CONTEMPORARY ECONOMIC POLICY

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DOES BIG GOVERNMENT HURT GROWTH LESS IN HIGH-TRUST COUNTRIES?

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Social trust is linked to both public sector size and to economic growth, thereby helping to explain how some countries combine high taxes with high levels of economic growth. This paper examines if social trust insulates countries against the negative effects of public sector size on growth, documented in several studies. We note that the effect is theoretically ambiguous. In panel data from 66 countries across 40 years, we find no robust evidence of insulation effects: when excluding countries with uncertain trust scores, our results suggest that big government hurts growth also in high-trust countries, and that the mechanism is by lowering private investments. (*JEL* H10, O11, P16, Z10)

I. INTRODUCTION

The conditions under which a relatively generous welfare state can sustainably exist in a globalized capitalist economy have been debated for a long time (e.g., Castles 2004; Iversen 2006; Katzenstein 1993; Lindert 2004; Snower 1993; Svendsen and Svendsen 2016). A central tension in this vast literature revolves around two seemingly contradictory findings. On the one hand, the size of the public sector is positively correlated with GDP per capita, and some (mainly Northern European) countries seem particularly successful in combining relatively generous welfare states with high levels of economic affluence (cf. Bergh 2020; Lindert 2004). On the other hand, when the relationship between government size and economic growth is examined for rich countries using panel data with country fixed effects, studies tend to find that an increase in government size is associated with lower growth rates in the medium to long run (Bergh and Henrekson 2011).[1] This seemingly paradoxical situation has been referred to as a bumblebee paradox (Svendsen and Svendsen 2016; Thakur et al. 2003) suggesting that countries with large government spending and relatively solid growth somehow defy economic laws, and alluding to the misconception that flying bumblebees defy the laws of gravity.

A growing body of research suggests that social trust plays a key role in reconciling these two patterns. Historical trust levels have been causally linked to economic growth (Algan and Cahuc 2010; Bjørnskov 2012), to better institutional quality and a less regulated economy (Aghion et al. 2010; Bjørnskov 2010; Knack 2002; Leibrecht and Pitlik 2015), and to macroeconomic stability (Sangnier 2013). At the same time social trust has been causally linked to welfare state size (Algan, Cahuc, and Sangnier 2016; Bergh and Bjørnskov 2011) and at the individual level to preferences for higher public spending (Borisova, Govorun, and Ivanov 2017; Camussi, Mancini, and Tommasino 2018; Kammas, Kazakis, and Sarantides 2017).

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1. Bergh and Henrekson (2011) conclude that an increase in government size (total revenue or expenditure relative to GDP) by 10 percentage points is associated with a 0.5–1% lower annual growth rate. It should be noted that the studies surveyed by Bergh and Henrekson capture medium-run effects (typically using 5-year averages), not the short run growth boosts that come from public spending in the short run (typically estimated using yearly data).

ABBREVIATIONS

EFW: economic freedom of the world
GDP: gross domestic product

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It remains unknown, however, if social trust aggravates the negative impact of public sector size on growth, or whether it instead insulates countries against the downsides of big government. The present paper aims to fill this gap in the literature. Given the findings in Oto-Peralías and Romero-Ávila (2013), that government size is less harmful for growth when the quality of formal institutions is high, one might expect social trust to similarly dampen the adverse growth effects of big government. The findings in Berggren, Bjørnskov, and Lipka (2015), that government legitimacy exacerbates the negative growth effect of government size in the long run, rather suggest the opposite. As will be shown in Section II, it is theoretically ambiguous how social trust moderates the negative relationship between government size and growth.

To settle the issue empirically, this paper examines how government size affects investments, as well as growth when investments are controlled for, at different levels of trust. This approach is often used (e.g., Johansson 2010) when studying growth to check if a factor—in our case social trust—affects growth via the investment rate or by affecting the productivity of investments (or both). Our results indicate that when the investment rate is held constant, government spending decreases growth, but less so when trust is higher. The interpretation would be that the effect of government spending on the quality of investments is less negative when social trust is higher. However, this result is driven by countries with less reliable trust data. On the other hand, government spending robustly decreases the investment rate, and more so when trust is higher. That negative effect on investments is driven by a negative association between public consumption and private investments, which is stronger in high-trust countries. In short, we find some evidence that high-trust levels may have a mitigating effect on how the public sector affects total factor productivity, but high trust at the same time substantially aggravates the problem that public consumption crowds out private investment. When excluding countries with uncertain trust scores, our results suggest that big government hurt growth also in high-trust countries, and that the mechanism is by lowering private investments.

The rest of the paper is structured as follows. We first outline a set of theoretical considerations in Section II. Section III presents our sample, data, and estimation strategy, which we employ in Section IV. Section V summarizes the results and concludes.

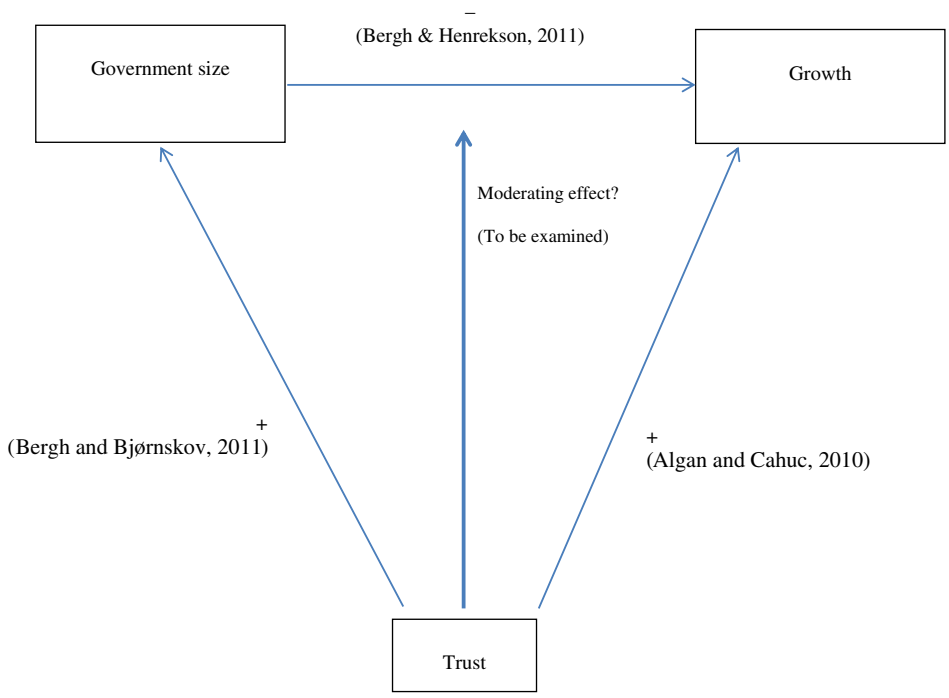
II. THEORETICAL CONSIDERATIONS

Figure 1 summarizes some important findings regarding the trust-government size-growth nexus. As mentioned, trust increases economic growth (Algan and Cahuc 2010; Bjørnskov 2012; Knack and Keefer 1997) as well as government size (Bergh and Bjørnskov 2011; Camussi, Mancini, and Tommasino 2018). Importantly, the arrows running from trust all come from studies that claim to have found a causal effect, either by using instrumental variable analysis or by relying on historical immigration to the United States. Such approaches are necessary because social trust in most countries tends to be close to constant over time (Katz and Rotter 1969; Uslaner 2008), and thus the standard approach to analyze panel data using both country and time fixed effect is not fruitful because the effect of trust will be picked up by the country fixed effect. This particular feature of the standard approach applies for example to studies that examine the relationship between government size and growth using country fixed effects (e.g., Bergh and Henrekson 2011; Fölster and Henrekson 2001). It is obvious from Figure 1, however, that cross-country comparisons of outcomes related to growth and public sector size will suffer from omitted variable bias if they do not control for trust (as discussed by Bergh 2015).

The question at stake in this paper is if trust is moderating the link from government size to growth, as indicated by the bold arrow in Figure 1. If it does so in a positive way, it implies what we will refer to as an insulation effect, which means that high-trust countries are less vulnerable to the negative growth effects of government size noted in studies such as Bergh and Henrekson (2011), Afonso and Furceri (2010), and Romero-Avila and Strauch (2008). If, on the other hand, high-trust countries are more vulnerable to negative growth effects from large public sectors, there is instead an aggravation effect. Theoretically there is little reason to expect either of these two effects to dominate the other.[2]

2. Some heterogeneity in the government size—growth relationship is documented by the random effects of Dar and AmirKhalkhali (2002) that find a significant negative effect of government size on growth in 16 out of 19 OECD countries. The exceptions were the high-trust countries Norway and Sweden, where the effect was negative but insignificant. They also found a positive but insignificant effect for the United

FIGURE 1
How Trust Affects Government Size and Growth



To see this, the survey by Bergh and Henrekson (2011) is a useful starting point in that they provide an overview of mechanisms by which a large public sector can affect growth, based on the three major paradigms in growth research: neoclassical growth theory, endogenous growth theory, and institutions as fundamental determinants of growth. The mechanisms discussed are savings and investments, education, the institutional environment, the prevalence of market failure and political failure (such as rent seeking), distortive taxation and crowding out caused by public consumption and public investment. Some types of public spending are likely to be complementary to private sector productivity and are sometimes referred to as productive spending (e.g., Lindert 2004). In our view, when estimating the total effect of the public sector on economic growth, it would be wrong to include only productive spending, as total spending could include activities that are wasteful or even harmful for growth.

States, which (although very diverse across states) has an average trust level about one standard deviation above the global average.

The studies summarized in Bergh and Henrekson (2011) suggest that in rich countries, 10 percentage points higher (total) public spending or tax revenue associate with on average 0.5–1 percentage unit lower annual growth rate. The issue at stake in our paper is whether high levels of social trust tend to aggravate or dampen the negative growth effect of government size. The answer will depend on the extent to which the channels described by Bergh and Henrekson (2011) tend to work differently in high-trust and low-trust countries. While some differences are plausible, theoretical considerations suggest no obvious systematic patterns. For savings and investments, a larger public sector may affect the quality of investments through regulation of private investments or by crowding out private investment and replacing it with politically preferred projects. As noted in Bergh (2020) and Newton, Stolle, and Zmerli (2017), higher trust means more state capacity in the sense of the ability of groups to act collectively and the ability of states to achieve official goals. Higher trust should therefore imply that public decision-makers have more discretionary power over investment, and could

lead to public investment crowding out private investment. A possible counteracting effect is that high-trust voters may be more civic minded and more prone to holding politicians accountable, improving the quality of investments (as argued by Bjørnskov 2010).

For education, the efficiency arguments for public spending are stronger, the more positive externalities are associated with education. While social trust itself is unlikely to affect the externalities from education, high-trust countries are likely to have higher public expenditure on education and trust decision-makers not only with primary, but also higher education.[3] The consequences for growth depend on whether education is best understood as human capital investments or ability signaling (see Caplan 2018).

Countries with high trust also tend to have higher institutional quality, suggesting an insulation effect given the findings in Oto-Peralías and Romero-Ávila (2013) that government size is less harmful for growth when the quality of formal institutions is high. On the other hand, Afonso and Jalles (2015) find that the adverse impact on growth from government size can be mitigated using fiscal rules, which together with the fact that trust decreases the amount of regulations in the economy suggests an aggravation effect.

Finally, social trust may affect the ability of governments to deal with market failure without being subject to political failure. Bergh (2020) argues that because social trust fosters state capacity, countries with higher trust will have better abilities to experiment and to learn from policy mistakes, and that process of experimentation may lead governments in high-trust countries to engage in areas where the Hayekian knowledge problem (Hayek 1945) is relatively less severe, suggesting an insulation effect.

In short, countries with higher trust are likely to have better institutions, bigger shares of public financing in education and investments, fewer regulations, more civic minded voters, and possibly a public sector less vulnerable to the Hayekian knowledge problem. It is ambiguous whether these characteristics speak in favor of an insulation effect or an aggravation effect. We thus have no strong theoretical prior as to whether high-trust levels moderate the size–growth relationship towards aggravation or insulation.

3. Such a pattern has hitherto not been examined, though some indicative evidences exist, for example, Goldin and Katz (1999) for the United States.

III. DATA AND EMPIRICAL STRATEGY

We employ what has become the standard trust measure in the literature, invented by Elisabeth Noelle-Neumann and popularized by the U.S. General Social Survey. This measure is the share of respondents answering "can be trusted" in the standard question "In general, do you think most people can be trusted or can't you be too careful?" Several studies suggest that trust scores are remarkably stable over time in most countries (Algan and Cahuc 2010; Bjørnskov 2010; Nannestad 2008; Uslaner 2008) and we follow the standard approach in the literature to use trust as a time-invariant factor at the country level. Although it has been criticized for being conceptually vague, the measure is documented to correlate with a number of behavioral characteristics of countries around the world. Knack and Keefer (1997) tested its validity by noting that return rates in wallet-drop experiments around the world correlate strongly with survey trust (Bjørnskov 2010, 2019; Felton 2001). Experimental evidence associating observed behavior with stated trust also finds trust to correlate with behavior in trust-sensitive, anonymized economic experiments such as dictator and public goods games (Cox et al. 2009; Sapienza, Toldra-Simats, and Zingales 2013).

A. The Sample and Control Variables

To maximize the number of observations, we use the data on OECD countries and countries that are economically comparable to OECD-countries and Latin America from Bjørnskov and Méon (2013). We include these countries because they provide the largest sample with credible survey data in which the structure of political processes and the constitutional definition of formal institutions are broadly similar (cf. Elkins et al. 2009). Excluding agrarian and resource-dependent least developed countries in Africa and Asia thus ensures that the likely economic transmission mechanisms of social trust are approximately similar. All variables are aggregated into nine 5-year periods for the time between 1970 and 2015 and thus form an unbalanced panel dataset.

The trust data are compiled by using all information in the six waves of the World Values Survey between 1981 and 2010, data from the 1995 to 2012 LatinoBarometro, the 2002–2004 Danish Social Capital, and recent observations from the Latin American Public Opinion Project (LaPop) surveys. We treat the trust scores as

TABLE 1
Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum	Observations
Annual growth rate	2.083	2.843	−15.483	10.488	643
Investment rate	24.007	8.755	.166	61.975	643
Initial log GDP per capita	9.492	.785	7.373	11.303	643
Openness	62.290	53.423	.663	460.024	643
Investment price	1.729	7.132	.293	85.533	643
Coup d'états	.063	.301	0	3	710
Post-communist	.211	.408	0	1	710
Economic freedom	6.757	1.526	1.625	9.184	648
Education	7.583	2.734	.77	13.42	670
Social trust	28.020	14.521	5.675	69.244	680
Government spending	16.196	5.176	4.009	37.346	632
Government consumption	20.405	6.875	5.330	43.151	640
Transfers and subsidies	12.205	8.488	0	37.200	586
Private investment	17.831	7.644	.013	50.501	588
Public investment	6.198	3.871	.092	28.225	588

approximately time invariant such that the observations we use throughout are the values reported in Table A1, Appendix, which also lists all countries in the sample.

Our other main variable is government size, which we capture in two different ways. We first employ the standard measure of government final consumption expenditure, measured as a percent of GDP, which includes all government consumption except transfers. These data derive from the World Development Indicators database (World Bank 2019), which we supplement with observations from various editions of the IMF's *World Economic Outlook* from the 1990s (IMF 2020). As stressed by several studies, this measure is subject to endogeneity (Bergh and Henrekson 2011). We therefore supplement it with data on government consumption as percent of total consumption, and transfers and subsidies as percent of GDP; both are from Gwartney et al. (2019).

Our two dependent variables are the annual growth rate of real (purchasing power) GDP per capita and the investment rate as percent of GDP, both from Penn World Tables mark 9.1 (Feenstra, Inklaar, and Timmer 2015). In additional tests, we use information in Gwartney et al. (2019), supplemented by data from IMF (2020), to separate public and private investment rates. From the same source as our main growth data, we supplement the baseline with openness (trade volumes as percent of GDP) and the relative investment price (the price of capital goods as share of the total price level) in the investment specification.

Previous studies have shown that economic freedom and education are likely transmission mechanisms in how social trust affects growth (Bjørnskov 2012; Dearmon and Grier 2011; Papagapitos and Riley 2009). Education is the average number of years of schooling in the population (Barro and Lee 2010) while we use the economic freedom index from Gwartney et al. (2019), but excluding area 1, which captures government size. The economic freedom index in the tables thus captures legal quality, sound money, trade policy and regulatory freedom. We also add a set of regional controls for Asia, Latin America, and the post-communist countries, a full set of period dummies, and an indicator of whether or not a coup occurred in the country within a given period.[4] We thus estimate Equations (1) and (2) where $G_{i,t}$ is growth in country i in period t, $I_{i,t}$ is the investment rate, $G_{i,t}$ is government consumption, T_i is social trust, X is a vector of control variables, D_t is a full set of period fixed effects, and $u_{i,t}$ is an error term. All data are summarized in Table 1.

$$(1) \qquad G_{i,t} = a + b\,G_{i,t} + c\,T_i + d\,G_{i,t}\,T_i + e\,X_{i,t} + f\,D_t + u_{i,t}.$$

$$(2) \qquad I_{i,t} = a + b\,G_{i,t} + c\,T_i + d\,G_{i,t}\,T_i + e\,X_{i,t} + f\,D_t + u_{i,t}.$$

All variables are aggregated into the nine 5-year periods for the time between 1970 and 2015. Effects are estimated using a generalized least squares random effects estimator with a full set

4. The coup data derive from the new database on regime change developed by Bjørnskov and Rode (Forthcoming), covering 208 countries in the entire period 1950–2018. The coup indicator is included as a direct and objective measure of political instability.

of period fixed effects. The motivation is that since social trust is approximately time-invariant, any fixed effects estimator will effectively capture the main effects of trust, but leave us without any way of ascertaining the interactions between trust and government spending. While the interaction term is not time-invariant, parts of the comparison basis—trust effects at zero government spending—are, which leaves one with random effects estimators as the only practical choice.

B. *Coping with Endogeneity*

As discussed by Bergh and Henrekson (2011), the literature on government size and growth is plagued by endogeneity problems. In our case, these problems are slightly less of a concern because we use social trust as a time-invariant country level characteristic and our main question concerns the interaction effect between trust and government size. As Nizalova and Murtazashvili (2016) show, this implies that even though the *average* estimate of government consumption may be subject to endogeneity bias, the *heterogeneity* of the effect as captured by the interaction term has a direct causal interpretation, as long as social trust—the interacting variable—is plausibly exogenous, because the main effect of the potentially endogenous variable is directly controlled for (see also Nunn and Qian 2012). This allows us to draw valid, causal inferences regarding how social trust moderates the association between government size and growth or investments because, as we note above, social trust is approximately time-invariant and thus must be approximately exogenous.

However, another source of causal inference derives from using knowledge about the nature and direction of the endogeneity bias in the government size estimates, which allows us to establish approximate upper and lower bounds on the general growth effect. When government size is measured using expenditure, spending will vary mechanically with growth, in particular when measured as a percentage of GDP: if GDP decreases, the ratio will automatically increase and result in a negative estimate. In economic downturns, automatic stabilizers increase transfer payments, and governments may conduct Keynesian stabilization policies and possibly increase industrial subsidies, which exacerbates the bias. If these effects persist for a prolonged period of time, the spending *reactions* to low growth induce a downward bias in the estimate of how government size affects growth. As described by Romero-Avila and Strauch (2008) and elaborated in Bergh and Henrekson (2011), it is nevertheless possible to get a sense of the bias since revenue-based measures of the size of government exhibit the opposite bias: due to profit taxation and tax progressivity, tax revenues tend to increase when growth is above its trend, not because high tax revenue cause above average growth, but because high growth increases tax revenue. Estimates based of government consumption using revenue-based will thus exhibit the opposite bias, and comparing estimates with revenue-based and spending-based indicators thus provide an upper and lower bound for the true effect of interest.

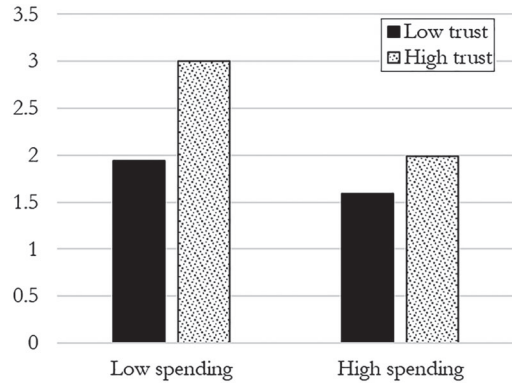
We note a similar structure in our data in the sense that the measure of transfers and subsidies is subject to substantially stronger endogeneity bias than either government spending as percent of GDP or government consumption, measured as percent of total consumption. First, the use of government consumption as a share of total consumption instead of the more standard scale as a share of GDP in itself reduces endogeneity concerns, because a decrease in investments is likely to be associated with a decrease in the growth rate. As investments are necessarily part of GDP, there is a mechanical association between a lower investment rate and larger government consumption as a share of GDP, due to the effective inclusion of investments in the denominator. This problem does not arise when scaling government consumption with total consumption. Second, most automatic stabilizers and corporatist subsidies will enter directly into any measure of transfers and subsidies while measures based on final expenditures are only indirectly affected. Any endogeneity bias must therefore be substantially larger for the transfers and subsidies indicator.

While we cannot rule out that the estimates in the following are biased, we note that if endogeneity bias is a substantial concern, we should observe that transfers-based estimates are more negative than spending-based measures. If not, it is unlikely that our average estimates are substantially biased, and even if they are, the heterogeneity of the effect still has a causal interpretation. With these insights, we proceed to a first look at the data.

IV. RESULTS

A first glance at the data is provided by splitting the sample into above/below median social trust and government spending, respectively, and calculating average growth for the resulting four

FIGURE 2
Growth and Spending, Conditional on Trust



Note: The difference between spending in the low-trust group is insignificant at $p < .33$; the difference in the high-trust is significant at $p < .001$.

country categories. Results are shown in Figure 2 where the group that clearly differs from the rest is the high trust/low spending combination (with countries such as Australia and Switzerland), which on average grew by about 3% annually over the 1975–2015 period. In comparison, the low trust/high spending combination (including France and Portugal) grew on average about 1.6% while the remaining two groups grew by about 2%. The raw data exhibit a similar difference in investment rates with an average of 26% in the high trust/low spending group and lower rates in the other three groups. Similarly, private investments are on average 21% of GDP in the high trust/low spending group and 15–18% in the remaining groups. In all cases, the high trust/low spending group is different from the rest at any conventional level of significance.

A. Main Results

The main results in Table 2 tell a somewhat different story than the indications of substantial differences in the figure. Focusing on growth rates, we find first a set of standard results: initial GDP per capita is significantly negatively associated with growth, investment rates are positively so, and coups tend to lower growth. In column 2, in which we control for two well-established direct transmission mechanisms of social trust, we also find that economic freedom (excluding indicators of government size) and education are both significantly associated with higher growth rates.

Turning to the main purpose of the paper, the inclusion of social trust, government spending, and an interaction term between the two means that we must evaluate the marginal effect of spending conditional on the level of trust with the correct conditional standard errors (Brambor, Clark, and Golder 2006). We do so in the bottom panel of the table, which shows that government spending is strongly negatively associated with growth at low-to-medium levels of social trust, but not at high levels. The results indicate that at trust levels higher than about 45%—approximately the level of Switzerland or Canada—government spending no longer significantly lowers growth. For the direct effects of public spending, we thus find tentative evidence for an insulation effect.

Interestingly, we obtain markedly different results for the determinants of investment rates. As expected, openness to trade and relative investment prices are significant predictors of investments. The interaction of spending and trust suggests that the crowding out effects of spending are strongly increasing in social trust. The point estimate increases more than fourfold from the least to the most trusting nations and becomes significant at trust levels above 8 %, indicating a clear aggravation effect.

As discussed in Section III, we should worry about endogeneity if we observe substantially stronger associations when government size is measured using transfers and subsidies. Yet, the results in Table 3 suggest the opposite: using transfers and subsidies, we find no evidence of any effects on growth or investments. The findings when using government consumption as a share of total consumption (our third measure of government size) are similar to those in Table 2, although the point estimate for investments is surrounded by substantially larger standard errors.

B. Separating Private and Public Investments

So far, the evidence appears to be inconclusive. Yet, we note that almost all arguments in Section II actually pertain to *private* investments and not public investments. In Table 4, we therefore employ both types and estimate their determinants separately, allowing them to differ, again noting that the endogeneity bias resulting from measuring investments as a percent of GDP is similar for public and private investments. We first find that the positive effects of openness and economic freedom are strongly significant for private investments (but not for

TABLE 2
Main Results

Sample	**All**	**All**	**All**	**All**
Dependent	**Growth**	**Growth**	**Investment Rate**	**Investment Rate**
	1	**2**	**3**	**4**
Initial log GDP per capita	−1.465*** (.389)	−1.808*** (.368)	−3.299* (1.727)	−2.868* (1.693)
Openness	.004 (.003)	.001 (.003)	.044*** (.010)	.039*** (.010)
Investment rate	.053*** (.015)	.048*** (.015)		
Investment price			−.262*** (.017)	−.252*** (.021)
Coup d'états	−1.185*** (.372)	−.968*** (.334)	−.031 (.634)	.067 (.676)
Post-communist	.402 (.463)	.164 (.514)	−7.870*** (2.034)	−6.732*** (2.395)
Economic freedom		.589*** (.133)		.736* (.406)
Education		.181** (.088)		−.167 (.384)
Social trust	−.030 (.045)	−.075* (.045)	.388*** (.136)	.363** (.152)
Government spending	−.169** (.075)	−.196*** (.068)	.308* (.171)	.329* (.195)
Trust * spending	.002 (.002)	.003* (.002)	−.018*** (.006)	−.018*** (.006)
Period effects	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes
Observations	534	523	534	523
Countries	67	65	67	65
Within R^2	.303	.370	.244	.256
Between R^2	.338	.382	.662	.648
Wald Chi squared	348.26	503.07	724.63	612.12
Spending effect at:				
Minimum (BRA)	−.156** (.064)	−.177*** (.059)	.201 (.145)	.223 (.167)
10th percentile	−.145*** (.056)	−.161*** (.051)	.108 (.125)	.130 (.144)
25th percentile	−.131*** (.046)	−.140*** (.042)	−.006 (.106)	.017 (.121)
Median	−.116*** (.037)	−.119*** (.035)	−.124 (.095)	−.100 (.107)
75th percentile	−.085*** (.031)	−.074** (.033)	−.378*** (.115)	−.353*** (.122)
90th percentile	−.061 (.041)	−.039 (.044)	−.574*** (.158)	−.548*** (.165)
Maximum (DEN)	−.013 (.077)	.030 (.078)	−.960*** (.261)	−.932*** (.276)

Notes: Standard errors in parentheses. Significance at *$p < .10$, **$p < .05$, ***$p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006).

public investments), and that private investments are substantially more sensitive to the prices of capital goods than public investments. While economic freedom is significantly positively related to private investments, there is a negative but insignificant association with public investments. As expected, we also find that formerly communist countries tend to have larger public investments.

Most pertinently, we find that the effects of both government spending and government consumption on private investments are significant and strongly heterogeneous in social trust, signifying an aggravation effect. With government spending, measured as a percent of GDP, effects are significant at median trust levels and higher with an estimate of −.81 at the maximum trust level. With government consumption, measured as a share of total consumption, the coefficient changes from .15 (weakly significant) to −.40 (significant at the 95% level), suggesting that government consumption might complement private investment at (very) low-trust levels, but crowds out private investment in high-trust countries. As such, while the average estimates on government spending may suffer from endogeneity bias, our results still reflect the phenomenon described by Nizalova and Murtazashvili (2016) as the degree of heterogeneity is not affected by the choice of measure and can therefore by treated as exogenous. For transfers and subsidies, we simply find a negative but insignificant homogeneous effect on private investments that is not associated with trust, and a similarly homogenous and significant positive effect on public investments. While many results in Tables 3 and 4 are mixed, the consistent finding is an unambiguously negative effect of government spending on private investments, which is more negative at higher trust levels.

C. Robustness

A remaining problem is that if our main results are driven by extreme observations of social trust, they do not generalize to most countries. In that case, the results must be driven by some omitted variable that is particularly salient in either very low-trust countries or in the highly trusting

TABLE 3
Additional Results, Alternative Indicators

Sample	**All**	**All**	**All**	**All**
Dependent	**Growth**	**Growth**	**Investment Rate**	**Investment Rate**
	1	**2**	**3**	**4**
Initial log GDP per capita	−1.796*** (.359)	−1.734*** (.372)	−3.323* (1.715)	−2.777* (1.631)
Openness	.002 (.003)	.001 (.002)	.038*** (.012)	.039*** (.011)
Investment rate	.050*** (.015)	.042*** (.015)		
Investment price			−.249*** (022)	−.243*** (.021)
Coup d'états	−.922*** (.332)	−.954*** (.364)	.235 (.697)	−.503 (.633)
Post-communist	.181 (.474)	.372 (.455)	−6.995 (2.412)	−6.819*** (2.237)
Economic freedom	.624*** (.132)	.620*** (.157)	.634 (.414)	.794** (.404)
Education	.151* (.084)	.105 (.084)	−.079 (.389)	−.075 (.374)
Social trust	−.059* (.032)	−.019 (.027)	.246* (.142)	−.031 (.121)
Government consumption	−.096*** (.030)		.275** (.108)	
Transfers and subsidies		−.049 (.052)		−.059 (.185)
Trust * consumption	.002** (.001)		−.009*** (.004)	
Trust * transfers		.000 (.001)		.000 (.005)
Period effects	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes
Observations	536	521	536	521
Countries	65	65	65	65
Within R^2	.363	.362	.235	.247
Between R^2	.428	.418	.631	.639
Wald Chi squared	545.64	379.92	493.18	527.86
Spending effect at:				
Minimum (BRA)	−.086*** (.026)	−.047 (.045)	.220** (.092)	−.053 (.159)
10th percentile	−.077*** (.022)	−.043 (.039)	.172** (.081)	−.055 (.138)
25th percentile	−.065*** (.019)	−.043 (.033)	.113 (.071)	−.053 (.115)
Median	−.054*** (.016)	−.041 (.027)	.053 (.067)	−.050 (.096)
75th percentile	−.029* (.016)	−.036* (.019)	−.078 (.084)	−.045 (.091)
90th percentile	−.010 (.022)	−.032 (.021)	−.179 (.111)	−.040 (.121)
Maximum (DEN)	.028 (.038)	−.025 (.041)	−.378** (.178)	−.032 (.211)

Note: Standard errors in parentheses. Significance at $*p < .10$, $**p < .05$, $***p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006).

Scandinavian countries. A similar problem arises if the trust scores from several national surveys vary substantially, indicating that data quality is also poor in other areas other than trust.[5] In addition, we would also get spurious results if all of our identified effects were driven by events in a single time period. To examine these concerns, we have subjected our results to a number of robustness tests.

As we show in the Appendix, excluding extreme trust scores leaves main results intact (Table A2) but excluding uncertain trust scores (Table A3) does change some findings. When excluding countries with either only one survey observation (Belize, Guyana, Haiti, and Israel) and countries in which the smallest and largest trust observation differ by more than a factor two (Brazil, Colombia, Costa Rica, Cyprus, the Dominican Republic, Peru, Poland, Suriname, Trinidad and Tobago, and Turkey), the point estimate of government spending in the growth regressions is no longer conditional on social trust. While spending is insignificant among the highest-trust countries, the conditional point estimates across all trust scores does not vary at all. In other words, we find no robust and significant evidence in favor of an insulation effect. We also continue to find no evidence of trust effects on public investments.

Conversely, our main results pertaining to the overall investment rate as well as to private investments are robust to the exclusion of uncertain trust observations. While we find a quantitatively slightly smaller effect of government spending, but an unchanged effect of government consumption, the main findings for investments remain the same.

Our results must also be examined against the results reported by Oto-Peralías and Romero-Ávila (2013) that the growth effects

5. Hollyer, Rosendorff, and Vreeland (2011) show that data quality and in particular the availability of policy data varies with democracy. We argue that since social trust is associated with the quality of bureaucratic institutions, data quality is also likely to vary with such institutions as well as their determinants, which include trust.

TABLE 4
Separating Private and Public Investments

Sample	**All**	**All**	**All**	**All**	**All**	**All**
Dependent	**Private Investment 1**	**Private Investment 2**	**Private Investment 3**	**Public Investment 4**	**Public Investment 5**	**Public Investment 6**
Initial log GDP per capita	−1.767 (1.367)	−1.959 (1.379)	−2.373 (1.462)	−.274 (653)	−.239 (.724)	−.269 (.670)
Openness	.036*** (.007)	.039*** (.008)	.040*** (.008)	.004 (.005)	.002 (.005)	.004 (.005)
Investment price	−.168*** (.018)	−.159*** (.018)	−.147*** (.016)	.029*** (.010)	.019 (.014)	.026** (.012)
Coup d'états	.401 (.515)	.445 (.492)	.440 (.602)	−.686 (.501)	−.618 (.594)	−1.200*** (.392)
Post-communist	−5.774 (2.247)	−6.196** (2.361)	−6.509*** (2.141)	−.447 (.695)	−.069 (.962)	−.269 (.775)
Economic freedom	.895** (.402)	.894** (.413)	.954** (.404)	−.215 (.248)	−.359 (.268)	−.216 (.248)
Education	.015 (.334)	−.068 (.340)	.168 (.349)	−.365** (.171)	−.290* (.169)	−.350** (.170)
Social trust	.261* (.149)	.206 (.128)	−.036 (.122)	.024 (.063)	−.005 (.059)	−.006 (.041)
Government spending	.171 (.169)			.048 (.107)		
Government consumption		.199** (.092)			.028 (.086)	
Transfers and subsidies			−.119 (.185)			.042 (.078)
Trust * spending	−.014** (.006)			−.000 (.003)		
Trust * consumption		−.009*** (.003)			.000 (.002)	
Trust * transfers			.000 (.005)			.001 (.002)
Period effects	Yes	Yes	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	506	517	505	506	517	505
Countries	65	65	65	65	65	65
Within R^2	.221	.219	.209	.319	.292	.325
Between R^2	.678	.667	.654	.334	.336	.318
Wald Chi squared	882.65	812.39	721.24	811.14	727.93	682.37
Spending effect at:						
Minimum (BRA)	.089 (.142)	.149* (.078)	−.118 (.159)	.045 (.093)	.029 (.077)	.047 (.068)
10th percentile	.017 (.122)	.104 (.068)	−.117 (.137)	.043 (.082)	.032 (.071)	.051 (.059)
25th percentile	−.071 (.103)	.050 (.059)	−.116 (.113)	.041 (.069)	.034 (.063)	.056 (.051)
Median	−.162* (.095)	−.005 (.057)	−.115 (.091)	.038 (.059)	.036 (.056)	.062 (.045)
75th percentile	−.357*** (.126)	−.125* (.075)	−.113 (.077)	.033 (.054)	.041 (.048)	.073* (.044)
90th percentile	−.509*** (.174)	−.219** (.102)	−.112 (.103)	.028 (.067)	.045 (.050)	.082 (.056)
Maximum (DEN)	−.807*** (.287)	−.401** (.163)	−.108 (.190)	.020 (.113)	.052 (.071)	.099 (.092)

Note: Standard errors in parentheses. Significance at *$p < .10$, **$p < .05$, ***$p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006).

of government spending depend on the quality of formal institutions, which they measure using bureaucracy quality from the International Country Risk Guide. We first confirm and extend their result by using two other measures of institutional quality: area 2 (legal quality) of the EFW index and an average of areas 2–5 (resulting in the combined institutional and policy quality measure used in previous tables). To check whether the moderating effects of trust that we have found are either (1) evidence of *direct* effects of differences in trust, or (2) occur because trust influences the quality of formal institutions, Table A4 in the Appendix shows the results of adding an interaction term between economic freedom and government spending. This robustness test can be interpreted as a "beauty contest" between the trust interaction and the institutional quality interaction, although a rather noisy contest owing to the substantial correlation between economic freedom and social trust (Aghion et al. 2010; Bergh and Bjørnskov 2011).

We first observe that the direct effects of government spending on growth are substantially more heterogeneous in trust than in economic freedom (areas 2–5). The addition of an interaction with economic freedom does not affect the observed heterogeneity in trust, although we must emphasize that this particular result is not robust. When focusing on overall investment rates, the results indicate more support for an indirect channel for trust, since the point estimate on government spending varies by about 44% between the 10th (low) and 90th (high) deciles of the distribution of trust, but 87% between particularly low and high economic freedom. However, when estimating the determinants of private investments, the similar differences across the trust distribution are 53% and 59% across the distribution of economic freedom. Again, we observe no real effects for public investments. The particular results therefore do not support any clear interpretation, but mostly suggest that about half of the investment effect occurs directly and about half derives from the indirect effects of trust through economic freedom. Interacting instead with only area 2 of the EFW-index produces results more in line with Oto-Peralías and Romero-Ávila (2013), but still does not change our results regarding trust. In all, when it comes to moderating the negative growth effect of government size, social trust and institutional quality differs a lot.

Finally, we have also run a number of robustness tests (not shown) that turn out not to affect the main findings: excluding the lowest trust scores in the sample—Trinidad and Tobago, Brazil, and Belize—and the three highest trust countries—the Scandinavian countries Denmark, Norway, and Sweden. Similarly, a full period jackknife (i.e., excluding each of the nine time periods one at a time), reveals no significant differences in the main results. We have also excluded observations with particularly high government spending without observing a significant change in our main results.

Summarizing, the robustness tests indicate that while the directly growth-related findings are fragile and seem to be driven by questionable trust data, the conditional crowding out effects of government spending on private investments are robust to all additional tests we have tried. In other words, the robust findings support an aggravation effect. We therefore proceed to assessing the full quantitative effect of government spending at different levels of social trust, regardless of their particular channel.

V. SUMMARY AND CONCLUSIONS

To analyze whether high levels of social trust dampen or aggravate the adverse effects of big government on growth, this paper analyzed panel data from a sample of 66 countries to examine how social trust moderates the relationship between government size and economic growth. We find evidence of an insulation effect only when investments are controlled for, and robustness tests suggest that this result is driven by few countries with a priori uncertain trust observations. On the other hand, we find robust evidence that government spending is crowding out private investments, and more so when trust is higher.

As a summary of our results, a quantitative assessment of how social trust moderates the association between government size and growth is useful. Focusing on the results that are robust to the exclusion of uncertain trust observations (in Table A3), we find that: (1) at the very lowest trust levels, we find no significant effects of government spending on growth; (2) at social trust levels above approximately 13%, that is, for all but the 10 least trusting countries in the sample, the negative effect becomes statistically significant; and (3) at the 90th decile of trust, that is, around the trust level of Canada or Australia, a one-standard deviation increase in government spending is associated with a long-run growth decline of about 15% of a standard deviation.

The economic significance of the effect is not huge, but also far from trivial. Evaluated at the German trust level, a 10-percentage point increase in government size associates with approximately 0.7 percentage units lower annual growth rate. In other words, for medium to high-trust levels, the size of the effect is similar to the one reported in the survey by Bergh and Henrekson (2011), that most studies of rich countries find that 10 percentage points bigger public sector correlates with 0.5–1.0 percentage unit lower annual growth rate. Interestingly, this similarity appears despite the fact that Bergh and Henrekson (2011) survey studies of developed countries only.[6]

If uncertain trust observations are included in the analysis, the results change slightly towards supporting an insulation effect. At trust levels around 10%, the full marginal effect of a one-standard deviation shock to government spending on growth is about 30% of a standard deviation of growth, mostly driven by a direct effect on growth of about a fourth of a standard deviation. At levels of trust around 45% and higher (approximately the level of Australia), the corresponding full effect is zero although the investment rate is reduced by a third of a standard deviation. At high levels of social trust, the direct and indirect effects may thus approximately cancel each other out.

One interpretation of our results is that trust enables governments to spend more on areas where crowding out is more likely to be a problem. This interpretation fits well with the findings of Afonso and Jalles (2015) that social security spending has a negative effect on private investment, whereas the opposite holds true for government health spending. As noted by Pitlik and Kouba (2015), social security and untested social benefits are likely to be among the spending components most affected by social trust. Yet, other mechanisms may be equally important and the relative dearth of detailed spending data prevents us from any direct tests.

Overall, our results conversely provide little support for any "bumblebee explanations" of Nordic countries such that these countries would be fundamentally different or immune to the downsides of excessive scope of government. While high levels of social trust do enable these countries to enjoy a combination of large public sector spending and relatively high rates of economic growth, growth rates will still suffer if the public sector becomes too large. Moreover, our findings suggest that the crowding out of private investment is an important mechanism by which public spending dampens growth in high-trust countries. As such, the welfare state is not a free lunch, not even in Scandinavia.

6. Another illustration of the size would be to say that a three-percentage point increase in government spending—that is, from a balanced budget to the maximum allowed deficit allowed within the current EU fiscal rules—is associated with an annual growth decline of about 0.2 percentage points. Evaluated around average growth, this amounts to reducing the cumulative income increase within a 5-year period by three-fourths.

APPENDIX A

TABLE A1
Country Averages

Country	Social Trust	Investment Rate	Growth Rate	Government Spending
Albania	16.12	18.21	2.16	11.34
Argentina	21.42	15.55	0.82	11.37
Australia	48.01	28.71	1.71	17.58
Austria	39.60	28.72	1.99	18.48
Belgium	31.90	29.39	1.79	21.81
Belize	7.61	15.69	1.85	15.20
Bolivia	19.71	13.25	1.21	13.06
Brazil	5.89	21.33	1.93	15.38
Bulgaria	25.83	7.16	3.08	16.75
Canada	47.73	25.75	1.59	21.30
Chile	14.82	19.26	2.52	12.23
Colombia	18.23	20.85	2.17	12.89
Costa Rica	16.43	15.81	2.02	14.99
Croatia	19.87	21.51	0.81	21.08
Cyprus	13.54	40.17	2.99	16.19
Czech Rep.	26.32	25.66	1.68	20.67
Denmark	69.24	26.61	1.51	24.80
Dominican Republic	25.05	22.40	3.09	7.47
Ecuador	20.65	23.46	1.70	13.45
El Salvador	21.79	12.16	1.13	13.12
Estonia	30.94	25.25	2.46	20.34
Finland	60.59	33.57	1.99	20.44
France	23.62	26.42	1.64	21.99
Germany	39.53	26.87	1.88	19.31
Greece	21.57	30.90	1.05	17.74
Guatemala	22.45	12.59	1.10	7.76
Haiti	17.84	24.88	−0.52	8.41
Honduras	19.35	18.64	1.05	13.66
Hungary	25.86	22.97	2.13	21.99
Iceland	48.38	31.13	2.42	20.32
Ireland	39.03	26.60	3.75	18.03
Israel	23.46	27.36	2.06	28.70
Italy	29.49	26.64	1.49	18.26
Jamaica	26.40	18.96	−0.07	15.23
Japan	39.59	33.21	2.05	15.94
Korea, Republic	32.22	35.77	5.83	11.87
Latvia	19.63	21.63	1.53	20.27
Lithuania	25.41	16.32	2.10	20.87
Luxembourg	30.67	33.85	2.47	15.81
Macedonia	10.86	17.89	1.44	18.37
Malta	23.65	30.73	4.46	17.71
Mexico	26.08	20.37	1.28	9.87
Montenegro	30.31	18.56	0.42	22.40

TABLE A1
Continued

Country	Social Trust	Investment Rate	Growth Rate	Government Spending
Netherlands	56.94	24.47	1.65	22.58
New Zealand	52.62	23.34	1.35	17.74
Nicaragua	19.19	21.46	−0.30	16.20
Norway	68.18	29.56	2.28	19.88
Panama	21.20	22.26	2.78	15.23
Paraguay	13.68	17.22	2.35	8.06
Peru	15.56	17.94	1.25	11.06
Poland	21.77	18.82	2.59	18.97
Portugal	19.31	26.80	2.04	16.29
Romania	15.20	21.65	3.16	13.96
Serbia	18.41	18.96	0.28	18.94
Singapore	27.98	49.00	4.65	10.16
Slovakia	19.74	23.06	2.64	20.34
Slovenia	21.18	27.63	1.71	18.40
Spain	32.41	27.89	1.82	15.97
Sweden	64.34	28.70	1.65	25.20
Switzerland	49.56	33.04	0.95	11.37
Taiwan	33.65	26.13	5.38	15.84
Trinidad and Tobago	5.68	15.65	2.12	13.91
Turkey	9.66	26.31	2.65	11.70
United Kingdom	37.06	23.39	1.91	19.15
United States	40.58	25.27	1.85	15.70
Uruguay	28.42	19.89	2.04	12.80
Venezuela	19.33	26.11	−0.01	11.71

TABLE A2
Main Results, No Extreme Trust Scores

Sample Dependent	All Growth 1	All Investment rate 2	All Private investment rate 3	All Public investment rate 4
Initial log GDP per capita	−2.084*** (.370)	−2.964 (1.826)	−2.149 (1.469)	−.076 (.764)
Openness	.001 (.002)	.038*** (.010)	.039** (.007)	.002 (.005)
Investment rate	.043*** (.016)			
Investment price		−.245*** (.020)	−.158*** (.017)	.027*** (.010)
Coup d'états	−.865** (.347)	.312 (.670)	.543 (496)	−.583 (.509)
Post-communist	−.029 (.496)	−7.675*** (2.436)	−7.018*** (2.296)	−.269 (.751)
Economic freedom	.615*** (.142)	.881** (.415)	.997** (.424)	−.168 (.257)
Education	.189** (.086)	−.000 (.434)	.378 (.374)	−.498*** (.192)
Social trust	−.008 (.041)	.422** (.169)	.273 (.175)	.076 (.075)
Government spending	−.094 (.068)	.547** (.219)	.267 (.199)	.160 (.119)
Trust * spending	−.000 (.002)	−.026*** (.006)	−.019*** (.006)	−.004 (.004)
Period effects	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes
Observations	471	471	454	454
Countries	59	59	59	59
Within R^2	.366	.239	.218	.311
Between R^2	.431	.659	.706	.362
Wald Chi squared	642.61	864.62	1,034.29	1,028.40
Spending effect at:				
Minimum (BRA)	—	—	—	—
10th percentile	−.098** (.049)	.260 (.163)	.062 (.146)	.117 (.083)
25th percentile	−.100** (.040)	.097 (.136)	−.055 (.122)	.093 (.067)
Median	−.103*** (.034)	−.072 (.113)	−.175* (.107)	.068 (.056)
75th percentile	−.108*** (.037)	−.435*** (.104)	−.435*** (.122)	.013 (.066)
90th percentile	−.112* (.051)	−.717*** (.137)	−.637*** (.168)	−.029 (.097)
Maximum (DEN)	—	—	—	—

Note: Standard errors in parentheses. Significance at *$p < .10$, **$p < .05$, ***$p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006). The sample excludes Trinidad and Tobago, Brazil, and Belize (the bottom) and Denmark, Norway, and Sweden (the top).

TABLE A3
Main Results, No Uncertain Trust Scores

Sample **Dependent**	**All** **Growth** **1**	**All** **Investment Rate** **2**	**All** **Private Investment Rate** **3**	**All** **Public Investment Rate** **4**
Initial log GDP per capita	−2.051*** (.519)	−2.589* (1.461)	−1.175 (1.091)	−.899 (.671)
Openness	.001 (.003)	.039*** (.009)	.039*** (.006)	.002 (.005)
Investment rate	.019 (.021)			
Investment price		−.249*** (.018)	−.167*** (.016)	−035** (.10)
Coup d'états	−.773* (.409)	.252 (.821)	.152 (.531)	−.299 (.655)
Post-communist	.758 (.611)	−4.006* (2.052)	−3.385** (1.677)	−.163 (.946)
Economic freedom	.789*** (.175)	1.093** (.486)	.981** (.469)	.336 (.301)
Education	.043 (.121)	−.087 (.425)	.153 (.351)	−.462** (.216)
Social trust	−.006 (.062)	.314 (.242)	.118 (.219)	.076 (.101)
Government spending	−.174 (.127)	−.086 (.417)	−.354 (.369)	.052 (.150)
Trust * spending	.001 (.003)	−.013 (.010)	−.005 (.009)	−.002 (.004)
Period effects	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes
Observations	377	377	367	367
Countries	48	48	48	48
Within R^2	.383	.294	.257	.328
Between R^2	.413	.748	.739	.450
Wald Chi squared	348.73	2,252.12	4,033.16	1,644.46
Spending effect at:				
Minimum (BRA)	−.168 (.112)	−.226 (.159)	−.382 (.310)	.039 (.129)
10th percentile	−.163* (.099)	−.262* (.138)	−.406 (.268)	.028 (.111)
25th percentile	−.158* (.083)	−.306*** (.115)	−.436** (.221)	.014 (.091)
Median	−.152** (.069)	−.352*** (.099)	−.466*** (.179)	−.000 (.074)
75th percentile	−.139*** (.047)	−.450*** (.102)	−.532*** (.139)	−.031 (.060)
90th percentile	−.129*** (.049)	−.526*** (.137)	−.583*** (.181)	−.055 (.080)
Maximum (DEN)	−.109 (.091)	−.669*** (.229)	−.683** (.341)	−.102 (.151)

Note: Standard errors in parentheses. Significance at *$p < .10$, **$p < .05$, ***$p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006). The sample excludes Belize, Colombia, Costa Rica, Cyprus, the Dominican Republic, El Salvador, Guyana, Israel, Mexico, Nicaragua, Panama, Peru, Poland, Suriname, Trinidad and Tobago, and Turkey.

TABLE A4
Main Results, Interaction with EFW

Sample **Dependent**	**All** **Growth** **1**	**All** **Investment Rate** **2**	**All** **Private Investment Rate** **3**	**All** **Public Investment Rate** **4**
Full baseline included				
Economic freedom	.824*** (.202)	1.672** (.659)	1.721*** (.632)	−.048 (.334)
Social trust	−.022 (.052)	.557*** (.211)	.439** (.215)	.060 (.084)
Government spending	−.226*** (.069)	.195 (.201)	.057 (.170)	.026 (.117)
Trust * spending	.004** (.002)	−.012** (.006)	−.009* (.005)	.001 (.003)
Freedom * spending	−.010* (.006)	−.042* (.022)	−.038* (.023)	−.007 (.011)
Period effects	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes
Observations	523	523	506	506
Countries	65	65	65	65
Within R^2	.372	.267	.229	.319
Between R^2	.392	.654	.687	.335
Wald Chi squared	549.91	658.26	996.80	951.66
Spending effect at:				
Minimum (BRA)	−.200*** (.059)	.125 (.174)	.005 (.147)	.029 (.101)
10th percentile	−.177*** (.051)	.063 (.152)	−.042 (.128)	.032 (.087)
25th percentile	−.149*** (.042)	−.013 (.129)	−.098 (.109)	.036 (.073)
Median	−.121*** (.035)	−.091 (.112)	−.156 (.095)	.039 (.061)
75th percentile	−.059* (.033)	−.259** (.111)	−.282*** (.100)	.048 (.056)
90th percentile	−.012 (.046)	−.389*** (.143)	−.379*** (.131)	.054 (.074)
Maximum (DEN)	.082 (.082)	−.645*** (.239)	−.570*** (.219)	.066 (.129)

Note: Standard errors in parentheses. Significance at *$p < .10$, **$p < .05$, ***$p < .01$. Marginal effects in the bottom panel are calculated by the Delta method (Brambor, Clark, and Golder 2006). The sample excludes Trinidad and Tobago, Brazil and Belize (the bottom) and Denmark, Norway, and Sweden (the top).

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