

Historical Trust Levels Predict the Current Size of the Welfare State

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ABSTRACT

Using cross-sectional data for 77 countries, we apply instrumental variable techniques based on a language characteristic, climate and a dummy for constitutional monarchies to demonstrate that historical trust levels predict current welfare state size, and that trust is positively linked to regulatory freedom. We argue that trust and trustworthiness are necessary, but not sufficient, conditions for societies to develop successful universal welfare states that would otherwise be vulnerable to free riding and fraudulent behavior. Our results do not exclude positive feedback from welfare state universalism to individual trust, although we claim that the important causal link runs from historical trust levels to the current size of the welfare state.

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SUMMARY

Despite the fact that large welfare states are vulnerable to free-riding, the idea that universal welfare states lead to higher trust levels in the population has received some attention and support among political scientists recently. This paper argues that the opposite direction of causality is more plausible, i.e. that populations with higher trust levels are more prone to creating and successfully maintaining universal welfare states with high levels of taxation where publicly financed social insurance schemes.

The hypothesis is tested using instrumental variable techniques to infer variations in trust levels that pre-date current welfare states, and then using the variation in historical trust levels to explain the current size and design of the welfare state, and finally comparing the explanatory power of trust to other potential explanatory factors such as left-right ideology and economic openness.

To infer variation about historical trust levels, we use three instruments, all used previously in the trust literature: the grammatical rule allowing pronoun-drop, average temperature in the coldest month and a dummy for constitutional monarchies. Using cross-sectional data for 77 countries, we show that these instruments are valid and that countries with higher historical trust levels have significantly higher public expenditure as a share of GDP and also have more regulatory freedom. This finding is robust to controlling for several other potential explanations of welfare state size.

I. INTRODUCTION

Universal access to public goods, transfers and services, with little needs testing involved, entails a strong temptation to engage in free riding. When people are repeatedly tempted to obtain benefits for which they have no objective need or are ineligible, the effect on trust and trustworthiness is likely to be negative – as demonstrated theoretically by Lindbeck (1995) and empirically by Heinemann (2008) and Roth (2008). Despite this, the cross-country correlation between welfare state size and trust is positive, and a number of studies claim that the correlation is causal in the sense that the welfare state produces trust and social capital (Barr, 2004; Kumlin and Rothstein, 2005; Uslaner and Rothstein, 2005; Aghion et al., 2010a).

The link from welfare state universality to individual trust is explained by Kumlin and Rothstein (2005) by the idea that people infer others' trustworthiness from how they perceive public service bureaucrats. Small welfare states with needs-tested public services will give rise to suspicions concerning poor procedural justice due to discretionary bureaucratic power. In contrast, larger welfare states with universal welfare programs “give rise to a sense of equal treatment and that the ‘rules of the game’ in society are based on principles of fairness.” (p. 349).

We argue instead that trust is high in universal welfare states, not because welfare state universality creates trust, but because trusting populations are more likely to create and sustain large, universal welfare states. Our argument is that social trust – the belief that most other people can be trusted to behave in an honest way – ensures nations from major free-riding problems and thus enables welfare states to develop and remain fiscally sustainable.

To support our claim, we use instrumental variables (IV) to demonstrate that variations in historical levels of trust predict cross-country differences in current welfare state design. We do this by examining 77 democratic and semi-democratic countries, using instrumental variables based on

linguistics, an old political institution (monarchy), and climate to ensure that we are using the historically contingent variation in trust levels to explain welfare state size and universality. We find that high-trust countries are clearly able to finance higher total government expenditures and raise larger revenues, and that high-trust countries are characterized by less market regulations.

The paper proceeds as follows: In the next section, we outline our theoretical considerations. Section 3 describes our data and the estimation strategy used in section 4, which presents the results. Section 5 concludes the paper by discussing the implications of our findings and how they might solve extant puzzles in the literature.

II. THEORETICAL CONSIDERATIONS

1. How to identify causality?

Much research suggests that social trust affects economic and political behavior (see, e.g., Putnam, 1993; Knack and Keefer, 1997; Knack, 2002; Roth, 2009). Recently, many studies have particularly noted the apparent association between the high trust levels in the Nordic countries and their extended welfare state policies (Delhey and Newton, 2005; Kumlin and Rothstein, 2005; Bjørnskov, 2007; Nannestad, 2008). These studies however interpret the association in different ways.

There are three possible ways to interpret the causality of the correlation between welfare state universality and trust, namely, as running: 1) from welfare state design to trust; 2) from trust to welfare state design; or 3) from some omitted variable(s) to both trust and welfare state design. Discussing these three possibilities, Rothstein (2008) claims that the link from trust to welfare state design is difficult to evaluate due to lack of data on historical trust levels, i.e., trust before the universal welfare state existed. However, there are in fact several ways to handle this lack of data that can shed light on the causal association between the size of welfare states and social trust.

First, as far as studies of US immigrants can inform us about historical trust levels, the Nordic countries seem to have been characterized by high levels of trust long before the implementation of extensive welfare state policies in the 1960s (Tabellini, 2008; Uslaner, 2008). A long tradition in psychology indicates that a basic sense of trust in strangers is instilled in people in early childhood and remains relatively stable for the rest of their lives, absent major negative events (e.g., Katz and Rotter, 1969; Dohmen et al., 2008;). As children tend to copy the social trust of their parents, aggregate trust levels are thus likely to remain stable across time (Tabellini, 2008).

Reflecting this process, rather than being influenced by the needs-tested US welfare state, people in the United States of Swedish, Norwegian, Danish or Finnish heritage are today approximately 10% more likely to believe that “most people can be trusted” than the average American (Uslaner, 2008). Uslaner, who also documents that descendants of immigrants from low-trust countries are likely to be substantially less trusting than the average American, furthermore demonstrates that it does not seem to matter for trust levels how recently immigrants came to the United States. Albeit merely suggestive, the above findings clearly indicate that Scandinavians were highly trusting before the introduction of universal welfare policies in the 1950s and 1960s.

Second, IV techniques can be used to separate historic trust levels (definitely not caused by the welfare state) from recent variation in trust (possibly endogenous to various factors, including welfare state size and design). To apply this approach validly in our case, we must use factors with deep historical roots as instruments to sort out the causality. We therefore use a language characteristic, a climate variable, and an institutional “leftover” from previous centuries.

The first variable is the “pronoun-drop characteristic”, also known as “null anaphora” (Chomsky 1981; Kashima and Kashima 1998) of a country’s dominant language. This is a dummy variable indicating if the language allows the personal pronoun to be dropped. While neither English nor the Nordic languages allow this, several major languages, such as Spanish and most African languages, do. For example, in Brazilian Portuguese, the sentence “Vistes aquele garota?”, meaning “Did you see that

girl?”, does not have to include the personal pronoun “you”. We get these data from Kashima and Kashima (1998).

Tabellini (2008), who introduced the pronoun-drop variable to the trust literature, argues that languages that allow the personal pronoun to be dropped tend to reflect cultures in which respect for individual rights is relatively weak. Instead, the cultural focus is on the wellbeing of the collective, to which the individual may under some circumstances need to submit herself. This means that the grammatical rule that forbids pronoun dropping is positively linked to trust – but not positively correlated with welfare state size or universality. In fact, a focus on individual rather than group rights and identities would seem inconsistent with building a large and universal welfare state, which stresses broad group access to welfare services instead of individual treatment. If anything, one would expect a collectivist construction such as the modern welfare state to be more likely to be introduced and accepted by voters in countries with collectivist cultural characteristics. We also note that welfare regimes vary considerably within the group of countries with languages not allowing pronoun dropping.

As a second instrument, we use the average temperature in the coldest month of the year. The idea behind this instrument can be traced to Aristotle: in countries with relatively cold winters, people were historically more dependent on strangers for survival. Strangers in need in such countries would receive help while, due to scarcity, strangers and friends alike would not receive help if not objectively in need. The colder the winters are, the more likely is it that trust in strangers constitutes an evolutionarily dominant strategy in which family and strangers alike engage in an ancient form of needs testing. The alternative would seem to be groups characterized by Banfield’s (1958) “amoral familism” that would tend to be too small to be biologically sustainable in difficult climates. Again, if anything, this instrument would be negatively associated with the propensity to implement a universal welfare regime but positively correlated with trust in strangers.

Our third instrument is a dummy for the existence of monarchical institutions, i.e., countries being “ruled” by a king, emperor or other sovereign. In our sample, monarchs have no direct power, as

all countries are democratic or semi-democratic. The fact that these countries are constitutional monarchies is actually a reason why a monarchy dummy can serve as an indicator of historical trust levels: Rustow (1970) describes how the transition to democracy varies between countries. Some countries choose to keep the monarchy, stripped of formal political power. In other countries, the monarchy was completely and violently abolished. We argue that in countries with higher trust levels, transition to democracy could take place with less violence and without the need for a complete abolishment of the monarchy. Indeed, Bjørnskov (2007) confirms that populations in monarchies are significantly more trusting. There is little reason to believe that monarchies are better at sustaining welfare states than regimes with other kinds of titular heads of state. The rise of a welfare state would seem to be associated with the rise of democracy in association with voter preferences for redistribution to a median voter, and not the existence of an ancient institution with no formal powers (cf. Stigler, 1970).

However, as recently emphasized by Rodrik (2007), having instruments that work in an econometric sense is not equivalent to proposing a causal theory. We do not claim that pronoun drop, winter temperatures or monarchical institutions are important explanations of welfare state design. Indeed, proper identification of the effects of social trust depends on their *not* providing useful explanations. We merely use these variables to infer historical trust levels to demonstrate that these can be used to predict properties such as size and universality of current welfare states, to which we now turn.

2. What exactly is welfare state size and universality?

The strand of social science research that classifies welfare states can be traced back at least to Titmuss (1974), who distinguishes between three ideal types of the welfare state: the “marginal” (typical of Anglo-Saxon countries), the “industrial achievement” (typical of Central European countries) and the “institutional” (typical of the UK and Scandinavia). More recently, the standard reference was for a

long time Esping-Andersen (1990), who identified three models, similar to those identified by Titmuss: the “liberal” (in the European sense of the word), the “corporatist” and the “social democratic.” Replicating and correcting errors in the Esping-Andersen classification, Scruggs and Allan (2008) later found very limited empirical support for the “three worlds” typology.

Adding to the confusion, Bergh (2004) surveys the literature, finding a plethora of labels: “universal,” “social democratic,” “institutional,” “comprehensive,” “encompassing” and “Scandinavian” that are all used to describe roughly the same construction – states where the government not only provides legal protection, defense, basic schooling and health care to its citizens, but also functions as the main institution providing risk insurance and life-cycle redistribution for all citizens. In other words, total government size is often a good measure of welfare state universality, especially when controlling for defense spending that in some countries increases government size without being part of the welfare state.

For the same reason, standard measures of the welfare state, such as public final expenditures on consumption or the OECD’s social expenditures database, would be improper measures of universality and the full size of the welfare state. For example, the Nordic welfare states are actually not very different when we look only at public expenditures on health care or schooling. To measure welfare state size we instead use total public revenues as a share of GDP (and total public expenditures as a robustness test).

Total revenues and expenditures not only include final consumption expenditures on necessary and common public goods but also redistributive activities such as transfers, benefits and other “pure” welfare state costs. This measure has been criticized for exaggerating the size of the Nordic welfare states. For example, child grants are typically given as benefits in the Nordic countries rather than tax deductions, thus inflating total taxes and total revenues. In the context relevant here, this is exactly what we wish to capture: the tendency of universal welfare states to rely relatively more on the state providing such goods directly, whereas other countries use the market or the family as agents of welfare

provision.¹ Such types of welfare provision are factors that necessitate a larger state and thus a substantially larger need to finance it. We do, however, check our results by controlling for final consumption expenditures and defense spending, in which case differences between countries are mainly driven by differences in the size of transfers and the transaction costs they may incur on the state. This reflects the varying degrees to which countries rely on the state (rather than the market or the family) to handle life-cycle redistribution and risk insurance.

3. The welfare state and trust: an alternative hypothesis

In a survey of the trust literature, Nannestad (2008) notes that

... because the universal welfare states are also high-trust countries, it is tempting to hypothesize that it is their high level of generalized trust that has enabled them to solve the collective action dilemma created by their welfare systems ... Thus, generalized trust is what makes the universal welfare system sustainable and allows equality to coexist with wealth. This line of reasoning would at the same time explain why countries with lower levels of generalized trust have developed different welfare systems that give rise to fewer and smaller collective action dilemmas. (p. 430)

Extending the size of the state beyond that of a minimal or “watchman” state thus entails a number of collective action dilemmas. Nannestad’s argument is consistent with arguments in Jensen and Svendsen (in press), and also with the theoretical models of Lindbeck (1995) and Lindbeck, Nyberg and Weibull (1999), according to which a social norm of public permissiveness prevents a small number of citizens from exploiting the welfare state, which would result in exploding public expenditures. In the former, the main argument is that most people adhere to common, stable norms of working hard and not taking advantage of services for which they have no need or are ineligible because other people

¹ An alternative motivation for our measure would be that the literature on universality agrees on few things except that universal welfare states have higher taxes and higher public expenditures, so these are what we measure.

adhere to the same norms. Furthermore, informal institutions such as trust have gradually become integrated and codified in formal institutions over time such as regulations protecting a capitalist welfare state (Bergh, 2006; Jensen and Svendsen, in press). In the Lindbeck papers, the argument rests on the assumption that the norms and work ethics necessary to finance the welfare state are stronger in countries that managed to implement such systems, but prone to erosion over time.

In other words, the causal mechanism may well be that high trust levels increase the feasibility of generous welfare states. We stress three potential mechanisms:

1. Without trust – and trustworthiness – universal welfare states would run into problems caused by free riding and may end up in financial distress due to increasing welfare costs. Since many public goods and services are available to everyone in society, costs are sensitive to groups taking advantage of those goods and services although they are either not de facto eligible for them or not in actual need (Algan and Cahuc, 2009). Whereas other regimes include some form of strong needs testing to avoid excessive costs of welfare provision, such mechanisms are rarer the more universal is the welfare state. To the extent that social trust – in this context, that people trust fellow citizens not to take advantage of the system – makes people less likely to exploit the system improperly, trust protects a universal welfare state from exploding costs.
2. The pressure on public bureaucracies administering universal welfare policies is strong and the repercussions for bureaucrats not following the rules are potentially high. As such, the existence of such policies puts additional pressure on the bureaucracy and makes the trustworthiness of bureaucrats central to the feasibility of administering such policies. This point also includes the perceived need to regulate, as Aghion et al. (2010b) argue that low trust leads voters to demand more detailed regulation, since they do not trust bureaucrats with discretionary power. Through such mechanisms, trust both protects the state against malfeasance and high monitoring costs when trying to avoid such malfeasance.

3. Finally, universal welfare states require high taxes, which make them potentially vulnerable to eroding tax morals and extensive underground economies. In high-trust societies, these problems are less severe, as trusting populations are less likely to cheat on taxes or seek transfers to which they are not entitled. In addition, bureaucracies are generally less corrupt and more efficient in high-trust societies.

Thus, trust enables more extensive welfare state policies by limiting their costs, as indicated by Figure 1a, where the curve depicts the maximum level of government activity that is fiscally sustainable at a given trust level, all else being equal. As such, the figure reflects our simple theoretical considerations, as it depicts the level of government expenditures that are *possible*, but not necessarily the level actually chosen. The realized level is governed by two processes. We think of these processes as equivalent to decisions subject to a participation constraint, which is primarily political, and an incentive constraint, which outlines the fiscal feasibility of a given political choice. In other words, the line in Figure 1a illustrates the incentive constraint while the participation constraint affects how closely countries are situated to the maximum feasibility line. This implies two processes related to each constraint: 1) fiscal sustainability and 2) the political choice of whether or not to use the financial leeway.

The main function of social trust in the above framework is in moving the incentive constraint, the curved line along which a welfare state can be financed. At a given trust level, we also expect countries with smaller government to regulate more, and vice versa. Figure 1b summarizes the links between trust and welfare state design identified in related literature and those explored in the present paper.

Insert Figure 1a and 1b about here

In the next section, we test our hypothesis using a cross-section of democratic and semi-democratic countries for which we have reliable trust data.

III. DATA

In the following, we employ data from a wide range of sources. The data cover 77 democratic or semi-democratic countries, defined as those having an average Gastil index below 4 in the 2000s (Freedom House, 2009). We observe these countries in 2008.

First, our trust measure has become standard over the last decade. It is the percent of a population that answers yes to the question “In general, do you think most people can be trusted or can’t you be too careful?” While this question may seem vague and imprecise, it performs surprisingly well in test-retest situations and correlates strongly with, for example, return rates in wallet-drop experiments (cf. Knack and Keefer, 1997). Nannestad (2008, p. 419) also notes that “respondents do not in general seem to find the generalized trust question difficult,” as only very small shares of respondents do not respond to the question. While Glaeser et al. (2000) question the degree to which answers to the trust question reflect actual behavior, recent experimental evidence suggests that this trust measure is a clear determinant of actual trusting behavior, although perhaps only in situations in which the stakes are of economic significance (Sapienza et al., 2007; Cox et al., 2009).

The trust levels within our sample are distributed broadly, ranging from 3.4% (Cape Verde) to 64.3% (Sweden), with a mean score of 26.2%. These scores have been demonstrated to remain remarkably stable for most countries, although a few have experienced clear trends in recent decades.² We nevertheless explicitly use the variations in trust levels that precede the rise of modern welfare states in an IV approach, described in more detail below.

² The examples of obviously non-stationary trust scores since the early 1980s include the much-discussed declines in the USA and the UK, but also positive trends in Denmark and Uruguay.

To describe the extent of current welfare state institutions, we use the cost of welfare state policies as well as the extent of labor market regulations and other policies supporting such institutions. Our preferred measures of the extent of welfare state policies are the total 2008 government revenues in percent of GDP from CIA (2010). These data capture the size of the public sector, including all transfers and benefits payments and the need to finance them. In a few instances, we provide results with total expenditures (final consumption plus transfers and redistribution) instead of revenue.³

According to our theory, historical trust levels let countries develop more universalistic welfare policies, but trust and trustworthiness also partially substitute for controls and regulations, following the Aghion et al. (2010b) argument. To test this part of our hypothesis, we use a set of established indices of regulatory freedom obtained from the Fraser Institute's Economic Freedom of the World: 2008 Annual Report (Gwartney et al., 2008).

We supplement the specification with a set of other variables. First, we add regional dummies to control for broad regional differences in culture and political tradition; we only report the post-communist dummy as these countries are arguably different (Rose-Ackerman, 2001; Bjørnskov, 2007). Second, we add a measure of openness (trade volume as a percent of GDP) in view of Rodrik's (1998) compensation hypothesis, which suggests that more open countries have larger welfare states.⁴ We approximate Wagner's Law by adding GDP per capita; both this and the openness measure are from Heston et al. (2006). Finally, to proxy for the political environment, we use the ten-year averages of government ideology, taken from the Database of Political Institutions and following the approach of Bjørnskov (2008), and a dummy for common law countries that have historically differed in terms of

³ All results in the following are robust to being estimated with expenditures instead of revenues. We refer interested readers to the working paper version of the paper.

⁴ The idea that open economies develop larger welfare states in response to the volatility caused by economic openness (known as the compensation hypothesis) can in fact be traced back to Lindbeck (1975). Recently, however, Kim (2007) has argued that the link between economic openness and volatility is absent, both theoretically and empirically.

economic ideology. In additional regressions, we also add government final consumption expenditure (as percent of GDP) from Heston et al. (2006), military spending (percent of GDP) from CIA (2010), and the unemployment rate in 2008 from CIA (2010). Table 1 provides the descriptive statistics.

Insert Table 1 about here

IV. EMPIRICAL RESULTS

We first test the association between trust and welfare state size. A preliminary indication can be gauged from the scatter plot in Figure 2, which presents the theoretical schematic in Figure 1a using actual data. The potential size of government expenditures clearly increases with trust, while the southeast quadrant includes both countries constrained by their level of development (i.e., India, Thailand and Taiwan) and some countries in the Anglo-Saxon tradition (i.e., Australia, Canada, New Zealand and the USA). Conversely, the Nordic welfare states are all situated in the northeast corner. With the perennial exception of France (and Belgium), perhaps the developed country with the strongest statist tradition, the northwest quadrant of the figure is empty, consistent with our expectation that low-trust countries cannot sustain large welfare states.

Insert Figure 2 about here

The same picture emerges from Table 1 when one compares the differences between the low-trust and high-trust halves of our sample. While high-trust countries are in general significantly richer than low-trust countries, consistent with the literature on trust and growth (Knack and Keefer, 1997; Roth, 2009) government revenues are likewise higher. The average government revenues (% of GDP) in the former group is approximately six percentage points (or 20 percent) larger than in the latter.

Among the potential explanatory variables in Table 1, the only significant differences between the sample halves are in business regulations and the overall regulation index.

1. Trust and overall government expenditure

Noting that the association, as claimed in the literature, is quite real, we proceed to a set of cross-country estimates in Table 2, using the instruments described above. We report the baseline results using government total expenditures (% of GDP) as the dependent variable in column 1. Results in column 2 pertain to using government total revenues as the dependent variable.

Insert Table 2 here

The cross-sectional evidence in the table indicates that the simple pattern in Figure 2 is replicated in the table. The table also shows that our simple specification explains a reasonable part of the variation, and that the instruments are sufficiently strong and valid, judging from the first-stage statistics and Hansen's J statistic that indicate that the instruments meet the exclusion restrictions. We furthermore note that a Kleibergen-Paap rank LM test of weak identification indicates only a 10% maximal IV relative bias.

Among the determinants of government expenditures and government revenues in 2008, we find the strongest association with social trust, along with openness, which is significant for expenditures but not revenues. However, neither ideological nor common-law countries (basically the United Kingdom and its offspring) are significant, and the post-communist dummy is only associated with government expenditures at the ten percent level.

To verify the robustness of our results, we exclude 11 obvious outliers (defined by their residuals) in column 3, in which case we find a slightly smaller coefficient for trust as well as clear indications of

Wagner's Law, as GDP becomes strongly significant when outliers are removed.⁵ In columns 4 and 5, we partial out two components of the government budget that are arguably not related to welfare state activities. In column 4, we add the share of GDP spent on the military and other government final consumption to our specification, which effectively leaves us with the variation in government activities directly attributable to welfare state activities, such as transfers, subsidies and non-minimal government services. This exercise yields a slightly larger point estimate of trust. In other words, the results indicate that the effect of trust is not likely to work through the scope of necessary government responsibilities, but through the parts of government activity related to welfare state design. In column 5, we subtract all military expenditures from total government expenditures. This again provides a quantitatively similar estimate of the influence of trust. Finally, in column 6, we include the 2008 unemployment rate. The inclusion of this variable both makes GDP per capita, the common law dummy and military expenditures significant; it is also strongly significant per se, and provides the best fit of the data. However, the inclusion of unemployment does not significantly change the estimate of trust.

Our results are not only statistically but also economically significant: the estimates suggest that a one-standard-deviation increase in trust leads to a sizable equilibrium increase in government expenditures and revenues of approximately 40–55% of a standard deviation.

2. Trust and government regulation

⁵ Several countries are consistent outliers in our analyses: those with governments smaller than expected include Finland, Poland, Taiwan, Thailand and the USA, while those with governments larger than expected include Bolivia, Hungary, Italy, France and a few aid-dependent, democratic developing countries. While the exclusion based on residuals may be a debatable procedure, we note that alternatives tend to point to the same set of outlier countries and similar results. As a further robustness test, we did a full set of jackknife estimates in which we excluded one of the 77 countries in turn. The result of the jackknife is that estimates varied between .32 and .47. In other words, the point estimate of trust varies only moderately and stays significant at the five percent level or better throughout.

We thus find that social trust is clearly associated with the size and scope of welfare state spending. A related issue is whether high-trust countries regulate less tightly for various reasons. In fact, high-tax Nordic welfare states have typically made their economies more competitive by strategically deregulating parts of the public sector, as demonstrated by Bergh (2006). This finding is very much in line with the positive links between trust and equilibrium regulatory freedom (Aghion et al., 2010b), between trust and deregulation of business (Heinemann and Tanz, 2008) and between trust and voters' acceptance of policy innovation (Knack, 2002). Thus, tight regulation of parts of the economy could in principle substitute for government financing of activities. We therefore need to ascertain that high-trust countries do not simply regulate instead of finance activities directly. We test this possibility and explore its consequences in Table 3.

Insert Table 3 about here

Using the Fraser Institute index of regulation, we essentially retest the findings of Algan and Cahuc (2009) and Aghion et al. (2010b) in a larger sample of countries. The results in Table 3 confirm that trust is associated with regulatory freedom. This result is robust to excluding outliers, but appears to be driven by the business and credit areas, not by labor market regulations (contrary to Algan and Cahuc, 2009). We also find that richer countries have less rigid regulations, that common-law countries have fewer business and labor market regulations, whereas post-communist countries have clearly deregulated their labor and credit markets and openness there is associated with the level of credit market freedom. A final question then is whether regulatory freedom is associated with larger or smaller welfare states.

The further results in Table 3 indicate that regulatory freedom in the business area is significantly associated with government expenditures and revenues, although only at the 10% level, while the other

areas are not.⁶ We also find that when including business regulations, the coefficient of social trust increases markedly. While we do not want to stress this result too much, it is indicative of an indirect effect exerted through regulation.

Taking the extent of our findings at face value indicates that a one-standard-deviation shock (14 percentage points) to social trust leads to an increase in freedom from business regulations of almost one point on a ten-point scale. In total, a one-standard-deviation shock to trust thus leads to an increase in total government revenues of approximately 6.5 percentage points (60% of a standard deviation). This effect can be decomposed into a direct effect of 8.5 percentage points on revenues, respectively, and indirect effects through business regulations of approximately –2 percentage points. As these effects are sizable and not due to government final consumption expenditures, but most likely operate exclusively through welfare state-related government activities (cf. Table 2), we proceed to discussing their relevance.

V. DISCUSSION AND CONCLUSIONS

A growing literature connects the extent of the welfare state with levels of social trust. For obvious reasons, this literature has taken the Scandinavian welfare states as its starting point due to their record levels of trust as well as the size, scope and universality of their welfare regimes. In this paper, we have argued that trust sustains large, universal welfare state through three main mechanisms: 1) by limiting problems caused by free riding and thus protecting the state from increasing welfare costs; 2) by affecting the trustworthiness of both the bureaucrats central to the feasibility of administering such policies as well as the regulatory framework, effectively allowing fewer and less-detailed regulations, thereby leading to a more productive private sector; and 3) by limiting financing problems associated

⁶Robustness tests (not shown) of the results indicate that the weakly significant results become strongly significant when excluding the same group of outlier countries identified in Table 2.

with citizens operating in the underground economy, cheating on taxes and seeking transfers to which they are not entitled.

Of course, the mechanisms described above do not exclude the possibility that certain types of welfare policies may have a positive effect on trust (as suggested by Barr, 2004, and Kumlin and Rothstein, 2005) or that institutions characterized by economic freedom positively affect trust-levels (as suggested by Berggren and Jordahl, 2006). Still, our relatively simple evidence in section 4 indicates strongly that what we consider the long-run equilibrium level of government expenditures is positively affected by trust. Importantly, we have shown that trust works through two channels: a direct effect not captured by an array of institutional data and an indirect effect operating through more regulatory freedom.

The effects are not only statistically significant, but also economically relevant. For countries with one standard-deviation higher trust, the direct effect on public expenditure amounts to approximately 8% of GDP, while an indirect effect, operating through less detailed regulations, reduces the full effect by approximately 2% of GDP. We note that this corresponds well to the difference between an average democratic country and the Nordic welfare states. In other words, our findings have the desirable effect of making the Nordic countries essentially “ordinary” cases of institutional choice rather than outliers, with seemingly socialist welfare regimes combined with capitalist economic systems in an apparently ideologically incoherent mix.

As a corollary, we might add that Scandinavia has historically seemed an outlier in Western civilization. Lookofsky (2008), for example, notes that the centuries-old Scandinavian legal tradition of accepting oral agreements as legally binding can be seen as a reflection of a similar normative tradition of impersonal honesty. Likewise, even though Denmark and Sweden both became absolutist regimes in the seventeenth century, historians often note that Scandinavian absolutism was particularly weak compared with such regimes in the rest of Europe. Reflecting Putnam’s (1993) original idea, it would be productive to explore the special cultural and historical traits of Scandinavia that seem to have affected

economic, social and political behavior and continues to set these countries on a somewhat different behavioral path from that of most other countries.

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Table 1. *Descriptive statistics*

	Mean	Std. dev.	Observations	Below median trust	Above median trust	Nordic mean
Social trust	26.621	14.065	79	16.168	37.342	58.434
Log GDP per capita	9.030	1.025	79	8.649	9.421	10.193
Postcommunist	.203	.404	79	.275	.128	0
Openness	75.709	37.446	79	74.456	76.994	69.551
Common law	26.621	14.065	79	.175	.231	0
Political ideology	.098	.561	79	.103	.093	-.102
Unemployment	8.810	8.959	74	9.647	8.018	4.560
Regulatory freedom	6.844	.887	78	6.563	7.124	7.882
Business regulations	6.199	1.234	78	5.725	6.672	8.226
Labor regulations	5.695	1.297	78	5.497	5.893	5.976
Credit regulations	8.637	.877	78	8.465	8.809	9.448
Government spending	31.821	11.347	77	29.562	36.083	45.432
Government revenues	32.314	10.729	76	29.607	35.278	40.056

Table 2. *Trust (instrumented) and welfare state institutions*

Dependent variable	Government revenues 1	Government expenditures 2	Government revenues 3	Government revenues 4	Nonmilitary expenditures 5	Government revenues 6
Social trust	.361** (.182)	.470*** (.167)	.367*** (.123)	.429*** (.163)	.403*** (.153)	.422*** (.146)
Log GDP per capita	1.636 (1.616)	3.289* (1.826)	6.371*** (1.004)	1.585 (2.063)	1.219 (1.561)	3.558** (1.764)
Postcommunist	8.777 (5.424)	9.078* (4.849)	8.483*** (3.491)	7.186 (4.801)	5.803 (4.911)	.887 (4.424)
Openness	.068** (.031)	.054* (.031)	.032 (.026)	.058* (.031)	.084** (.038)	.045 (.036)
Common law	1.372 (2.775)	-.518 (2.952)	-1.197 (2.076)	-2.209 (2.504)	-2.103 (2.902)	-8.986*** (2.594)
Political ideology	-.489 (1.617)	-1.473 (1.943)	-2.003 (1.477)	-.587 (1.877)	.792 (1.728)	-1.291 (1.860)
Military expenditures				.534 (.804)		1.309* (.747)
Government final consumption				.681** (.351)		.349** (.164)
Unemployment						-.246*** (.095)
Observations	76	77	65	72	72	69
Adjusted R squared	.329	.354	.706	.463	.409	.579
F statistic	7.41	8.97	19.37	10.00	8.19	9.10
First stage F	9.44	9.53	7.61	7.35	12.59	10.30
First stage R squared	.316	.317	.358	.289	.374	.372
Hansen J statistic, $p <$.856	.755	.947	.747	.536	.184

Note: *** (**) [*] denote significance at $p < .01$ ($p < .05$) [$p < .10$]. The dependent variable is total government revenue as percent of GDP in columns 1, 3 and 4, total government expenditures as percent of GDP in column 2, and total non-military government expenditure in column 5. All regressions include dummies for Asia, Latin America, North Africa and the Middle East, and Sub-Saharan Africa. Instruments are dummies for pronoun-drop languages and monarchies, and the average temperature in the coldest month of the year. Results in column 3 exclude all observations with an absolute residual (calculated from the regression in column 1) larger than two standard deviations.

Table 3. *Trust and welfare state, institutional channels*

Dependent variable	Regulatory freedom 1	Business regulations 2	Labor regulations 3	Credit regulations 4	Government revenues 5	Government revenues 6	Government revenues 7
Social trust	.047*** (.013)	.067*** (.017)	.036 (.023)	.037*** (.014)	.610*** (.202)	.537*** (.194)	.551*** (.200)
Log GDP per capita	.388*** (.137)	.407*** (.153)	.500** (.234)	.257* (.134)	3.849* (2.148)	3.591* (2.027)	3.343 (2.047)
Postcommunist	1.047*** (.299)	.321 (.511)	1.632*** (.519)	.944*** (.351)	9.521* (5.136)	11.089** (5.267)	10.383* (5.441)
Openness	.003** (.002)	.002 (.003)	.003 (.003)	.006** (.002)	.056* (.033)	.059* (.032)	.065* (.036)
Common law	.711*** (.174)	.422* (.224)	1.579*** (.299)	.133 (.214)	.523 (3.303)	2.118 (3.379)	−.047 (3.231)
Political ideology	.072 (.134)	.247 (.184)	−.005 (.215)	−.029 (.153)	−.804 (2.164)	−1.344 (1.994)	−1.398 (2.001)
Business regulations					−2.273* (1.319)		
Labor regulations						−1.519 (.941)	
Credit regulations							−1.938 (1.559)
Observations	76	76	76	76	76	76	76
Adjusted R squared	.457	.499	.328	.311	.274	.327	.309
F statistic	9.80	14.49	6.42	3.22	7.73	7.50	7.19
First stage F	8.73	8.73	8.73	8.73	6.27	7.72	7.44
First stage R squared	.311	.311	.311	.311	.235	.292	.266
Hansen J statistic, $p <$.817	.048	.475	.990	.542	.779	.751

Note: *** (**) [*] denote significance at $p < .01$ ($p < .05$) [$p < .10$]. All regressions include dummies for Asia, Latin America,

North Africa and the Middle East, and Sub-Saharan Africa. Instruments are dummies for pronoun-drop languages and monarchies, and the average temperature in the coldest month of the year.

Figure 2. *Trust and the size of the welfare state*

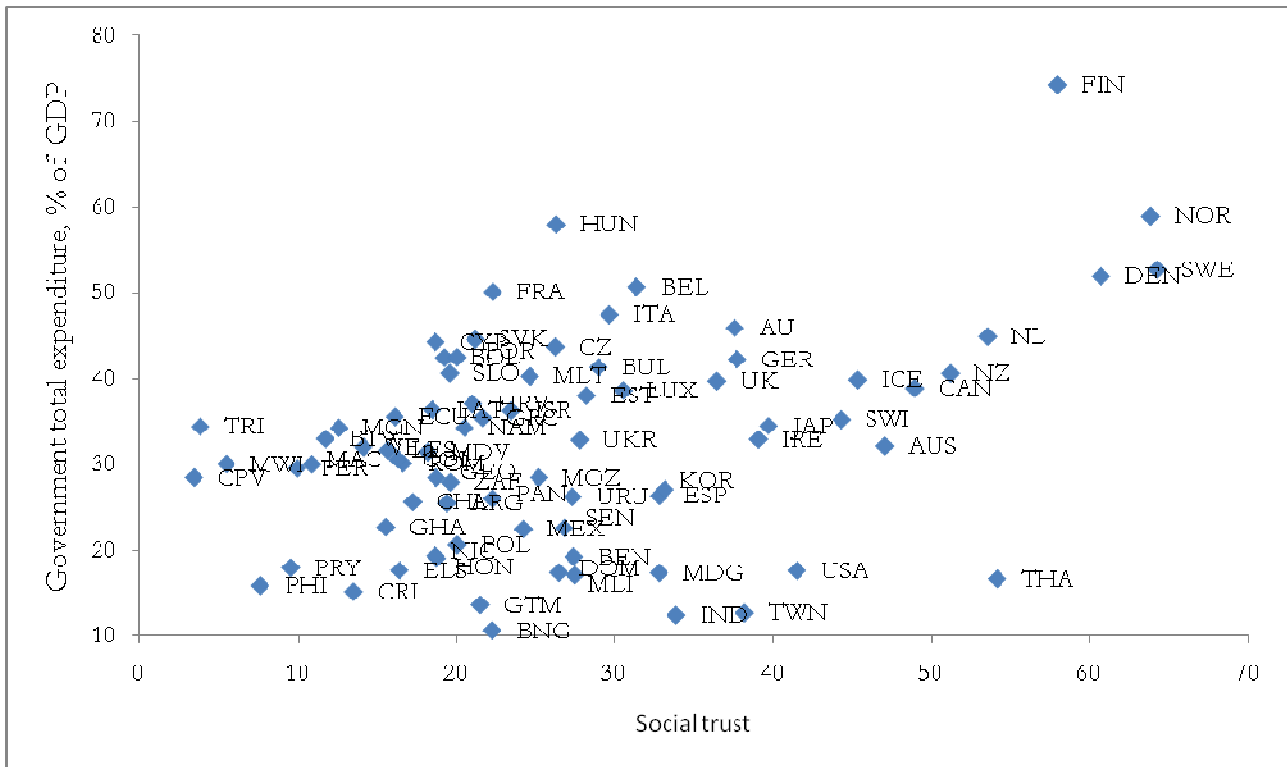
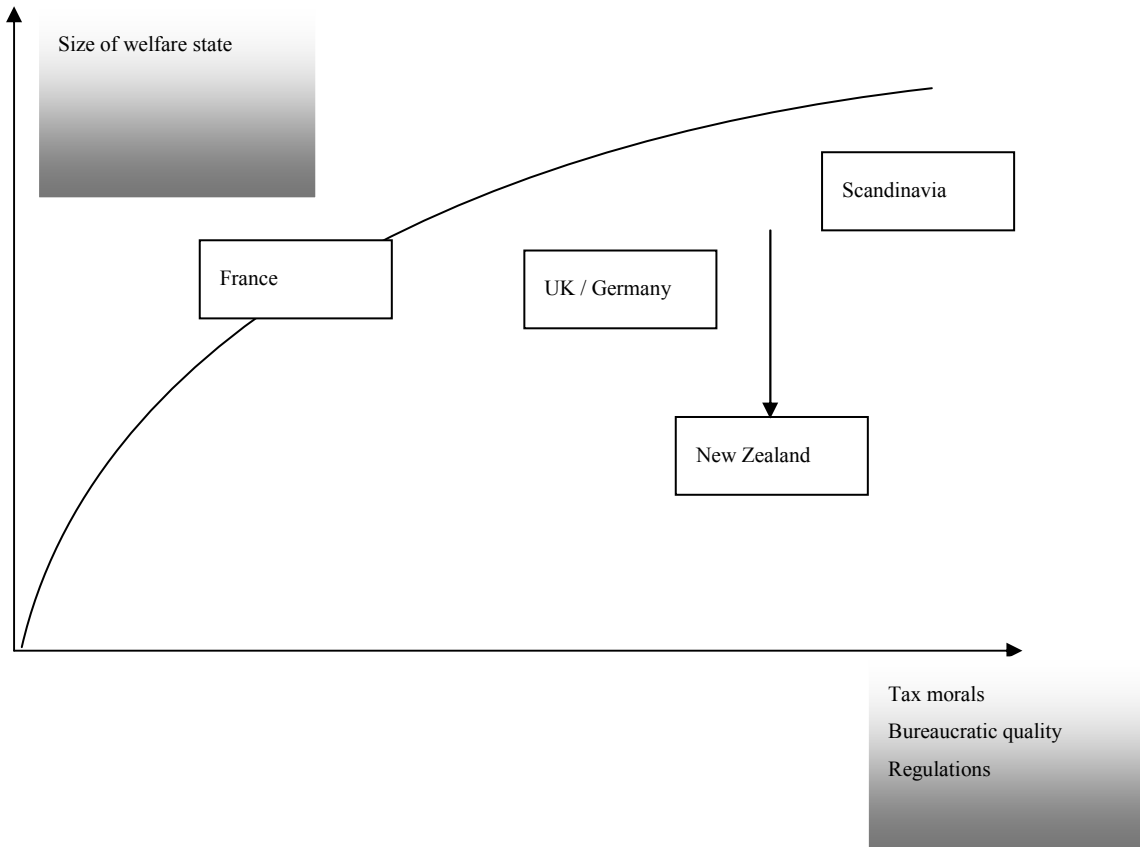


Figure 1

a. Social trust and the degree and universality of welfare



b. Links between trust and welfare state design

