable character of the constitution and this would, according to Landes and Posner (1975), lead to a higher value for interest groups. After all, the added value of CCSS on top of normal policies and laws is expected to be very limited when constitutions are very adaptable. Second, preferences for CCSS are expected to be larger for more durable constitutions because uncertainty increases when time elapses and thereby the risk that the politician, the median voter, or their offspring become dependent on social security is larger in the far than the near future. For these two reasons, we expect a positive effect of the rigidity of the constitution on CCSS.

Regarding the exclusivity condition of our instrumental variable, there is no theoretical basis for an independent effect of the rigidity of the constitution on social expenditure. A potential risk is that another variable closely correlated with rigidity might have an effect on both CCSS and social expenditure directly. Trust might be such a variable that explains both

the rigidity of the constitution, CCSS and social expenditure.[5] However, Bjørnskov and Voigt (2014) argue that high trust levels reduce the need for statements in the constitution. In line with this it would also reduce the need for a more rigid constitution, suggesting a negative relation between trust and the rigidity of the constitution. But we find that trust and rigidity are only weakly (and positively) correlated, indicating that trust does not cause problems for the validity of our instrument. When we have a closer look at the data on the rigidity of the constitution, again no clear pattern appears between similar groups of countries and the rigidity of the constitution. All in all, we expect exclusivity of our instrument to be a justified assumption.

In the Heckman correction model, we correct for unobserved correlation between the selection model and the second stage. We expect a positive correlation, when CCSS is a complement to political decision making. This is the case when endogeneity is mainly driven by a welfare state culture explaining both CCSS and social expenditure. But we expect a negative correlation when CCSS is a substitute to political decision making. This implies that unobserved characteristics have a negative effect on the probability of CCSS and a positive effect on social expenditure. For instance, if the added value of a statement in the constitution would be smaller when policies or other laws are already inducing high social expenditure.

We also study the effect of CCSS on social expenditures on health and family. We expect no significant positive effects on these expenditure schemes as these are not taken into account in the CCSS indicator. However, we would still expect to find a positive significant effect of CCSS on social expenditure on family and health if part of the effect we measure is due to larger welfare regimes. Not finding such a positive effect can be interpreted as indication that the effect we find on social security expenditure is due to CCSS and not due to cultural factors that are both related with CCSS and social expenditure.

[5] Bjørnskov and Voigt (2014) show that social trust is negatively associated with the length of countries' constitutions. Although they are not studying constitutional rigidity, nor CCSS or social expenditure, social trust might also be important for explaining these variables

4.3.2 Empirical specification

We use various model specifications to estimate the effect of CCSS on different kinds of social expenditure. Regression equation (1) is used as a framework for the first three empirical model specifications:

$$y_{it} = \alpha_t + \gamma CCSS_i + X'_{it}\beta_x + \epsilon_{it}. \tag{4.1}$$

The dependent variables of interest are public and mandatory private gross total social expenditure and spending on old age and survivors, incapacity, unemployment, ALMPs, health and family, denoted by y_{it}. This outcome variables vary by country $(i = 1, ..., N)$ and years $(t = 1, ..., T)$. We regress the outcome variables on a set of year fixed effects (α_t), the control variables old age dependency ratio and GDP per capita X'_{it} with coefficients β_x and the explanatory variable of interest $CCSS_i$ with coefficient γ. The choice of these two control variables in the baseline model are in line with the literature (Ben-Bassat and Dahan 2016; Rodrik 1998; Mulligan et al. 2010). Note that CCSS is constant over time. Therefore the first specification is cross sectional, as we only use the data for 2008, which is the year in which CCSS is measured. From specification 2 onward we use the time period 1990-2012 and include year dummies to obtain more accurate estimates for our control variables and for CCSS. In specifications 2 and 3, we also include a first order serial correlation component in the error term and replace robust standard errors by panel corrected standard errors. Control variables for legal origin and unemployment are added in specification 3.

In specification 4, we control for endogeneity by using a 2SLS model using the rigidity of the constitution as instrument. Our first stage equation is given by regression equation (2):

$$CCSS_i = \alpha_t + \delta Z_i + X'_{it}\beta_x + \mu_{it} \tag{4.2}$$

In which Z_i denotes the rigidity of the constitution, our instrumental variable, with coefficient δ. As constitutions are constant, the rigidity of the constitution is constant over time as well. The second stage is still equal to equation (1). The rigidity of the constitution is expected to have an effect on CCSS but no direct effect on social expenditure. As explained

earlier, we can use this instrument to control for possible endogeneity to find a more accurate effect of CCSS on the different kinds of benefits. The rigidity of the constitution is expected to have a positive effect on CCSS, as the added value of CCSS on top of laws and policies is larger when the constitution is more rigid.[6]

Finally, specification 5 is our preferred model. Here we use the rigidity of the constitution to estimate the effect by using the Heckman two step model in which a correction for the correlation between unobserved characteristics in the selection model and unobserved characteristics in the second stage is applied (Heckman 1979). This yields:

$$Prob(CCSS_i = 1|Z_i, X'_{it}) = Prob(-\mu_{it} < \theta Z_i + \nu_x X'_{it}) \tag{4.3}$$

$$= \Phi(\theta Z_i + \nu_x X'_{it})$$

$$\begin{aligned} y_{it} &= \alpha_t + \gamma CCSS_i + X'_{it}\beta_x + \rho\sigma_\epsilon \Bigg[CCSS_i \frac{\phi(\widehat{\theta} Z_i + \widehat{\nu_x} X'_{it})}{\Phi(\widehat{\theta} Z_i + \widehat{\nu_x} X'_{it})} \\ &\quad -(1 - CCSS_i) \frac{\phi(\widehat{\theta} Z_i + \widehat{\nu_x} X'_{it})}{1 - \Phi(\widehat{\theta} Z_i + \widehat{\nu_x} X'_{it})} \Bigg] + \epsilon_{it}. \end{aligned} \tag{4.4}$$

where

$$\epsilon_{it} \sim N(0, \sigma_\epsilon)$$
$$\mu_{it} \sim N(0, 1)$$

and

$$\rho = \frac{cov(\epsilon, \mu)}{\sigma_\epsilon}$$

The first stage, follows from a probit regression model for the probability of CCSS, see equation (3). Z_{it} denotes the rigidity of the constitution,

[6] In our robustness analysis, we find that the rigidity of the constitution is a weak instrument for the OECD sample, which is denoted by a low F-statistic. Therefore, for the OECD sample, we can only use our first three (OLS) specifications.

which is our exclusion restriction, with parameter θ and X'_{it} give the explanatory variables GDP per capita and the old age dependency ratio with parameters ν_x. Estimation of this first stage model yields results that can be used to predict the probability that a country has CCSS. Equation (4) is our second stage equation, where γ gives the effect of CCSS when we control for selectivity. We assume that the error terms are jointly normal and are independent and identically distributed. ρ is the correlation between unobserved determinants of $CCSS_{it}$ and unobserved determinants of social expenditure. σ_ϵ is the standard deviation of ϵ_{it}. We use the inverse mills ratio to correct for selectivity, in which ϕ denotes the standard normal density function and Φ the standard normal cumulative distribution function. We use robust standard errors to correct for possible heteroscedasticity.

4.4 Data

We use a pooled cross sectional data set for 17 EU-countries covering 23 years from 1990 to 2012.[7] We choose to focus on EU-countries that are represented in the OECD for the reason of data availability and because there is less heterogeneity between these developed countries, making cross-country comparison more reliable. The countries Estonia, Latvia, Luxembourg and Slovenia were removed from the database, because both the index for CCSS and the index for the rigidity of the constitution are not available for these countries (Ben-Bassat and Dahan 2008; Lorenz 2005). This makes our selected countries even more comparable with regard to GDP per capita, geographical location and being consolidated democracies, reducing the risk that third factors obscure our results. We focus on the period from 1990 onwards, making the data set highly balanced, as this enables us to take the post-Soviet countries into account; a substantial share of the data is missing for these countries for the period before 1990.

We choose to use the CCSS indicator created by Ben-Bassat and Dahan (2008, 2016) as we consider this data of higher quality than the data sets

[7] Countries in EU sample: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, United Kingdom.

from the Toronto Initiative for Economic and Social Rights (TIESR) (Jung and Rosevear 2011) and the data set from the Comparative Constitutions Project (CCP) (Elkins et al. 2014). First, because Ben Bassat and Dahan studied the various constitutions thoroughly to code both different types of commitment to social security and different degrees of commitment. The other data sets only capture a dummy if there is a social right to social security in the constitutions.[8] Looking more carefully in the constitutions reduces the risk of making mistakes. Second, we consider the indicator of Ben Bassat and Dahan most accurate as The Netherlands and Sweden do commit to social security in the constitution, which is not given for the Netherlands in the CCP data set and not for Sweden in both the TIESR and the CCP data sets.[9] Third, a lot of data on commitment to social security is missing for different OECD countries and years in the CCP dataset. We could have exploited the panel nature of this dataset if this dataset was more complete regarding social rights to social security. However, the added value of using this panel nature is limited as constitutions hardly change over time. Looking at the CCP dataset, I only found 4 changes in CCSS for our sample of 28 OECD countries during the period 1990-2012.[10] Besides, constitutional changes are expected to be highly correlated with other political or economic shocks, making it difficult to separate the effect of social rights from the effects of these other shocks.

Another reason why we accept that we lose some countries when we use these CCSS and rigidity indicators is that Ben-Bassat and Dahan (2008,

[8]The CCP project is unique as it codes constitutions in hundreds of variables and is therefore of great value for studying the empirical effects of constitutions, but its limitation is that by looking at so many different aspects, less accuracy is expected for individual indicators.

[9]Article 20 of the Dutch constitution: 1. It shall be the concern of the authorities to secure the means of subsistence of the population and to achieve the distribution of wealth. 2. Rules concerning entitlement to social security shall be laid down by Act of Parliament. 3. Dutch nationals resident in the Netherlands who are unable to provide for themselves shall have a right, to be regulated by Act of Parliament, to aid from the authorities.

Article 2(2) of Chapter 1 of the Swedish constitution (headed 'Basic Principles'): "The personal, economic and cultural welfare of the individual shall be fundamental aims of public activity. In particular, the public institutions shall secure the right to employment, housing and education, and shall promote social care and social security, as well as favourable conditions for good health".

[10]Changes in CCSS are found for Belgium (1994), Finland (1998), France (2000), Poland (1997) in the CCP dataset.

2016) already studied the association between CCSS and social expenditure for a large variety of countries from all over the world. Our contribution is in finding effects rather than associations, using an IV approach, and looking at different social expenditure schemes. For these purposes, it is important that countries are not too different in unobserved characteristics that might drive our results. Therefore, we value quality of the data over quantity.

We transform the CCSS indicator of Ben-Bassat and Dahan (2008, 2016) in a dichotomous variable, being 1 if there is at least a general statement in the constitution on a social right to income, unemployment, sickness, work injury, old age, survivor or disability and 0 if there is no statement on any of these categories. The choice of taking the sum of these five categories corresponds to Ben-Bassat and Dahan (2008, 2016). A high overlap and substitutability between the different types of commitment to social security, caused by the abstract formulation of the legal provisions, makes us believe that the sum has more explanatory power than the individual commitment to social security variables.[11] We use a dichotomous variable in our baseline models, because we expect the existence of a legal provision in the constitution to be more important than the concreteness of this legal provision.

The outcome variables we consider are social expenditure variables for which we use the Social Expenditure Database (SOCX) of the OECD. Our main variable for social security is public and mandatory private gross total social expenditure as a % of GDP, which we define as total social expenditure.[12] This total social expenditure consists of spending on old age and survivor, incapacity, unemployment, ALMPs, health and family, which are our next dependent variables.[13] A description of the different social expenditure variables is given in the appendix in Table A.5.1.

[11] For example, Article 2 of the Swedish constitution and article 20 of the Dutch constitution may explain an effect on spending in multiple categories, see footnote 9.

[12] Data on net total social expenditure is not available for the different expenditure types, and very limited for total social expenditure, therefore we use data on gross social expenditure.

[13] A very small part of total social expenditure consists of expenditure on housing and others. we choose not to analyze these kinds of social expenditure separately because of the low significance, on average 0.33% and 0.46% of GDP in the period 1990-2012.

Table 4.1: Descriptive statistics: differences in means between countries with and without constitutional commitment to social security (CCSS) for the different social expenditure variables shown as % of GDP

	Countries with CCSS	Countries without CCSS	Differences in Means	Differences (in %) relative to Countries without CCSS
Total social expenditure	23.5	22.0	1.5	6.9
Old age and Survivor	9.3	9.5	0.2	−2.0
Incapacity	3.1	2.4	0.7	29.1
Unemployment	1.5	0.8	0.6	76.3
ALMPs	0.9	0.5	0.4	88.4
Health	5.6	5.8	-0.2	−3.5
Family	2.2	2.1	0.1	4.2
Observations	12	5		

Sample: 17 EU countries in the years 1990-2012.

Table 4.1 gives the descriptive statistics on the different social expenditure schemes for countries with and without CCSS, for EU countries over the period 1990-2012. We find that total social expenditure is on average 23.5 percent of GDP in the countries with CCSS and 22.0 in the countries without CCSS. This difference is 7 percent relative to the mean of total social expenditure for countries without CCSS. The relative differences are the largest for spending on unemployment and ALMPs (respectively 76 percent and 88 percent relative to the means in countries without CCSS). Further, in countries with CCSS, we observe less spending on old age and survivor (-2 percent) and more spending on incapacity ($+29$ percent). Regarding social expenditure which is not taken into account in CCSS, we find slightly larger spending in countries with CCSS on family (+4 percent), whereas we find less spending on health (-3 percent).

Our instrumental variable, the the rigidity of the constitution, is the average of the standardized indices for rigidity in Lorenz (2005). This index considers the factors: kinds of majority, success rate, times of voting, unicameral/bicameral legislature, initiative actors, special body or regulator legislature, need of elections between two votes, electoral system, approval by referendum, approval by states' legislatures. The rigidity of the constitution, CCSS and total social expenditure are given

for the different countries in the year 2008 in Table A.4.2. We consider the rigidity of the constitution of Lorenz (2005) a better instrument than the amendment rate because it contains more dimensions and has the highest correlation with most other variables for the rigidity of the constitution (Ginsburg and Melton 2015).

Further, we create an interaction variable between CCSS and political party in office to study how constitutional commitment and political party in office have a combined effect on social security benefits. For politics, we use left-wing/center/right-wing cabinet posts in percentage of total cabinet posts from the comparative Political Data Set (Armingeon et al. 2013).

The control variables we use are GDP per head of population (USD in thousands, constant prices, 2010 PPPs), the old age dependency ratio (percentage of 65+ relative to 15-64 years old), dummies for legal origin, unemployment rate (standardized unemployment rate, all persons) and year dummies, see the appendix Table A.4.3 for the descriptive statistics. These control variables are chosen as they have the largest effects on the social expenditure schemes and are expected to influence the effect of CCSS on social expenditure. These control variables are in line with the literature (Kittel et al. 2003; Mulligan et al. 2010; Ben-Bassat and Dahan 2008; Ben-Bassat and Dahan 2016). For legal origin we use dummies for French, English, German and Scandinavian legal origin, where we use socialist legal origin as the reference category.

In our robustness analysis, we also investigate the effect for the sample of EU-countries together with Iceland, Switzerland and Norway, as well as for a sample of OECD countries without Japan and Korea.[14] Japan and Korea are outliers as they have a different Asian system with very low levels of social spending.[15] Hence, Japan and Korea are outliers for

[14]Countries in OECD sample: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States

[15]Reasons for low spending in Japan and Korea can be found in social policies as means rather than as goals, larger involvement of family and private sector in the welfare mix, late start of welfare system, top-down development of social policies, colonial past and the neglect for social services targeting woman (Hong, 2014).

reasons independent of CCSS and therefore we decided to drop these two countries from our database.

Results 4.5

Table 4.2 presents the regression results of CCSS on total social expenditure. Column (1) shows the results for the year 2008 where we only control for GDP per capita and the old age dependency ratio. This specification suggests a positive effect, significant at a 10 percent level, indicating that countries with CCSS spend on average 2.0 percentage points of GDP more on total social expenditure. This implies that the mean total social expenditure rate for countries with CCSS is 9% higher than for countries without CCSS. In Column (2), we use the years 1990-2012 and add year dummies to our empirical specification. The robust standard errors are replaced by panel corrected standard errors and we include a first order serial correlation component. The effect of CCSS on total social expenditures slightly increases and is highly significant now.

Adding control variables for the unemployment rate and legal origin, in column (3), does not change much. German legal origin and Scandinavian legal origin have the largest positive effect on total social expenditure, socialist and English legal origin the lowest. The unemployment rate increases total social expenditure, which we expected as it controls for business cycle differences.

The effect of CCSS on total social expenditure increases to 3.1 percentage points in our 2SLS model, in which we use the rigidity of the constitution as instrument. An increase in the coefficient suggests an underestimation of the effect size when we do not control for endogeneity. This could be explained by the constitution being a substitute for political decision making. In the first stage regression, we find a large positive effect of the rigidity of the constitution on CCSS. The F-test of excluded instruments is easily rejected with an F-value of 73.6, see Table 4.3, suggesting sufficient relevance of our instrument.

In column (5), the effect size increases to 3.8 percentage points when we control for unobserved correlation between our selection model and

Table 4.2: Estimation results of constitutional commitment to social security (CCSS) on total social expenditure

	(1)	(2)	(3)	(4)	(5)
CCSS	1.990*	2.198***	2.261***	3.053***	3.763***
	(1.099)	(0.664)	(0.862)	(0.939)	(1.015)
Old age dependency ratio	0.574***	0.599***	0.214**	0.692***	0.708***
	(0.104)	(0.087)	(0.083)	(0.059)	(0.061)
GDP per capita	1.081	−0.858**	−1.534***	1.336***	1.282***
	(0.671)	(0.402)	(0.518)	(0.243)	(0.249)
Unemployment rate			0.185***		
			(0.034)		
French legal origin			4.325***		
			(1.277)		
English legal origin			1.577		
			(1.268)		
German legal origin			10.170***		
			(1.451)		
Scandinavian legal origin			8.432***		
			(1.450)		
Constant	3.957	8.243***	12.230***	0.111	−0.614
	(2.602)	(1.853)	(2.068)	(1.651)	(1.720)
Year dummies	No	Yes	Yes	Yes	Yes
Method	OLS	OLS	OLS	2SLS	Heckman
Standard errors	Robust	PCSE	PCSE	Robust	Robust
AR(1) component	NO	YES	YES	NO	NO
Years	2008	1990-2012	1990-2012	1990-2012	1990-2012
Countries	17	17	17	17	17
Observations	17	382	359	382	382
R-squared	0.601	0.748	0.843	0.459	

Sample: EU-countries. Instrument: the rigidity of the constitution. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table 4.3: First stage results: the rigidity of the constitution on constitutional commitment to social security (CCSS)

	(1)
VARIABLES	CCSS
Rigidity constitution	0.225***
	(0.026)
Old age dependency ratio	−0.016**
	(0.007)
GDP per capita	0.040
	(0.028)
Observations	382
R-squared	0.131
F-statistic	73.59

* denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

second stage regressions by using the Heckman two step model. The effect size in our preferred specification, column 5, is a substantial 17% relative to the mean of total social expenditure for countries without CCSS. Also the extent to which the Heckman two step model is correcting for unobserved correlation, denoted by rho, is with a value of -0.4 within acceptable proportions. The negative rho means that there is a lower probability of CCSS when other factors already take care of social expenditure (e.g. politicians or labor unions).

Table 4.4 presents the effect of CCSS on the different social spending categories when we split up total social expenditure. The largest effect sizes, expressed as a percentage of average spending, are found for expenditure on unemployment and ALMPs. In our preferred specification, column 5, a positive effect of 2.1 percentage points is found for expenditure on unemployment, which is an increase of 248% relative to the mean of expenditure on unemployment in countries without CCSS. For expenditure on ALMPs we find a coefficient of 0.5, which is an increase of 99% relative to the mean. Although smaller in relative size, we still find large positive significant effects of CCSS on expenditure on old age and survivor and on incapacity. A positive coefficient of 2.46 is found for old age and survivor, which is about 26% relative to the mean in countries without CCSS and we find a positive effect of 0.7 percentage points for incapacity which is about 28% relative to the mean. However, for the effect on old age and survivor we find no significant effect in specifications (2) and (3), suggesting that we have to be more careful in drawing conclusions. We find a negative rho for all kinds of social expenditure except for expenditure on family benefits. Meaning that for all these other social expenditure schemes, there is a lower probability of CCSS when other factors (e.g. politicians or labor unions) already take care of social expenditure.

No significant positive effect is found on health and family spending, which are not taken into account in the CCSS variable. This provides extra evidence that the effects we find on social security expenditure are due to CCSS and not caused by a third factor, such as a large welfare state. We even observe a negative significant effect on family, suggesting that this social expenditure type is substituted by expenditure on social security. This may be explained by government budget constraints or because the

Table 4.4: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure

	(1)	(2)	(3)	(4)	(5)	%Δ
Total social expenditure	1.990*	2.198***	2.261***	3.053***	3.763***	17%
	(1.099)	(0.664)	(0.862)	(0.939)	(1.015)	
Correlation (rho)					−0.363	
Old age and Survivor	0.698	−0.005	0.063	3.233***	2.464***	26%
	(1.154)	(0.525)	(0.620)	(0.688)	(0.522)	
Correlation (rho)					−0.609	
Incapacity	0.684	0.681***	0.736***	0.784**	0.691**	28%
	(0.433)	(0.243)	(0.219)	(0.329)	(0.343)	
Correlation (rho)					−0.020	
Unemployment	0.475	0.757***	0.797***	2.122***	2.107***	248%
	(0.290)	(0.195)	(0.187)	(0.351)	(0.098)	
Correlation (rho)					−0.924	
ALMPs	0.282**	0.427***	0.479***	0.492***	0.475***	99%
	(0.100)	(0.074)	(0.073)	(0.110)	(0.067)	
Correlation (rho)					−0.108	
Health	−0.066	0.055	0.004	−0.030	0.056	1%
	(0.375)	(0.223)	(0.335)	(0.237)	(0.145)	
Correlation (rho)					−0.142	
Family	−0.063	0.119	0.218	−2.303***	−1.684***	−79%
	(0.404)	(0.160)	(0.203)	(0.409)	(0.0742)	
Correlation (rho)					0.983	
Year dummies	No	Yes	Yes	Yes	Yes	
controls legal origin	No	No	Yes	No	No	
controls unemployment	No	No	Yes	No	No	
Method	OLS	OLS	OLS	2SLS	Heckman	
Standard errors	Robust	PCSE	PCSE	Robust	Robust	
AR(1) component	NO	YES	YES	NO	NO	
Years	2008	1990-2012	1990-2012	1990-2012	1990-2012	
Countries	17	17	17	17	17	

Sample: EU-countries. Instrument: the rigidity of the constitution. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

government takes into account the total budget of the needy, which is already higher when they can rely on generous social security benefits.

The results remain the same in the robust analysis. Table A.4.4 in the appendix shows that the results are robust when we add the European non-EU countries: Iceland, Norway and Switzerland. Table A.5.10 shows robust results in our sample of 28 OECD countries, when we exclude Japan and Korea as they have a different Asian system. Further, we find the same positive effects when we only consider the period before the Great Recession (1990-2009), in Table A.4.6. Finally, the results remain robust when we standardize the 3 values with the lowest and highest rigidity of the constitution and when we transform the variable for the rigidity of the constitution in a dichotomous variable, to correct for possible outliers, see Table A.4.7 and Table A.4.8.

We study non-linear effects in Tables A.4.9 and interaction effects with politics in Table A.4.10, see the appendix. In Table A.4.9 we observe significant negative effects of the square of CCSS on total social expenditure, suggesting that the concreteness of CCSS is less important than the statement itself. Regarding interaction effects with politics, no effect is found of left-wing cabinet seats on social expenditure, nor of left-wing cabinet seats interacted with CCSS, see Table A.4.10 appendix. We find some evidence that more right-wing cabinet seats translate in lower total social expenditure but that the interaction between right-wing cabinet seats and CCSS has a positive effect on total social expenditure. This suggests that right-wing politicians reduce total social spending less when there is CCSS. However, more research is required on this result as the effect is not significant in specifications (2) to (4).

Discussion and conclusion 4.6

In this paper, we studied the effect of constitutional commitment to social security (CCSS) on different kinds of social expenditure. We used a pooled cross sectional database for 17 EU-countries from 1990 till 2012.

The main challenge of research on institutions like CCSS is that they are related to many other things like culture, religion, legal origin, geography, political institutions, etc. We deal with this potential endogeneity problem extensively by limiting the sample to more similar EU-countries, control for legal origin and use 2SLS models and the Heckman two step model with the rigidity of the constitution as instrumental variable.

First, we find a positive significant effect of CCSS on total social security expenditure, which increases when we control for endogeneity. This includes positive effects on the categories of social expenditure on old age and survivor, incapacity, unemployment and active labor market policies. This is in accordance with the rights-based approach to development, which supplements the focus on market institutions and property rights with human rights and social policies (Townsend 2007: ILO 2014). This result corresponds with the findings of Ben-Bassat and Dahan (2008, 2016) who find a positive relation between CCSS and transfer payments and

between CCSS and the extent and coverage of measures of social security laws.

Second, the results show that the added value of CCSS is mostly found for expenditure on unemployment and ALMPs. Blekesaune and Quadagno (2003) and Van Oorschot (2006) show that the general public perceives the unemployed as less deserving than the old and disabled, suggesting lower support for spending on the unemployed by the median voter. This could explain why CCSS, rather than the median voter theory alone, can explain the scope of expenditure on unemployment and ALMPs. Hence, the importance of CCSS is mainly to protect people who are perceived as less deserving, which makes CCSS a substitute for political decision making. This is in line with the theory of the interdependence cost calculus, in which Buchanan and Tullock (1962) argue that the role of the constitution is mainly to protect minorities. These is also supported by finding more sizable effects when we control for endogeneity and by a negative rho in the Heckman model. This suggests that there are third factors (e.g. political decision making) that have a positive effect on social expenditure and a negative effect on CCSS.

Thirdly, No positive significant effect is found for expenditure on families and health which are the two social expenditure categories that are not included in CCSS. This indicates that the positive relationship between CCSS and the social security types of social expenditure is really due to CCSS and not due to different social preferences that affect both CCSS and social expenditure.

Supplementary material 4.A

Table A.4.1: The OECD social expenditure categories

Category	Description
Old-age	Pensions, early retirement pensions, home-help and residential services for the elderly.
Survivors	Pensions and funeral payments.
Incapacity	Care services, disability benefits, benefits accruing from occupational injury and accident legislation, employee sickness payments.
Health	Spending on in- and out-patient care, medical goods, prevention.
Family	Child allowances and credits, childcare support, income support during leave and sole parent payments.
ALMPs	Active Labour Market Policies: employment services, training youth measures subsidized employment, employment measures for the disabled.
Unemployment	Unemployment compensation, severance pay and early retirement for labour market reasons.
Housing	Housing allowances and rent subsidies.
Other	Social policy areas, non-categorical cash benefits to low-income households, other social services; i.e. support programs such as food subsidies.

Description of the different categories is taken from OECD (2007)

Table A.4.2: Descriptive statistics: values of constitutional commitment to social scurity (CCSS) and the rigidity of the constitution for the different countries

Country	Year	Total	CCSS	Rigidity const.
EU countries				
Austria	2008	26.40	0	−0.47
Belgium	2008	26.31	1	0.64
Czech Republic	2008	18.21	0	−0.18
Denmark	2008	27.44	1	0.37
Finland	2008	23.34	1	−0.08
France	2008	28.54	1	−0.64
Germany	2008	25.30	0	0.16
Greece	2008	21.41	0	−0.34
Hungary	2008	22.65	1	−0.41
Ireland	2008	18.49	1	−0.43
Italy	2008	26.19	1	−0.16
Netherlands	2008	20.16	1	0.65
Poland	2008	20.23	1	−0.02
Portugal	2008	22.57	1	−0.47
Spain	2008	22.19	1	0.58
Sweden	2008	25.95	1	−1.12
United Kingdom	2008	21.72	0	−2.03
Other European countries				
Iceland	2008	20.24	1	
Norway	2008	20.35	0	0.05
Switzerland	2008	22.48	1	0.36
Other non-European OECD countries				
Anglo-Saxon:				
Australia	2008	18.87	0	0.88
Canada	2008	16.31	0	0.55
New Zealand	2008	19.35	0	−1.91
United States	2008	16.84	0	2.07
Non-Anglo-Saxon:				
Chile	2008	12.18	1	0.44
Israel	2008	15.96	0	
Mexico	2008	6.84	1	
Turkey	2008	11.58	1	
Asian countries				
Japan	2008	20.18	1	1
Korea	2008	8.26	1	0.44

The rigidity of the constitution is not available for Iceland, Israel, Mexico, Turkey

Table A.4.3: Descriptive statistics of all used variables: extention of Table 1.

Variable	Obs	Mean	Std. Dev.	Min	Max
Total social expenditure	382	23.0	4.3	12.4	34.6
Old age and survivor	382	9.3	2.8	3.1	17.5
Incapacity	382	2.9	1.238	0.8	6.4
Unemployment	388	1.3	1.0	0.0	4.6
ALMPs	388	0.8	0.5	0.1	2.7
Health	390	5.7	1.1	3.2	8.5
Family	382	2.2	1.0	0.3	4.5
CCSS (dummy)	391	0.71	0.46	0	1
CCSS (non-dichotomous)	391	0.64	0.72	0	2.14
Rigidity constitution	391	-0.23	0.65	-2.03	0.65
GDP per capita (in thousands)	390	3.1	0.8	0.9	4.8
Old age dependency ratio	391	23.3	3.4	15.5	32.2
Unemployment rate	362	8.6	3.8	1.7	24.8
French civil law	391	0.41	0.49	0	1
English common law	391	0.12	0.32	0	1
German law	391	0.12	0.32	0	1
Socialist law	391	0.18	0.38	0	1
Scandinavian law	391	0.18	0.38	0	1

Sample: EU-countries.

Table A.4.4: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: sample of EU-countries plus Norway, Switzerland and Iceland

	(1)	(2)	(3)	(4)	(5)
Total social expenditure	2.134*	1.655***	1.496***	2.385***	2.122**
	(1.058)	(0.501)	(0.491)	(0.903)	(0.837)
Old age and Survivor	0.776	0.067	0.190	3.380***	3.040***
	(0.921)	(0.418)	(0.557)	(0.683)	(0.785)
Incapacity	0.421	0.252	0.165	0.617*	0.328
	(0.409)	(0.180)	(0.107)	(0.318)	(0.329)
Unemployment	0.499*	0.611***	0.479**	1.876***	1.984***
	(0.277)	(0.193)	(0.206)	(0.304)	(0.246)
ALMPs	0.266**	0.336***	0.428***	0.354***	0.350***
	(0.112)	(0.087)	(0.095)	(0.113)	(0.115)
Health	0.175	0.207	0.061	−0.231	−0.063
	(0.417)	(0.215)	(0.276)	(0.235)	(0.152)
Family	−0.058	−0.046	0.052	−2.387***	−1.869***
	(0.388)	(0.165)	(0.141)	(0.399)	(0.089)
Year dummies	No	Yes	Yes	Yes	Yes
Method	OLS	OLS	OLS	2SLS	Heckman
Standard errors	Robust	PCSE	PCSE	Robust	Robust
AR(1) component	NO	YES	YES	NO	NO
Years	2008	1990-2012	1990-2012	1990-2012	1990-2012
Countries	20	20	20	19	19

Instrument: the rigidity of the constitution. The rigidity of the constitution is not available for Iceland, leaving 19 countries in specification (4) and (5). * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.5: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: sample of OECD countries minus Japan and Korea

	(1)	(2)	(3)
Total social expenditure	1.989**	1.299**	1.694***
	(0.847)	(0.576)	(0.616)
Old age and Survivor	1.185*	0.641*	0.103
	(0.675)	(0.369)	(0.546)
Incapacity	0.559	0.442***	0.315**
	(0.410)	(0.145)	(0.157)
Unemployment	0.379	0.378**	0.564***
	(0.229)	(0.156)	(0.167)
ALMPs	0.265***	0.332***	0.442***
	(0.094)	(0.066)	(0.084)
Health	−0.379	−0.412***	−0.021
	(0.366)	(0.114)	(0.340)
Family	0.044	−0.026	0.286**
	(0.402)	(0.170)	(0.119)
Year dummies	No	Yes	Yes
Method	OLS	OLS	OLS
Standard errors	Robust	PCSE	PCSE
AR(1) component	NO	YES	YES
Years	2008	1990-2012	1990-2012
Countries	28	28	28

Only OLS models lead to reliable results when considering the OECD, because the rigidity of the constitution has lower explanatory power for CCSS (lower F-statistic) and it is harder to argue that the exclusion restriction still holds as the rigidity of the constitution may be endogeneous due to larger cultural differences when considering the OECD rather than merely the EU countries represented in the OECD. Japan and Korea are excluded from the sample as they have a different Asian system of social security, in which social expenditure is typically much lower. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.6: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: period before Great Recession (1990-2008)

	(1)	(2)	(3)	(4)	(5)
Total social expenditure	1.990*	2.226***	2.565***	3.544***	3.949***
	(1.099)	(0.696)	(0.603)	(1.086)	(0.992)
Old age and Survivor	0.698	0.202	0.475	3.598***	2.766***
	(1.154)	(0.295)	(0.502)	(0.782)	(0.853)
Incapacity	0.684	0.701**	0.746***	0.705*	0.560
	(0.433)	(0.275)	(0.200)	(0.386)	(0.400)
Unemployment	0.475	0.672***	0.604***	2.066***	2.049***
	(0.290)	(0.160)	(0.147)	(0.368)	(0.112)
ALMPs	0.282**	0.389***	0.480***	0.464***	0.463***
	(0.100)	(0.0823)	(0.0862)	(0.128)	(0.0713)
Health	−0.0662	0.0778	0.133	0.0280	0.118
	(0.375)	(0.200)	(0.237)	(0.242)	(0.129)
Family	−0.0633	0.141	0.242	−2.043***	−1.772***
	(0.404)	(0.159)	(0.204)	(0.423)	(0.104)
Year dummies	No	Yes	Yes	Yes	Yes
Method	OLS	OLS	OLS	2SLS	Heckman
Standard errors	Robust	PCSE	PCSE	Robust	Robust
AR(1) component	NO	YES	YES	NO	NO
Years	2008	1990-2008	1990-2008	1990-2008	1990-2008
Countries	17	17	17	17	17

Sample: EU-countries. Instrument: the rigidity of the constitution. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.7: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: highest and lowest values of rigidity standardized

	(1)	(2)
Total social expenditure	2.562*	3.362**
	(1.545)	(1.341)
Old age and Survivor	−0.391	0.464
	(0.969)	(0.586)
Incapacity	2.486***	1.695***
	(0.718)	(0.282)
Unemployment	2.687***	2.134***
	(0.608)	(0.084)
ALMPs	0.806***	0.666***
	(0.177)	(0.090)
Health	−0.317	0.026
	(0.367)	(0.150)
Family	−2.397***	−2.026***
	(0.572)	(0.095)
Year dummies	Yes	Yes
Method	2SLS	Heckman
Standard errors	Robust	Robust
AR(1) component	NO	NO
Years	1990-2012	1990-2012
Countries	17	17

Sample: EU-countries. Instrument: the rigidity of the constitution. Highest values of rigidity, for The Netherlands, Belgium and Spain, are standardized to 0.37 and the lowest values of rigidity, for United Kingdom, Sweden and France, are standardized to −0.47. By this standardization we try to be as objective as possible as we choose 3 outliers of both sides of the distribution. The values 0.37 and −0.47 are equal to the values of the fourth observation from both sides of the distribution. This choice is also based on the consideration that the mean of the rigidity of the constitution is slightly negative. For the Heckman model on family expenditure we did not control for the old age dependency ratio as there was a discontinuous region encountered. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.8: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: rigidity as a dichotomous variable

	(1)	(2)
Total social expenditure	4.357***	3.894***
	(1.074)	(0.870)
Old age and Survivor	2.657***	1.708***
	(0.747)	(0.492)
Incapacity	2.078***	1.621***
	(0.430)	(0.235)
Unemployment	1.676***	2.130***
	(0.300)	(0.097)
ALMPs	0.466***	0.514***
	(0.112)	(0.111)
Health	−0.534**	0.126
	(0.248)	(0.145)
Family	−1.506***	−1.829***
	(0.316)	(0.107)
Year dummies	Yes	Yes
Method	2SLS	Heckman
Standard errors	Robust	Robust
AR(1) component	NO	NO
Years	1990-2012	1990-2012
Countries	17	17

Sample: EU-countries. Instrument: the rigidity of the constitution. The dichotomous variable for the rigidity of the constitution = 1 if the the rigidity of the constitution > -0.17 and 0 otherwise. Countries with a rigid constitution are Belgium, Denmark, Finland, Germany, Italy, The Netherlands, Poland and Spain. Countries with no rigid constitution are Austria, Czech Republic, France, Greece, Hungary, Ireland, Portugal, Sweden and the United Kingdom. For the Heckman model on family expenditure we did not control for the old age dependency ratio as there was a discontinuous region encountered. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.9: Estimation results of constitutional commitment to social security (CCSS) on different kinds of social expenditure: CCSS as non-dichotomous variable

	(1)	(2)	(3)	(4)
Total social expenditure				
CCSS	5.629*	1.621	4.219**	4.542***
	(2.641)	(1.655)	(1.743)	(1.523)
CCSS squared	−2.794**	−1.008	−2.698***	
	(1.230)	(0.763)	(0.763)	
old age and Survivor				
CCSS	1.783	−0.681	1.213	4.810***
	(2.407)	(1.067)	(1.017)	(0.878)
CCSS squared	−0.872	0.382	−0.582	
	(1.069)	(0.452)	(0.448)	
Incapacity				
CCSS	0.749	−0.454	0.659	1.167**
	(1.307)	(0.660)	(0.423)	(0.578)
CCSS squared	−0.275	0.212	−0.447**	
	(0.619)	(0.337)	(0.202)	
Unemployment				
CCSS	1.836	1.707***	1.299***	3.175***
	(1.038)	(0.535)	(0.356)	(0.773)
CCSS squared	−0.779	−0.790***	−0.584***	
	(0.527)	(0.247)	(0.156)	
ALMPs				
CCSS	0.48*	0.506**	0.772***	0.736***
	(0.251)	(0.230)	(0.198)	(0.217)
CCSS squared	−0.216*	−0.258**	−0.451***	
	(0.104)	(0.121)	(0.103)	
Health				
CCSS	0.793	0.580	0.196	−0.0446
	(0.949)	(0.466)	(0.537)	(0.355)
CCSS squared	−0.573	−0.387*	−0.255	
	(0.539)	(0.215)	(0.232)	
Family				
CCSS	0.166	−0.408	0.503	−3.426***
	(1.210)	(0.306)	(0.403)	(0.754)
CCSS squared	−0.099	0.103	−0.359**	
	(0.552)	(0.134)	(0.167)	
Year dummies	No	Yes	Yes	Yes
Method	OLS	OLS	OLS	2SLS
Standard errors	Robust	PCSE	PCSE	Robust
AR(1) component	NO	YES	YES	NO
Years	2008	1990-2012	1990-2012	1990-2012
Countries	17	17	17	17

Sample: EU-countries. Instrument: the rigidity of the constitution. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Table A.4.10: Estimation results of constitutional commitment to social security (CCSS) on total social expenditure: interaction with politics

	(1)	(2)	(3)	(4)	(5)
CCSS	4.394**	2.399***	2.229***	4.715	3.201***
	(1.655)	(0.595)	(0.819)	(2.982)	(1.081)
Government left	0.030	0.002	−0.000	0.027	0.002
	(0.020)	(0.003)	(0.003)	(0.026)	(0.007)
Government left*CCSS	−0.062*	−0.004	−0.000	−0.029	0.012
	(0.029)	(0.004)	(0.003)	(0.040)	(0.010)
CCSS	−1.105	2.117***	2.370***	1.272	1.997**
	(1.251)	(0.608)	(0.834)	(1.558)	(0.942)
Government right	−0.040**	−0.005	0.002	−0.040***	−0.041***
	(0.0146)	(0.003)	(0.003)	(0.0148)	(0.007)
Government right*CCSS	0.084***	0.004	−0.003	0.031	0.035***
	(0.020)	(0.004)	(0.004)	(0.024)	(0.010)
CCSS	3.564**	2.197***	2.145***	3.006***	3.507***
	(1.159)	(0.668)	(0.825)	(0.926)	(0.782)
Government center	0.034	0.002	−0.007	0.064***	0.077***
	(0.038)	(0.007)	(0.006)	(0.016)	(0.011)
Government center*CCSS	−0.086	0.006	0.012*	−0.068***	−0.084***
	(0.048)	(0.008)	(0.007)	(0.020)	(0.012)
Year dummies	No	Yes	Yes	Yes	Yes
Method	OLS	OLS	OLS	2SLS	Heckman
Standard errors	Robust	PCSE	PCSE	Robust	Robust
AR(1) component	NO	YES	YES	NO	NO
Years	2008	1990-2012	1990-2012	1990-2012	1990-2012
Countries	17	17	17	17	17
Observations	17	381	359	381	381

Sample: EU-countries. Instrument: the rigidity of the constitution. * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.