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

Emile Cammeraat[1]

[1]Leiden University
E-mail: e.cammeraat@law.leidenuniv.nl

September 15, 2017, EALE, London

Brief overview

- I study the effect of Constitutional Commitment to Social Security (CCSS) on different kinds of social expenditure
- I employ OLS, 2SLS and the Heckman two step model, with the rigidity of the constitution as instrument
- Main findings:
  - Positive effect on total social expenditure and on all four categories of social security spending
  - Most sizable effects on spending on unemployment and Active Labor Market Policies (ALMPs).
- Explanations:
  - Political decision making and CCSS are substitutes
  - Constitutions protect minorities

Does the Dutch constitution contain a provision on social security?

Article 20 of the Dutch constitution

- Article 20:
  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.

Constitutional Commitment to Social Security (CCSS)

- Indicator of Ben-Bassat and Dahan (2008)
- 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

Literature: Theoretical predictions

- Interest group perspective (Landes and Posner, 1975)
  - Value constitution explained by sustainable character
- Interdependent Cost Calculus (Buchanan and Tullock, 1962)
  - Trade-off between external cost and decision making cost
- Median Voter Theorem (Black, 1948)
  - Unemployed are a minority
  - Blekesaune and Quadagno (2003) and Van Oorschot (2006) show that the public perceives the unemployed as less deserving than the old and disabled

Literature: Empirical findings

- Positive relation between CCSS and government transfers and between CCSS and the extent and coverage of actual measures of social security law (Ben Bassat and Dahan, 2008, 2016)

Endogeneity: problems and solutions

- Problem: CCSS represents social and political preferences, which have a deeper cause in history, culture and religion
- Reduce the problem:
  - No clear pattern between CCSS and groups of countries
  - Selection of more homogeneous EU-countries
  - Control for legal origin
  - 2SLS model with the rigidity of the constitution as instrument to correct for endogeneity
  - No positive effect on expenditure on health and family

Empirical specification

$$y_{it} = \alpha_t + \gamma CCSS_{it} + X'_{it}\beta_x + \epsilon_{it}. \quad (1)$$

$$CCSS_{it} = \alpha_t + \delta Z_{it} + X'_{it}\beta_x + \mu_{it} \quad (2)$$

- y_{it} = outcome variable (Social expenditure schemes)
- α_t = year fixed effects
- X'_{it} = controls (old age dependency ratio, GDP per capita)
- $CCSS_{it}$ = constitutional commitment to social security
- Z_{it} = rigidity of the constitution
- ϵ_{it} = error term (Robust or PCSE)

$$Prob(CCSS_{it} = 1|Z_{it}, X'_{it}) = Prob(-\mu_{it} < \theta Z_{it} + \nu_x X'_{it}) \quad (3)$$

$$\begin{aligned} y_{it} = \alpha_t + \gamma CCSS_{it} + X'_{it}\beta_x + \rho\sigma_\epsilon \Bigg[& CCSS_{it} \frac{\phi(\widehat{\theta} Z_{it} + \widehat{\nu}_x X'_{it})}{\Phi(\widehat{\theta} Z_{it} + \widehat{\nu}_x X'_{it})} \\ & -(1 - CCSS_{it}) \frac{\phi(\widehat{\theta} Z_{it} + \widehat{\nu}_x X'_{it})}{1 - \Phi(\widehat{\theta} Z_{it} + \widehat{\nu}_x X'_{it})} \Bigg] + \epsilon_{it}. \end{aligned} \quad (4)$$

where

$$\epsilon_{it} \sim N(0, \sigma_\epsilon)$$
$$\mu_{it} \sim N(0, 1)$$
$$\rho = \frac{cov(\epsilon, \mu)}{\sigma_\epsilon}$$

Data

- Indicator of CCSS (Ben-Bassat and Dahan, 2008)
- OECD database for social expenditure (SOCX)
- Rigidity of the constitution (Lorenz, 2005)
- 17 EU-countries within OECD
- Years: 1990-2012
- Outcome variables: 1) Total social expenditure
  2) Expenditure on old age and survivor, incapacity, unemployment, ALMPs, health and family

Data: differences in means for the different social expenditure schemes

	Countries with CCSS	Countries without CCSS	Differences in Means	Differences relative to Countries without CCSS
Total social expenditure	23.497	21.971	1.525	6.943
Old age and Survivor	9.293	9.480	0.187	−1.973
Incapacity	3.146	2.437	0.709	29.092
Unemployment	1.495	0.848	0.647	**76.334**
ALMPs	0.903	0.479	0.424	**88.445**
Health	5.630	5.835	-0.205	−3.520
Family	2.220	2.132	0.089	4.167

Sample: EU-countries in the years 1990-2012

Estimation results of 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)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Extra controls	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
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.

Estimation results of 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)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Extra controls	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
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.

Estimation results of 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)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Extra controls	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
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.

Estimation results of 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)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes
Extra controls	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
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.

Estimation results of CCSS on total social expenditure

	(1)	(2)	(3)	(4)	(5)	%Δ
CCSS	1.990*	2.198***	2.261***	3.053***	**3.763*** **	**17%**
	(1.099)	(0.664)	(0.862)	(0.939)	(1.015)	
Baseline controls	Yes	Yes	Yes	Yes	Yes	
Year dummies	No	Yes	Yes	Yes	Yes	
Extra controls	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	
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.

First stage results

	(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**

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

CCSS on different social expenditure schemes

	(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)	
Unemployment	0.475	0.757***	0.797***	2.122***	2.107***	248%
	(0.290)	(0.195)	(0.187)	(0.351)	(0.098)	
ALMPs	0.282**	0.427***	0.479***	0.492***	0.475***	99%
	(0.100)	(0.074)	(0.073)	(0.110)	(0.067)	
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)	
Incapacity	0.684	0.681***	0.736***	0.784**	0.691**	28%
	(0.433)	(0.243)	(0.219)	(0.329)	(0.343)	
Health	−0.066	0.055	0.004	−0.030	0.056	1%
	(0.375)	(0.223)	(0.335)	(0.237)	(0.145)	
Family	−0.063	0.119	0.218	−2.303***	−1.684***	-79%
	(0.404)	(0.160)	(0.203)	(0.409)	(0.0742)	
Method	OLS	OLS	OLS	2SLS	Heckman	

Cluster-robust standard errors in parentheses, clustered at year of birth (23 clusters), * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

CCSS on different social expenditure schemes

	(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)	
Unemployment	0.475	0.757***	0.797***	2.122***	**2.107*** **	**248%**
	(0.290)	(0.195)	(0.187)	(0.351)	(0.098)	
ALMPs	0.282**	0.427***	0.479***	0.492***	**0.475*** **	**99%**
	(0.100)	(0.074)	(0.073)	(0.110)	(0.067)	
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)	
Incapacity	0.684	0.681***	0.736***	0.784**	0.691**	28%
	(0.433)	(0.243)	(0.219)	(0.329)	(0.343)	
Health	−0.066	0.055	0.004	−0.030	0.056	1%
	(0.375)	(0.223)	(0.335)	(0.237)	(0.145)	
Family	−0.063	0.119	0.218	−2.303***	−1.684***	-79%
	(0.404)	(0.160)	(0.203)	(0.409)	(0.0742)	
Method	OLS	OLS	OLS	2SLS	Heckman	

Cluster-robust standard errors in parentheses, clustered at year of birth (23 clusters), * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

CCSS on different social expenditure schemes

	(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)	
Unemployment	0.475	0.757***	0.797***	2.122***	2.107***	248%
	(0.290)	(0.195)	(0.187)	(0.351)	(0.098)	
ALMPs	0.282**	0.427***	0.479***	0.492***	0.475***	99%
	(0.100)	(0.074)	(0.073)	(0.110)	(0.067)	
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)	
Incapacity	0.684	0.681***	0.736***	0.784**	**0.691** **	**28%**
	(0.433)	(0.243)	(0.219)	(0.329)	(0.343)	
Health	−0.066	0.055	0.004	−0.030	0.056	1%
	(0.375)	(0.223)	(0.335)	(0.237)	(0.145)	
Family	−0.063	0.119	0.218	−2.303***	−1.684***	-79%
	(0.404)	(0.160)	(0.203)	(0.409)	(0.0742)	
Method	OLS	OLS	OLS	2SLS	Heckman	

Cluster-robust standard errors in parentheses, clustered at year of birth (23 clusters), * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

CCSS on different social expenditure schemes

	(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)	
Unemployment	0.475	0.757***	0.797***	2.122***	2.107***	248%
	(0.290)	(0.195)	(0.187)	(0.351)	(0.098)	
ALMPs	0.282**	0.427***	0.479***	0.492***	0.475***	99%
	(0.100)	(0.074)	(0.073)	(0.110)	(0.067)	
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)	
Incapacity	0.684	0.681***	0.736***	0.784**	0.691**	28%
	(0.433)	(0.243)	(0.219)	(0.329)	(0.343)	
Health	−0.066	0.055	0.004	−0.030	**0.056**	**1%**
	(0.375)	(0.223)	(0.335)	(0.237)	(0.145)	
Family	−0.063	0.119	0.218	−2.303***	**−1.684*** **	**-79%**
	(0.404)	(0.160)	(0.203)	(0.409)	(0.0742)	
Method	OLS	OLS	OLS	2SLS	Heckman	

Cluster-robust standard errors in parentheses, clustered at year of birth (23 clusters), * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.

Robustness Checks

- EU plus Norway, Switzerland and Iceland
- OECD excluding Japan and Korea
- Period before Great Recession (1990–2008)
- Highest and lowest values of rigidity standardized
- CCSS as non-dichotomous variable
- Interaction with politics

Conclusions

- Main findings:
  - Positive effect on total social expenditure and on all four categories of social security spending
  - No positive effect on expenditure on health and family
  - Most sizable on unemployment and ALMPs
  - Effect size increases when we control for endogeneity
- Explanations:
  - Political decision making and CCSS are substitutes
  - Constitutions protect minorities, which is in line with the Interdependent Cost Calculus.

CCSS on different social expenditure schemes

	(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	
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	
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	
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	
Method	OLS	OLS	OLS	2SLS	Heckman	

Cluster-robust standard errors in parentheses, clustered at year of birth (23 clusters), * denotes significant at the 10% level, ** at the 5% level and *** at the 1% level.