The Public Economy in the age of Globalization: Cameron revisited – Why again?

Abstract
After World War II the scope of western public sectors expanded significantly. Rapidly growing international economic integration in the 1980s has cast doubt on the sustainability of broad government involvement in the economy. In contrast, public sectors are rather retrenching in the face of globalization challenges. This paper first reexamines Cameron's (1978) multiple regression model on the reasons for expanding public sectors in 18 OECD economies between 1960 and 1975. It initially confirms his results and also Rodrik's (1997, 1998) claim that increasing openness to international trade induces governments to increase expenditure in order to counter rising external dependency. Furthermore, the results confirm the hypothesis that this policy path is more likely when left parties are in power. Secondly, this paper extends Cameron's study by using panel data for the same 18 nations between 1960 and 2006. By applying a fixed effects model, the paper finds contradictory results on the effects of trade on government expenditure. The ratio of Imports and Exports to GDP has an inverse relationship to the scope of the public sector and therefore strongly confirms the economic argument that governments retrench the public sector in the face of globalization.

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I. Introduction

In the decades following World War II - often deemed to be the *golden age* of the Western Welfare State - the scope of the public sector[2] in advanced capitalist economies increased dramatically. Otherwise, since the late 1980s this increase has nearly come to an halt, which is often brought into relationship with the challenges resulting from economic globalization.

This empirical puzzle is: which variables determine the size of the public sector and which particular impact does globalization have on the evolution of the size of government? I first review the comparative study, in which Cameron (1978) tested the impact of globalization[3] and domestic forces for 18 OECD countries[4] between 1960 and 1975 by applying first-differences[5]. Secondly, in an extension of the study, I test his hypotheses on the basis of a panel and extend the observation period to 2006 by using a fixed effects regression model[6]. By that, I

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[2] The scope of the public economy is defined as the share of general government receipts on the gross domestic product. It can be criticized that this indicator understates the size of government in countries that run a deficit.
[3] The impact of economic globalization is operationalized by the trade openness of a country, which is measured as the ratio of the sum of exports and imports of goods and services to GDP.
[4] These countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, United States.
[5] By first differences Cameron means the difference between the values of the first and the last observation in the sample observation period.
[6] For a brief overview on fixed effects regression see: Stock and Watson (2005): Chapter 10

can confirm Cameron's result on the (1) positive and significant correlation of the initial level of trade openness and the expansion of the public sector; and (2) the positive and significant correlation of left party participation in central government with the change in government receipts.

In my own model, however, I find a (1) negative correlation between the openness of the economy and the scope of the public sector. The result also holds for several socio-economic and political control variables. This result goes along with recent findings (Liberati 2007) and supports the argument of retrenching public sectors under the stress of economic globalization.

The paper is organized as follows. In section II, I outline theoretical approaches that can account for the level of state expenditure and derive hypotheses to be tested. In section III, I present the methodology, the model used by Cameron and my extension of it. Section IV presents the results of the replication with the original as well as the extended dataset and my own model on the impact of economic openness on government receipts. Moreover, policy consequences are addressed. Part V concludes and provides an outlook for future research.

II. Theories on the scope of the public sector

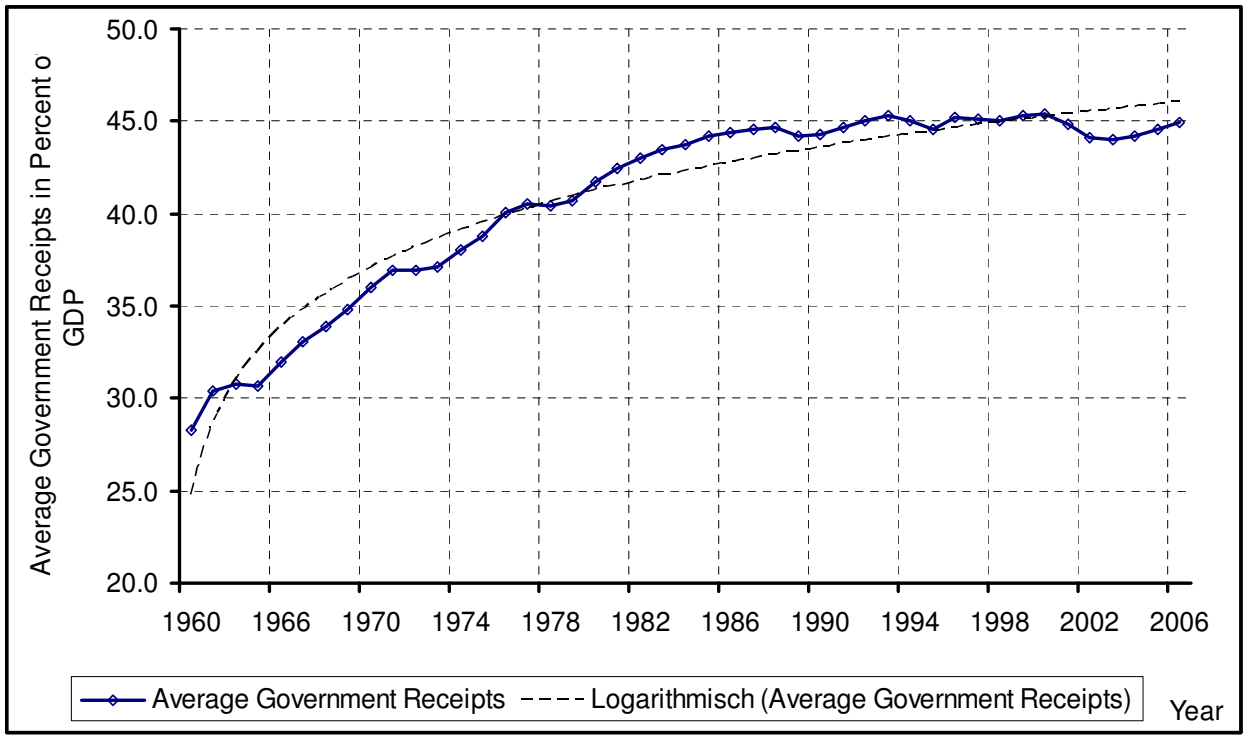
In line with Cameron the public sector is defined as the total of general government revenues extracted on all administrative levels in a nation (1978: 1244). Included are all forms of taxes, social insurance contributions and other sources of revenues. I use the OECD wide applied indicator general government receipts to measure the dependent variable size of public sector. These revenues are expressed as a fraction of GDP in order to control for the size of the economy. In order to provide comparability over the reference study and my own, I use this indicator to measure the proportion of GDP consumed and distributed by governments[7].

A slowdown followed after the rapid increase of the size of the public sector among western capitalist economies until the mid-1980s. As a result, the growth of the share of public expenditure on the GDP almost came to a halt. Figure 1 shows this development of average government receipts over time. Since the mid-1980s, the ratio of government receipts to GDP

[7] Cameron (1978: 1244) uses the argument that in the long-run government receipts and revenues equal out, so that both are similar indicators for the public sector. However, this claim neglects the fact that deficit spending has been a widely used source of government revenues, which is not covered by the receipts indicator. On the other hand, the indicator used here is more stable.

only varies slightly. After the year 2000 a significant retrenchment seems to start, but is reversed by 2004. However, the period of government budget expansion stopped in the 1980s.

Figure 1: The average scope of the public sector in 18 OECD countries over time



Theories that account for the variation in government receipts can, according to Cameron, be grouped into five categories, each providing independent explanatory power.

In his original study he tests each theory separately. One approach Cameron applies is the hypothesis of internationally affected levels of government expenditure. As he finds a major impact of economic openness[8] on the scope of the public economy, I will focus on this determinant in my own model later on, while controlling for various socio-economic and political variables. Cameron (1978: 1250-52) argues that with an increasing participation in international trade in goods and services, countries are more exposed to the pressures of the international economic environment. Unemployment becomes dependent on aggregate demand in world market. Therefore, national demand management policies become less effective. Even in a perfectly competitive economy with full employment, the state should compensate losers by income transfers, at least in theory. Transfers smooth out the immediate impact of international

[8] Economic openness is operationalized by the indicator trade share, which is the ratio of the sum of exports and imports of goods and services to the GDP.

business cycles (Lindbeck 1975: 56) and thereby increase the scope of the public sector *ceteris paribus.*

This analysis gives rise to the following hypothesis:

(H1): There is a positive relationship between the degree of openness of the economy, measured by the trade share and the scope and expansion of government expenditure.

The argument that governments increase public expenditure in order to compensate domestic losers of globalization is widely known as *compensation hypothesis* (Rodrik 1998). However, there also exists an opposite argument in economic theory, summarized as *efficiency hypothesis,* which claims an inverse relationship between openness of the economy and the scope of the public sector. There is deadweight loss associated with government intervention that if eliminated would cause efficiency to increase, but if trade is to be Pareto optimal, the winners must be able to compensate the losers and still be better off. Thus in order for trade to be efficient, government must intervene to redistribute side payments to those who are made worse off by the policy. Taken together, the two arguments suggest an ambiguous relationship between trade and the size of the public sector.

Proponents of the efficiency hypothesis emphasize the importance of foreign direct investment (FDI) as an indicator for trade openness in order to underline their argument that an increasingly mobile tax base undermines the capability of governments to extract resources and therefore reduces the size of the public sector. Indeed, FDI has gained importance as a share of GDP during the 1990s just as trade did three decades earlier. Therefore its possible impact should be used as indicator of economic openness (Liberati 2007). I take this argument into consideration by controlling for capital mobility in the panel regression model with an expected negative sign.

Hence with increased capital mobility, government should shrink and along with it, deadweight loss. But as trade and foreign investment disrupts local labor markets, governments might feel obliged to raise transfers and the taxes to pay for them. Thus, on theoretical grounds, the predicted size of the public sector could go either way.

In the following, I introduce domestic political, institutional and economic variables that are tested by Cameron independently. In my own specification, I also control for socio-economic and political variables in order to avoid omitted variable bias.

A very common theory to be tested for the increase of the financial scope of governments is Wagner's "law of expanding state activity" (1883: 1-8). His basic argument is that with increasing general wealth of a society, there is a rising demand for public goods such as infrastructure. Contrarily to that view Wildavsky (1975: 232-5) points out that in case of high economic growth, additional demand for public spending can be met with a constant share of the GDP; i.e. in case of rapidly increasing economic wealth relatively less compensation of losers from open trade is necessary. That leads to the following hypothesis:
(H2) There is a negative relationship between economic growth and the expansion the of government receipts as a share of GDP.

The next theory applied by Cameron (1978: 1246) claims that the nature of the fiscal system in a country determines the level of revenue that can be raised (Buchanan/Wagner 1977). In theory, the government should only be able to extract sufficient funds to provide public goods but in reality it can create a fiscal illusion through an opaque taxation system.
(H3) The public sector is larger in countries whose receipts rely on less perceptible forms of extraction such as social security contributions and indirect taxes.

The fourth explanation offered by Cameron is electoral politics (Cameron 1978: 1246-8). The political business cycle theory argues that incumbents are likely to expand the share of the public sector in order to secure voter support in the next elections (Tufte 1978). A further line of argument in electoral politics concerns the effect of ideological orientation of governments on public policy outputs. Hibbs (1977) claims that political parties make a significant difference. As workers and low income groups are the core clientele of social democratic and other leftist parties, these parties are more favorable towards increased redistributive policies.
(H4) Countries with higher participation rates of left parties in government and more frequent general elections are expected to have higher growth rates of public expenditure.

The fifth set of factors explaining the scope of the public sector are national institutional characteristics. Cameron (1978: 1248-49) claims that institutional arrangements that exhibit several autonomous bureaucracies and therefore fragmented spending favor the expansion of the public sector. This arrangement is exemplified by a federalist state organization. As unitary states can more easily control government receipts, Cameron expects that unitary states are

therefore likely to exhibit a smaller scope of government. The same should be true for a higher degree of fiscal centralization.

In the remainder of this paper, I will argue differently. As federalism is one of several institutional features that constrain public policy options of the central government, unitary countries are expected to have a higher level of public expenditure than federal countries. As the degree of fiscal centralization necessarily is a result of the institutional structure of the state, I do control for several institutional barriers to policy-making in my own specification. This argument leads to the following hypothesis.

(H5) Countries with more institutional barriers to policy change, such as federalism, are expected to have a lower level of government expenditure.

If all five of these hypotheses are confirmed, the highest level of government receipts should be found in a unitary country with only a few institutional barriers *(H5),* a high trade share *(H1),* low growth rates of the economy *(H2),* a prevalence of indirect taxation *(H3)* and frequent elections in which left parties often succeed *(H4).*

III. Model and Methods applied

In this paper, I use the same sample of 18 OECD countries as Cameron (1978) in order to maximize comparability. Initially, observations are drawn from the years 1960 to 1975. Secondly, in the extension and modification of the model the observation period is extended to 2006. Based on these panel data, I also set up a time and entity fixed effects model in order to control for effects that vary over the examined entities but are constant over time (Stock and Watson 2005: 316-323). Thirdly, in my own specification I emphasize on the impact of economic openness on government receipts, but nevertheless control for domestic political and economic variables.

Two models explaining government receipts

Following Cameron, I apply general OLS and regress the same variables he uses on the difference in the ratio of government receipts to GDP from 1960 and 1975 ($Gvtrecpt_{\Delta 7560}$)[9]. In

[9] Data for *gvtrecpt* are obtained from the Comparative Political Data Set 2006 (CPDS) for the years between 1970 and 2006. For the period 1960-69, I obtained data from various OECD publications. Data for the years 1961 and 1962 are missing (1982): Economic Outlook 1960-1980 (Tab.6.5), National Accounts 1963-1980 Vol2. (Tab 1-8,9-12) Current receipts (Tab 9) were divided by the GDP at current prices (Tab 1).

each regression I also control for the level of state expenditure in 1960 (*Gvtrecpt60*). The following equation presents the baseline model, where β_2 and β_3 are the regressors to assess the impact of the change in trade share between 1960 and 1975 $(Trdshr_{\Delta 7560})$ on the scope of the public sector *(H1).* In order to avoid overestimating high increases in trade share that due to a low initial level, I control for the level of trade share in 1960 *(Trdshr60).*

$$Gvtrecpt_{\Delta 7560} = \beta_0 + \beta_{1*} Gvtrecpt60 + \beta_{2*} Trdshr60 + \beta_{3*} Trdshr_{\Delta 7560} + u_i \qquad (1)$$

Likewise, I test hypotheses *(H2)-(H5)* with this baseline model by substituting x_2 and x_3 according to the propositions. Additionally, I follow the procedure Cameron pursues by combining the respectively "strongest" coefficients in a combined regression[10].

The extension to 2006 of the Cameron model by using panel data with time and entity fixed effects is given by

$$Gvtrecpt_{it} = \beta_0 + \beta_{1*} Gvtrecpt60_i + \beta_{2*} Trdshr_{it} + \beta_{3*} Trdshr60_i + \beta_{4*} Country\_dum_{it} + \beta_{5*} Year\_dum_{it} + u_{it} \qquad (2)$$

Equation (2) tests hypothesis *(H1).* By substituting x_2 and x_3, hypotheses *(H2)-(H5)* are tested accordingly. In this model I create entity and time dummy variables in order to control for unknown variables over time and entities. The dependent variable changes in so far, as I do not apply the difference in government expenditure from 1960 and 1975. Instead, I regress the determinants on the actual ratio of government receipts divided by GDP.

The impact of economic openness on the size of the public sector

In my own specification, I again regress government receipts $(Gvtrecpt_{it})$ on the openness of the economy $(Trdshr_{it})$ with the following baseline equation. By using dummy variables for countries and years I control for unobserved factors over time and space.

$$Gvtrecpt_{it} = \beta_0 + \beta_{3*} Trdshr_{it} + \beta_{1*} Country\_dum_{it} + \beta_{2*} Year\_dum_{it} + \sum(Z_{it}) + u_{it} \qquad (3)$$

After testing this base specification, I control for additional variables $(\sum(Z_{it}))$ that – according to the above outlined theoretical framework – have an impact on the level of government receipts.

For Switzerland data for the years 1980-89: OECD (1992): Economic Outlook Historical Statistics 1960-1990

[10] He calculated the beta-values of all regressors and chose on that basis which variables to include in the combined regression, what is a doubtable procedure.

For institutional variation I use an index of institutional constraints for policy-making by central governments *(Instcons)*[11]. According to the above outlined argument that fast growing economies can satisfy the public demand for the compensation of economic losers by a smaller fraction of their GDP, I also control for the impact of economic growth on the level of government receipts. As lawmakers by definition also have an impact on the level of government expenditure, I account for the ideological orientation of governments by measuring the participation of left parties in government *(Govleft).* As there are theoretical and empirical arguments for a higher trade share in small countries (see Cameron 1978: 1249-50), I account for this factor by controlling for the size of the population. As trade share does not cover capital movements I avoid possible bias by adding the respective ratio of FDI net outflows to GDP. Last but not least I include the unemployment rate to account for this economic source of government expenditure variation[12].

IV. Results and Policy Consequences

a. Results of the 1960-75 Period

Table 1 presents results of the replication of Cameron's study of the period 1960 – 75, which turn out to be similar (1978)[13]. Testing hypothesis *(H1)* through *(H5)* individually with the respective forms of equation (1), the multiple regressions yield two significant determinants of the growth in the scope of the public sector: First, the coefficient in regression (1) shows that the level of trade in goods and services in 1960 has a positive relationship with the growth of public expenditure. This positive correlation is also displayed in Figure 2.

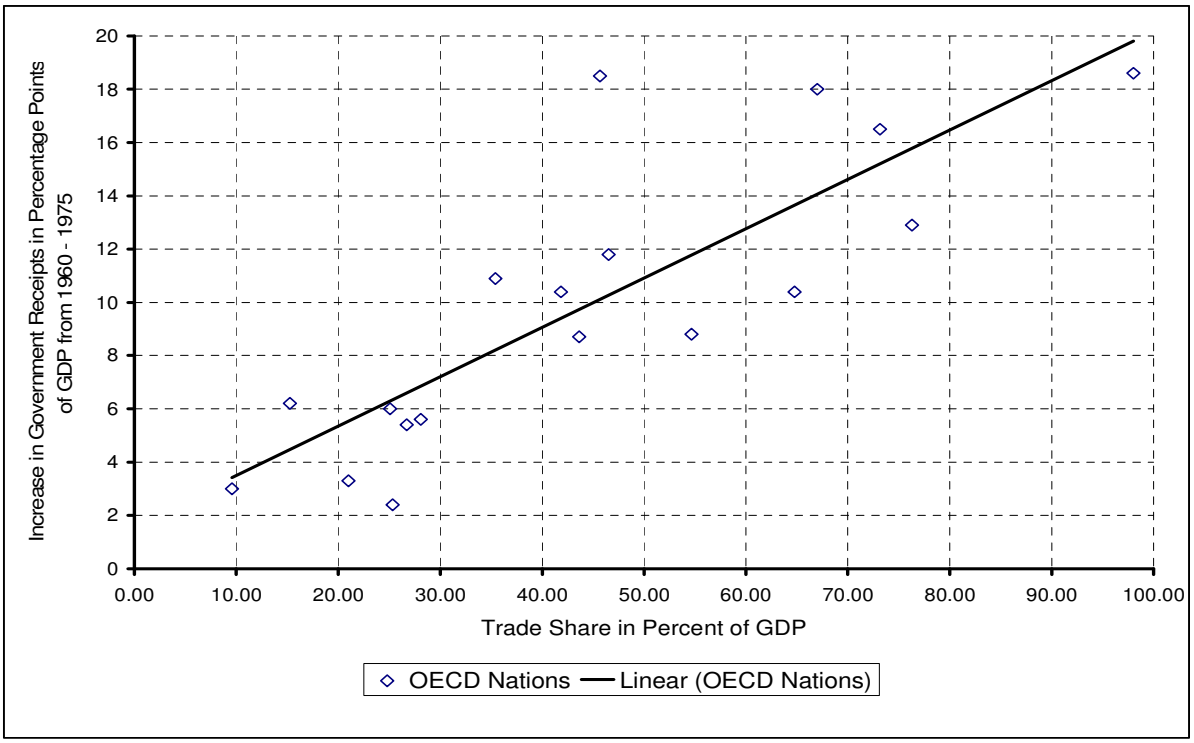
The changes of trade share and government receipts from 1960 to 1975, however, are negatively correlated, even though not significantly. As for all other specification, the initial level of government receipts has been held constant. The coefficient of the trade share in 1960 only shows a fairly strong impact (0.176) on the growth of the public sector. In sum, Cameron's first hypothesis (*H1*) can only be partially strongly confirmed, based on this sample and methodology.

[11] Data are taken from Comparative Political Data Set (CPDS). This additive indicator ranging from 0 to 5 is the sum of six dummy variables that account for EU membership, federalism, strong bicameralism, difficulty of amending the constitution, central bank autonomy and frequent referenda.

[12] Data are taken from the CPDS, with the exception for FDI net outflows that are drawn from the World Bank's World Development Indicators.

[13] For original regression results see: Cameron (1978): 1252.

Figure 2: Trade Share 1960 and the Growth of the public sector between 1960 and 1975



The second significant correlation is displayed in regression (4). It shows that hypothesis *(H4)* on the expanding impact of left party government participation on receipts can be strongly confirmed at a 5% significance level. The coefficient seems to be small in size, but comparing a country with a conservative to a country with an entirely leftist government, the latter country is estimated to have a higher level of government receipts by 11 percentage points. The claim about rising expenditures in case of frequent elections can also be weekly confirmed.

Regression (2) displays the results of testing hypothesis *(H2)* about the negative relationship between economic growth and government revenues. Regression outcomes weakly contradict this proposition, as there is almost no linear relationship between the independent and the scope of the public sector.

Regression (3) demonstrates that hypothesis (*H3)* of an expansionist impact of the "fiscal illusion" can be weakly contradicted. The result – however not significant – predicts a decrease in governments expenditure, when government receipts rather rely on indirect taxes and social security contributions instead of direct taxes.

Regression (5) weakly confirms the hypothesis *(H5)* that the institutional constraint federalism works restricting on government expenditure. This finding is supported by the positive correlation between the degree of fiscal centralization and the scope of the public sector.

However, the coefficients are not even significant on a 10% level of significance. Thus, regressions (2), (3) and (5) yield no significant correlations. Only regression (1) and (4) demonstrate significant results in favor of the respective hypotheses and pass the *F*-test.

Table 1 : Replication of Cameron's regression results on the determinants of the expansion of the public sector

Dependent Variable:	**Government Receipts as Percentage of GDP**					
Regressor	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Government Receipts 1960	0.133	0.31	0.450*	0.0883	0.472**	0.0477
	0.17	*0.34*	*0.24*	*0.31*	*0.22*	*0.15*
Trade share 1960	**0.176*** **					**0.154*** **
	0.024					*0.021*
Increase of trade share 1960-75 in percentage points	-0.0787					
	0.074					
GDP per capita 1960		-0.617				
		0.95				
Average growth of GDP, 1960-75 in %		0.000164				0.263
		0.00035				*0.51*
% of government revenues from indirect taxes and Social Security Payments 1960			-0.178			-0.0762
			0.1			*0.053*
% increase of government revenues from indirect taxes and Social Security Contributions 1960-75			-0.0674			
			0.19			
Left parties in government 1960-75 in %				**0.114** **		**0.0704** **
				0.041		*0.028*
Number of national legislative elections 1960-75				0.429		
				0.64		
Federalism dummy					-0.797	
					2.72	
Central government share of all receipts 1960					0.152	0.0316
					0.12	*0.053*
Constant	-0.984	2.407	8.247	2.312	-12.95	1.363
	4.55	*14*	*9.67*	*6.9*	*10.8*	*7.43*
R^2	0.71	0.17	0.28	0.43	0.25	0.87
R^2 adjusted	0.65	0	0.12	0.31	0.09	0.80
F-Test	22.78	2.64	2.23	8.70	1.92	22.74
Prob > *F*	0.000	0.09	0.1296	0.0017	0.1726	0.00

Standard errors in Italics; n=18; Levels of significance: *** at the 1% level, ** 5% level and * 10% level.

Regression (6) displays the replication of Cameron's combined regression using the "strongest" coefficients, which is a methodologically rather doubtable procedure. It includes variables for all five hypotheses. The initial level of trade openness 1960 and the ideological orientation of governments remain viable predictors of the change in government receipts. Even

though, no other indicator becomes significant, the model yields a very high determination coefficient (R^2 *adj.* = 0.80) and has an *F*-value of 22.74. Nevertheless, Cameron's final specification (6) has to be criticized, as it is a stepwise regression. Moreover, he justifies the choice of the variables with the level of the higher standardized regression (beta) coefficient in each single test (Cameron 1978: 1254). This is the reason for that some variables have been left out in regression (6).

b. Results of the period from 1960 to 2006

By using panel data for the years from 1960 to 2006 I reexamine Cameron's hypotheses and assess whether his findings are also applicable for a longer period. In equation (2), I measure the size of the public sector by the actual level of government receipts with respect to GDP. This alters the specification in equation (1), in which the dependent variable is understood as a change in government receipts from 1960 to 1975. Table 2 shows the test for hypothesis *(H1)* of an increasing public sector as reaction to deepening international economic integration.

Table 2: The impact of economic openness on government receipts

Dependent Variable:	**Government Receipts as Percentage of GDP**		
	(1)	(2)	(3)
Regressor	Pooled OLS	Entity Fixed Effects	Time & Entity Fixed Effects
Government Receipts 1960	1.099***	0.612***	0.653***
	0.052	*0.058*	*0.039*
Trade share	0.133***	0.219***	-0.0547***
	0.018	*0.022*	*0.016*
Trade share 1960	-0.0358	-0.130***	0.0920***
	0.023	*0.022*	*0.015*
Constant	3.370**	14.73***	26.10***
	1.45	*1.91*	*1.54*
Observations	773	773	773
R^2	0.48	0.73	0.91
R^2 adjusted	0.48	0.73	0.90
F-Test	262.67	201.75	182.08
F-Test *H0*: fixed effects=0	--	49.9	59.75
Entity fixed effects	no	yes	yes
Time fixed effects	no	no	yes

Standard errors in Italics; Levels of significance: *** at the 1% level, ** 5% level and * 10% level.

Regression (1) uses pooled OLS, that is panel data without time and entity effects, and thereby strongly confirms the hypothesis that increased economic openness is associated with a higher level of government receipts. This conclusion can also be maintained when in regression (2) it is controlled for country fixed effects, i.e. non-observed variables that vary over entities but

are constant over time. The *F*-test for the joint hypothesis that fixed effects are significant yields a sufficiently high value of 49.9 to reject the null hypothesis that there is no such relationship.

In regression (3) I additionally control for time fixed effects, i.e. omitted factors that influences all countries but vary over time. Indeed, this approach results in an opposite finding. While the coefficient for the initial level of government receipts 1960 still results in a positive significant sign, the effect of increased economic openness is reversed. Although the coefficient is less strong than before, Cameron's hypothesis (*H1*) is robustly rejected. An increased level of trade share leads to declining government expenditure. Apparently, economic globalization results in fiscal pressure on the nation state which is less capable of extracting the same amount of financial resources. The null hypothesis that entity and time fixed effects have no explanative power can be rejected (*F*-value 59.75).

As time and entity fixed effects have a high impact on the results of the re-examination, I control for them when revising the other hypotheses, too. Table 3 shows the results of testing hypotheses *(H2-H5)* using the fixed effects model.

In contrast to the initial result, regression (4) shows that hypothesis *(H2),* which claims a negative correlation of economic growth and the scope of the public economy can be strongly confirmed. Slowly growing industrialized countries in tendency feature a higher level of government expenditure, as more dynamic economies can meet public demands for an increase in expenditure by a constant share of GDP.

Regression (5) weekly confirms hypothesis *(H3)*. Countries that rather rely on government revenues from social security contributions and indirect taxation show a tendency toward a greater scope of the public sector, because this way of extracting funds is more opaque ("fiscal illusion") and therefore harder to observe and criticize for the demos. However, inference is very limited, as the coefficient does not pass the 10% significance threshold and is additionally very small.

In contrast to Cameron's findings, I cannot to confirm hypothesis *(H4)* of an expansionist influence of leftist parties on state budgets, shown in regression (6). This result is particularly interesting, as leftist government still have the reputation of increasing the scope of government when they come to power. The same direction of correlation has been estimated for the influence of a high frequency of legislative elections. Countries with more frequent elections during the period from 1960-2004 have significantly lower levels of government expenditure.

A rather contradictive result emerges in regression (7), which tests the hypothesis of the expenditure limiting influence of federalism and regional control over funds. On the one hand, federalism is estimated to exert an expansionist influence on the size of the public sector. On the other hand, the same positive correlation is estimated for a higher share of central government receipts as a fraction of general government revenues. As both coefficients are significant, either theoretical claims or validity of the indicators have to be reconsidered.

Table 3: Domestic determinants of the size of the public sector – time and entity fixed effects

Dependent Variable	**Government Receipts as Percent of GDP**			
Regressor	(4)	(5)	(6)	(7)
Government Receipts 1960	0.877***	0.827***	0.895***	0.570***
	0.027	*0.035*	*0.03*	*0.052*
GDP per capita 1960	-0.000368***			
	0.000035			
Growth of GDP in %	-0.385***			
	0.068			
% of government revenues from indirect taxes and Social Security Contributions 1960		-0.0860**		
		0.039		
% of government revenues from indirect taxes and Social Security Contributions		0.00318		
		0.0086		
Left parties in government 1960 to 2004 in %			-0.000983	
			0.0034	
Number of legislative elections 1960-2004			-0.740***	
			0.057	
Central government share of receipts 1960				0.160***
				0.025
Federalism dummy				1.745***
				0.57
Constant	8.046***	27.13***	25.07***	14.97***
	1.88	*2.79*	*1.53*	*2.41*
Observations	752	767	767	754
R^2	0.92	0.91	0.91	0.91
R^2 adjusted	0.91	0.91	0.90	0.90
F-Test	163.1	200.05	184.97	490.54
H0: fixed effects=0	66.69	85.84	74.08	130.35

Standard errors in Italics; Levels of significance: *** at the 1% level, ** 5% level and * 10% level.

In sum, testing hypothesis *(H1)-(H5)* in an extended panel yields rather different findings. Only inverse relationship between economic growth and government receipts (*H2)* can be strongly confirmed. All other hypotheses have a least been weakly rejected. The most striking difference is the revealed inverse correlation of economic openness and the level of government receipts *(H1).* Therefore, in the following section, I take a closer look on the relationship between trade share and government receipts. I do that by not only controlling for entity and time fixed effects, but also I do control for possibly omitted socio-economic and political variables.

c. The impact of economic openness on the scope of the public sector

In this third section on the regression results I examine my own specification from equation (3). The impact of economic openness is measured by the trade share and its influence on the size of the public sector. Table 4 gives the regression results. Regression (1) displays a positive significant relationship between trade share and the level of government receipts. By adding *entity* fixed effects in regression (2), this results remains viable and support Cameron's findings.

However, when *time* fixed effects are additionally included in regression (3), the coefficient changes the sign and is again significant. Thus, there is an external effect that overall affects the countries at a certain point of time. Thus, compensating possible losers of increased trade-openness might not experience political support anymore. Or it is eliminated as a policy option due to externally induced fiscal pressure on the respective economies. With respect to robustness, the *F*-test (value 132.94) clearly underlines this finding. Therefore, the null hypothesis that there are no *time* fixed effects can be rejected

In regression (4) I control for the impact of foreign direct investment, as this indicator of economic openness additionally brings in the increasing impact of international capital transfers on national economies. I also find a significant inverse relationship between FDI and government receipts. Thus, the sign of both indicators contradicts the *compensation hypothesis (H1)* that government increases expenditure in order to compensate domestic losers of economic globalization. In contrast, the findings support the argument that nation states are forced to retrench their spending in order to maintain a competitive economic environment by not increasing taxes.

Regression (5) and (6) introduce several control variables in order to pursue a sensitivity analysis, whereat regression (6) again contains the FDI variable. This time, however the FDI coefficient changes the sign but is not significant, a finding that contradicts the argument of contracting influence of capital openness on state budgets. On the other hand, the variable trade share continues to show a negative and significant sign. Therefore, it remains a viable estimator of the size of the public sector but loses only some of its robustness.

Thus, the control variables account for forces that have been omitted in regression (1) to (4) and increase the robustness of the model. As claimed in the original hypothesis *(H2)*, economic growth is negatively associated with the level of government expenditure. This coefficient not only becomes stronger, but additionally is significant at the 1% level. The same

holds for the expansionist effect of unemployment on the scope of the public sector. The reason to control for the population size is to into account that bigger countries do not depend as much on trade as small countries do.

Table 4: The impact of economic openness on the size of the public sector – time and entity fixed effects

Dependent Variable	**Government Receipts as Percent of GDP**					
Regressor	(1)	(2)	(3)	(4)	(5)	(6)
Trade Share	0.141***	0.219***	-0.0547***	-0.0869***	-0.0420**	-0.0364*
	0.011	*0.022*	*0.016*	*0.015*	*0.02*	*0.021*
Growth of GDP in %					-0.307***	-0.355***
					0.066	*0.073*
Left parties in government 1960-2004 in %					-0.00203	0.00423
					0.0041	*0.004*
Institutional Constraints					-1.766	-1.903
					1.27	*1.27*
Unemployment rate					0.188***	0.180***
					0.051	*0.062*
Population in Millions					-0.132***	-0.0513***
					0.018	*0.019*
FDI, ratio of Net				-0.0258*		0.112
Outflows to GDP				*0.015*		*0.11*
Constant	32.51***	27.70***	38.41***	47.39***	70.93***	54.49***
	0.66	*0.45*	*1.18*	*3.15*	*9.54*	*2.49*
Observations	773	773	773	601	616	453
R^2	0.22	0.73	0.91	0.93	0.93	0.95
R^2 adjusted	0.22	0.73	0.90	0.92	0.92	0.94
F-Test	169.32	201.75	182.08	235.99	392.76	912.35
H0:fixed effects=0	--	120.71	132.94	182.53	6671.89	591.17
Entity fixed effects	no	yes	yes	yes	yes	yes
Time fixed effects	no	no	yes	yes	yes	yes

Standard errors in Italics; Levels of significance: *** at the 1% level, ** 5% level and * 10% level.

Hypothesis *(H4)* of an expansionist influence of leftist government on government receipts is rejected again. Hypothesis *(H5)*, claiming a expenditure limiting effect of national institutional barriers, can be weakly confirmed. The more institutional constraints are to be found in country, the more often a central government attempt to expand spending is blocked. This coefficient on institutional constraints only slightly misses to match the 10% significance threshold.

In sum, on an empirical ground I can strongly confirm the economic argument that in industrialized countries, the increasing exposure toward trade openness impedes a more active role of government in compensating globalization losers by monetary transfers. This analysis remains robust when a rigorous sensitivity test is applied.

d. Policy implications

According to my results, increased economic openness leads to a stronger economic dependency on the world market. National governments react toward the increased mobility of production factors, as their taxation becomes more difficult. Margins of maneuver to tax capital and interest became more narrow and restrict governments in their capability to extract resources. This external pressure is underlined by the finding that even leftist governments do not increase government expenditure. That does not mean that the "tax state" is in peril, but a further expansion of government receipts is not as easy as it was until the 1980s. The tax-base might switch to rather immobile factors, such as labor in order to finance the increased costs of globalization that often occur in the form of high unemployment among low skilled labor force. Negative consequences of this "redistribution within one class" are additional costs for the production factor labor and an increase in competitive disadvantages. For industrialized countries of this sample policies should encourage further specialization and an intensified effort to develop human capital by emphasizing policies on education. Simple redistributive compensation policies instead, only cures symptoms but does not tackle its roots.

V. Conclusion

In this paper, the study of Cameron from 1978 on the determinants of the scope the public sector has been examined and found incomplete. Based on the original sample and without controlling for time fixed effects, it could be confirmed that trade share on the GDP as an indicator for openness of the economy has a positive and significant relationship with the scope of the public sector. Similar findings can be reported for the effect of left parties in government.

This conclusion, however, does not hold when it is controlled for *time* fixed effects across the panel. No such impact of leftist governments on the level of state expenditure can be confirmed. Moreover, the coefficient for trade share changes the sign. As it is significant on the 95% level, the original hypothesis *(H1)* has been strongly rejected. Thus, more economic openness rather leads to decreasing government receipts. This finding holds even for the inclusion of several socio-economic and political control variables. The impact of capital openness, which has been assessed by introducing FDI net outflows, however, remains inconclusive.

The applied main indicators trade and capital openness should be used to measure the influence on subcategories of government revenues, in order to further assess the impact of international economic integration on the public sector. Possible dependent variables could be either found on the territorial or functional dimension of governments. The latter, such as social policy, might be an especially fertile field of research, because economic theory predicts shrinking receipts resulting from the "exit-pressure" of the increasingly mobile tax-base capital and a shift towards heavier taxation of rather immobile tax-bases such as labor.

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