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IFN Working Paper No. 1132, 2016

# **The Moldable Young: How Institutions Impact Social Trust**

Andreas Bergh and Richard Öhrvall

# The moldable young: How institutions impact social trust

Andreas Bergh<sup>+</sup>

Richard Öhrvall<sup>\*</sup>

## Abstract:

Social trust is linked to many desirable economic and social outcomes, but the causality between trust and institutions is debated. Using new data from a representative sample of 2,668 Swedish expatriates (surveyed in the SOM Institute's Swedish Expatriate Survey 2014), we use variation in time spent in the new country to infer about the effect of country level institutions and norms (such as corruption perceptions, average trust levels and various aspects of economic freedom) on social trust. The results suggest that individual trust suffers in countries with high corruption, low trust and low legal quality. The effect is relatively small, occurs mainly during the first 3 to 10 years and is observed only among those aged less than 30 at the time of arrival in the new country. The results are robust to controlling for a large array of individual characteristics (including age), and support the view that social trust is sensitive to events that occur early in life. In contrast, after the age of approximately 30, trust seems to be a highly resilient personal trait.

**JEL Codes:** D13, D83, J62, Z13

**Keywords:** trust, social norms, institutions, migration

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## 1. Introduction

Social trust is briefly explained as the individual attitude or belief that most people can be trusted. As noted by Arrow (1972), trust is a crucial element in most economic transactions, and more recent research has confirmed its empirical relevance. On the country level, average trust can explain for example economic growth (Algan and Cahuc, 2010), macroeconomic stability (Sangnier, 2013) and welfare state size (Bergh and Bjørnskov, 2011). On an individual level, trust is positively linked to prosocial behavior (Sønderskov, 2011), to self-assessed health (Ljunge, 2014a), to happiness (Bjørnskov, 2003) and to personal income (Butler et al., 2016). Given the documented importance of trust, it is natural to ask where trust comes from and what factors influence its development over time.

One strand of the literature sees institutions as having a causal effect on trust. Examples include Knack and Zak (2003), who argue that strengthening the rule of law will increase trust. Similarly, Berggren and Jordahl (2006) examine the role of economic freedom in explaining trust, Rothstein and Eek (2009) argue that perceived corruption affects social trust, and Kumlin and Rothstein (2005) argue that welfare state universality cause trust.

Another strand, with seminal contributions by Putnam (1994) and Uslaner (2002), emphasizes trust as a stable, cultural or personal trait inherited over generations through parental socialization. As such, historical trust levels have been used to explain the emergence of institutions such as the welfare state (Bjørnskov and Svendsen, 2013).

The different views on the causes of trust are closely linked to different views on why people act trustingly. If the trusting attitude is a result of expectations about others being trustworthy and non-trustworthy cheaters being punished, sound legal institutions should promote trust. Along these lines Berggren and Jordahl argue that “developing trust in [others], hinges on being able to rely on a fair and effective system of protective government.” (p. 148). If trust is instead driven by emotions that are independent of the consequences of trusting, institutions might not matter at all, and trust would be explained by cultural factors such as upbringing. The emotional perspective is supported in several recent experiments in economic psychology (see Schlösser, et al., 2016; and Dunning and Fetchenhauer, 2010).

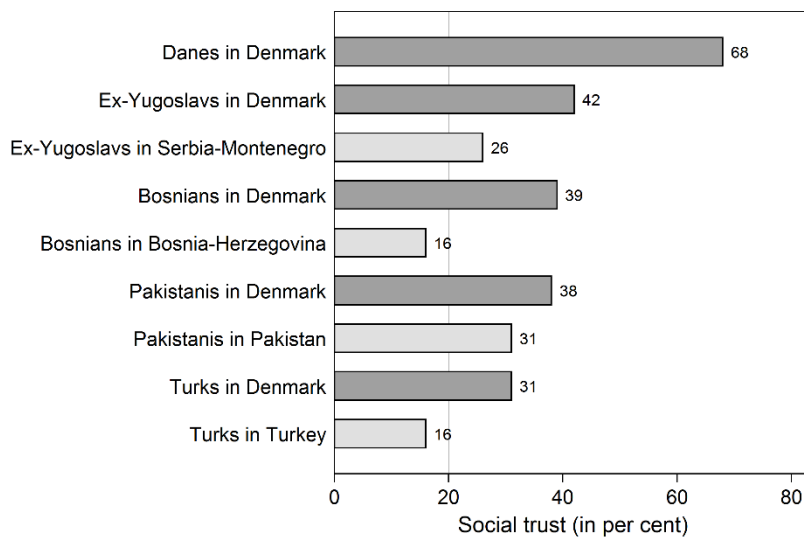
While the literature is seemingly divided, it bears noting that the institutional view and the cultural view are not mutually exclusive. Ljunge (2014b) uses a clever way of identifying the cultural component of trust by studying second generation immigrants in 29 European countries with ancestry in 87 different nations. He concludes that the influence from average trust in the parent's country is quantitatively significant and in magnitude comparable to an increase in income from the bottom to the top three deciles of the income distribution. According to Ljunge's findings, parental transmission of trust is especially strong on the mother's side.

Nunn and Wantchekon (2011) provide a link between the institutional and the cultural perspective by showing that current differences in trust levels in Africa can be traced back to the slave trades, (arguably a negative shock to institutional quality) that have been culturally transmitted over generations through norms, beliefs, and values. Support for the institutional view comes from studies of migration from low-trust countries to high-trust countries (see Dinesen and Sønderskov, 2016 for a survey of these and related studies). For example, Dinesen (2012) examines first-generation immigrants to Northern Europe from the low-trust countries Turkey, Poland, and Italy. Using a matching procedure that compares migrants to similar individuals in the home country, Dinesen concludes that destination-country context has "a massive impact" (p. 495) on the trust of immigrants. Similar results appear in Nannestad et al. (2014) for migrants to Denmark from Turkey, Pakistan, Bosnia-Herzegovina and Serbia-Montenegro.

The results in Nannestad et al. (2014) are summarized in Figure 1, which has been complemented with the average trust level for Denmark, ie. the average share of Danes that agree that most people can be trusted according to the World Values Studies. While all immigrant groups in Denmark report higher trust than their matched counterfactuals (based on age, gender, religious denomination, saliency of religion and educational levels) in the country of origin, they are also substantially less trusting than Danes. Nannestad et al. (2014) conclude that "institutions rather than culture matter for social trust" (p. 544), but their results actually leave plenty of room for a cultural component of trust. The method used in these studies will also be biased if migrants are self-selected based on some unobservable trait not captured by the matching procedure.

The importance of both institutions and culture remains also when studying second generation immigrants: Moschion and Tabasso (2014) study second-generation immigrants' trust in Australia and in the United States, and conclude that both home and host countries matter (with home country trust being marginally more important in the United States).

**Figure 1. Social trust in various population groups**



Comment: Social trust refers to the share who agrees that most people can be trusted, according to survey results presented in Nannestad et al (2014). The estimate regarding Danes in Denmark is an average over estimates from different waves of the European Values Study and a number of similar surveys, taken from Berggren and Bjørnskov (2011).

We contribute by studying a highly related topic, namely social trust among migrants from a high-trust country (Sweden) after having spent varying lengths of time in countries with different (and in most cases inferior) institutions and lower average trust. With data from a representative sample of 2,668 Swedish expats, we use variation in time spent in the new country to infer about the effect of country level characteristics on social trust.

The characteristics of destination countries that we examine are perceived corruption (measured by Transparency International's corruption perception index), aggregate economic freedom (Economic Freedom Index, EFI) and its five sub-components size of government, legal system and secure property rights, access to sound money, freedom to trade internationally and regulation of credit, labor, and business (Gwartney et al., 2015), and average level of social trust from the World Values Surveys and similar studies (taken from Berggren and Bjørnskov, 2011).

Trust among Swedish expats was first studied by Dinesen (2016a, b), who showed that expats are more trusting than the Swedish population due to a combination positive self-selection modified by experiences in the new country. We expand on these results in several ways: By studying more closely how expats are self-selected, by studying the effect of different durations of stay in the new countries, by grouping destination countries according to different types of institutions and by examining the importance of the age at the time of arrival to the new country.

Our results reveal a statistically significant negative effect on trust among Swedish expatriates from exposure to high levels of corruption, low levels of average trust and as well as absence of legal quality. Similar but weaker effects are found for freedom to trade and regulatory freedom. In all cases, effects are driven by those aged 30 or less at the time of arrival to the new country. For those who were older, the trusting attitude appears to be a highly sticky personality trait that prevails also in countries with highly inferior institutions.

The paper proceeds as follows. In the following section, we present our data and empirical strategy. The third section consists of analyses of trust among Swedish expatriates residing in different types of countries. In the fourth and concluding section, we summarize and discuss the implications of our findings.

## **2. Data and empirical strategy**

The exact number of Swedish expatriates is unknown. Estimates vary between 250,000 and 660,000 (Solevid, 2016). In February 2014, 256,180 migrants from Sweden were registered by the Swedish Tax authority in February 2014. Using the tax register of Swedish expats as a frame, the SOM Institute in Sweden conducted a representative survey of Swedish expats in 2014. The survey covers Swedish citizens aged 18-75 years who deregistered from the Swedish Tax Agency population register due to a move abroad, and they were surveyed using a web-based questionnaire during the period 2014-09-27 to 2015-01-30. The survey consisted of a wide range of questions, including questions on social trust and a number of individual characteristics (see Vernersdotter 2016 for

methodological details about the survey).<sup>1</sup> 2,668 expats answered the survey, which corresponds to a response rate of 27 per cent. Unless stated otherwise, the estimates presented here are calculated using weights to take the survey design and nonresponse within country group into account. Among the respondents, 57 percent (unweighted) reside in the 12 most common countries that are listed in Table 1, with the remaining 43 percent being scattered across 98 other different countries, resulting in a sample of 110 countries at most.

**Table 1. Most common residence countries of Swedish expatriates**

	Share of respondents	Share of emigrants 2014
Norway	9	11.4
USA	9	6.3
UK	8	7.1
Germany	5	4.8
Switzerland	5	1.3
Denmark	4	8.2
France	4	1.7
Spain	3	2.4
Finland	3	5.1
Thailand	3	1.4
Australia	2	1.9
Brazil	2	0.4

Source: The SOM Institute's Swedish Expatriate Survey 2014.

22 percent of the respondents have resided in two countries since migrating from Sweden and an additional 15 percent have resided in three or more countries. Our baseline includes respondents who have resided in more than one country, provided that more than half of the total time abroad has been in the country in which they are currently residing, resulting in a sample of 2,092 respondents. As a robustness test, we have verified that the results hold also when limiting the sample to those who have only resided in one country except Sweden (n=1,673). In order to compare the Swedish expats to Swedes residing in Sweden, we also use the SOM institute's 2014 national survey. The survey has 5,835 respondents between 18 and 75 years of age.

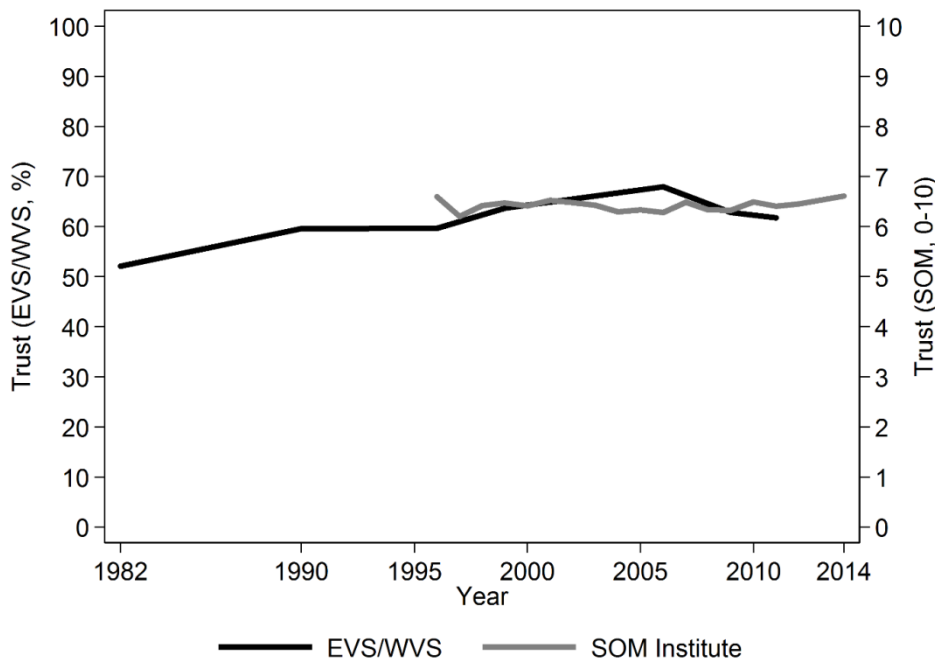
There are many different reasons for migrating from Sweden, the most common three being work in another country, moving to a spouse or family and accompanying spouse/family who have moved.

<sup>1</sup> Data are available through Swedish National Data Service.



As will be shown, there are only small differences in trust among migrants to different types of destination countries. Most importantly, it can be assumed that the nature of such selection effects is roughly constant over time. Under that assumption, the effect on trust from living in a country with certain institutions can be estimated by comparing those who have had long exposure to those who have had short exposure (controlling for age and other relevant factors). Importantly, figure 2 shows that social trust has been remarkably stable over time in Sweden, as indicated by yearly surveys that started in 1996 and also according to waves of the World Values Surveys/European Values Surveys from 1982 and onwards.

**Figure 2. Average social trust in Sweden 1982-2014.**



Source: National SOM-surveys, available at <https://snd.gu.se/en/catalogue/series/74> and European Values Study (EVS)/World Value Survey (WVS). The latter refer to the percentage who agrees that most people can be trusted (among those who expressed an opinion).

As an example, consider Swedish expats who move to Brazil. They come from a country where trust has been stable around 60 percent for decades and have lived anywhere from a few years to 30+ years in a country where trust is stable around 6 percent, that is also substantially more corrupt and

have lower economic freedom. If living in a country with low average trust gradually leads to lower individual trust, expats that have resided longer in Brazil will be less trusting (when controlling for individual characteristics that matter for trust). If the effect on trust is immediate, due to expectations about less trustworthy behavior of others in a low trust country, recently migrated expats in low-trust countries will have lower trust than Swedes in Sweden and also than migrants to high-trust countries. Theoretically, we might see both an immediate effect (due to expectations) and a continuous effect (due to experiences).

Initially we analyze the impact of lengths of stay simply by interacting length of stay with each institutional indicator. Admittedly, this is not a very flexible specification. We therefore also divide the sample into three categories based on the institutions of destination countries and run separate regressions for each category. If experiences matter, the effect of time spent in the new country should be more negative in the category where institutional quality or average trust is the lowest.

For country level trust, we use the standard measure based on the question posed in international surveys, such as European Value Survey and World Value Survey, i.e. “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?”. This question can be answered using the response categories “Most people can be trusted” (coded as 1) or “Can’t be too careful” (coded as 0). Because country level social trust is highly stable over time, and detailed yearly data are not available, we use average country estimates as compiled by Berggren and Bjørnskov (2011). The survey of Swedish expats (and Swedes in Sweden) measure social trust continuously on a 0-10 scale, where the endpoints of the scale have the same labels as in the international surveys.

Compared to trust, corruption perceptions and economic freedom vary slightly more over time and more detailed data over time exist. To calculate the institutional exposure for these two, we assume that individual  $i$  is residing in the new country where she has spent  $n_i$  consecutive years. She is observed at  $t_0$  and thus migrated at  $t_n$ . The institutional exposure for  $i$  denoted  $IQ_i$  is calculated as the weighted mean of institutional quality in the new country during her stay:

$$IQ_i = \frac{1}{n_i} \sum_{t=-n}^1 f(t)IQ_t$$

In the expression above,  $f(t)$  is a weighting function for which there are no obvious guidelines a priori. One could argue that first impressions last and assume that  $f' > 0$ , thus giving more weight to institutions close to the time of arrival. Equally plausible is that memory fades, suggesting  $f' < 0$ . We therefore opted for the easy and transparent option to set  $f \equiv 1$ .

When  $IQ_{-n}$  is not available (because  $i$  has spent more time in the new country than covered by institutional data) we use the closest year available for all missing data points. When the individual has lived in more than one country (except Sweden) we include only those for whom the most recent country of stay accounts for at least 50 percent of total time spent abroad and calculate institutional exposure based on the present country only. Descriptive data for country level characteristics are shown in Table 2.

**Table 2. Descriptive statistics**

<b>Variable</b>	<b>Obs.</b>	<b>Mean</b>	<b>Std.dev.</b>	<b>Min</b>	<b>Max</b>
<i>Country level</i>					
Social trust	89	25.23	12.94	5.774	68.08
Corruption perception index	89	50.21	19.34	16	92
Economic freedom	79	7.072	0.790	3.791	8.631
Legal integrity	79	6.278	1.829	1.463	9.124
Regulation	79	6.887	0.884	4.204	8.690
Sound money	79	8.648	1.153	4.724	9.887
Size of government	79	6.274	1.343	3.626	8.828
Freedom to trade	79	7.267	1.116	3.408	9.194
<i>Individual level</i>					
Age	2,092	49.05	14.85	18	75
Female	2,092	0.501		0	1
High education	1,937	0.684		0	1
Migrated for job	2,092	0.357		0	1
Religious	1,868	0.404		0	1
Married	1,943	0.801		0	1
Employed	1,910	0.627		0	1
Unemployed	1,910	0.042		0	1
Retired	1,910	0.233		0	1
Health status (subjective)	1,942	8.136	1.778	0	10

Comment: For additional information about the variables, see Table 3 and Table A2 (the appendix).

### 3. Empirical analysis and results

#### 3.1 How do expats differ?

To examine how newly arrived expats differ from the Swedish population with respect to trust, trust is regressed on personal characteristics, including a dummy variable for expats who have resided less than two years in the new country. With a two-year limit, there are plenty of observations while still keeping the influence of experiences in the new country to a minimum.

**Table 3. Explaining social trust using individual characteristics**

Variables	Model			
	(1)	(2)	(3)	(4)
Recent expatriate	0.32* (0.17)	0.31* (0.18)	0.08 (0.17)	-0.09 (0.18)
High education		0.77*** (0.07)	0.65*** (0.06)	0.61*** (0.11)
Age/10		0.00 (0.02)	0.02 (0.02)	0.07** (0.03)
Age squared		0.00 (0.00)	0.00 (0.00)	-0.00* (0.00)
Female		0.11* (0.07)	0.18*** (0.06)	0.17 (0.11)
Married		0.43*** (0.08)	0.33*** (0.08)	0.15 (0.14)
Employed		0.39*** (0.14)	0.03 (0.13)	-0.04 (0.24)
Unemployed		-0.68*** (0.23)	-0.76*** (0.22)	-0.72* (0.38)
Retired		-0.06 (0.18)	-0.29* (0.17)	-0.28 (0.31)
Left-right position		-0.01 (0.03)	-0.06** (0.03)	0.03 (0.05)
Health status			0.31*** (0.02)	0.31*** (0.03)
Religious				-0.23** (0.11)
Constant	6.65*** (0.03)	5.21*** (0.39)	2.99*** (0.39)	2.16*** (0.69)
Observations	4,602	4,225	4,206	1,412
R <sup>2</sup>	0.00	0.07	0.15	0.15

Comment: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, standard errors in parentheses. Information on expatriates comes from the SOM Institute's Swedish Expatriate Survey 2014 and information on Swedes in Sweden comes from the SOM Institute's National Survey 2014, both referring to the age group 18-75. All variables are based on survey responses. The dependent variable is Trust measured on a 0-10 scale, where higher values refer to higher trust. Married includes cohabitantes. Left-right position is measured on a 5-point scale, where higher values mean further to the right. Health status is measured on a 0-10 scale, where higher values indicate better health. Religious refers to the answer Yes to the question "Do you believe in God?" (this question is only posed to a subsample in the national survey, therefore the number of respondents is substantially lower).

As shown in Table 3, expats who have recently migrated are on average somewhat more trusting than the Swedish population (6.97 compared to 6.65 on the 0-10 scale, but the difference is only significant at the .10 level). The difference decreases only marginally when controlling for education, age, gender, civil status, employment status, retirement and self-placement on the political left-right scale – suggesting that matching migrants with non-migrants based on these criteria will not necessarily create a comparable control group. When controlling also for subjective health, recent expats are no longer significantly more trusting. These results suggest that expats are more trusting mainly because they have better subjective health, emphasizing the importance of controlling for subjective health when comparing trust between migrants to non-migrants. In a fourth model, we also control for religiousness, but there is still no difference in trust between Swedish expats and Swedes residing in Sweden.<sup>2</sup>

### **3.2 Does trust among recently migrated vary between different types of countries?**

Next, we examine if trust among recently migrated expats vary between different kinds of countries. If it does, it can be the result of either self-selection or of a rapid adjustment to living in another type of country. As mentioned in the previous section, we divide recent migrants in our sample into tertiles depending on the level of corruption, economic freedom and trust in their new country. This is done separately for each of those three variables. Table 4 shows the average trust for recent migrants to countries with low, medium and high levels of corruption, trust and economic freedom (all sorted from ‘worst’ to ‘best’ institutions).

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<sup>2</sup> The number of observations decreases substantially when adding religiousness since that question was only posed to a subsample in the national survey.

**Table 4. Average trust (unconditional and conditional on individual characteristics) among recent migrants to countries with different institutional characteristics**

	Corruption		Economic freedom		Trust	
	Uncond.	Cond.	Uncond.	Cond.	Uncond.	Cond.
<b>Worst or lowest</b>	7.28	7.06	6.93	6.43	7.06	6.65
	(0.24)	(0.31)	(0.38)	(0.39)	(0.29)	(0.32)
<b>Medium</b>	6.94	6.72	6.90	6.97	7.28	7.10
	(0.26)	(0.30)	(0.24)	(0.21)	(0.25)	(0.31)
<b>Best or highest</b>	6.90	7.06	7.05	7.14	6.83	7.05
	(0.28)	(0.23)	(0.30)	(0.27)	(0.29)	(0.23)
<b>Observations</b>	210	196	209	196	208	196

Comment: The estimates refer to the average trust among Swedish expats who migrated in the last two years, divided into thirds depending of their new country's institutional characteristics (three variables considered separately, standard errors within parentheses). Corruption is based on Transparency International's Corruption Perception Index and the average score in the three groups are 43, 71 and 87. Economic freedom refers to Fraser Institute's Economic Freedom of the World Index where the average levels of the three groups are 6.7, 7.5 and 8.0. Trust is compiled from the European Values Study, World Value Survey and similar studies (refers to survey estimates of the share of the population who thinks that most people can be trusted taken from Berggren and Bjørnskov (2011)), and the average levels in the three groups are 20, 36 and 61. The estimates conditional on individual characteristics include all covariates in Table 3 and also a variable referring to if the reason for migrating was work. Source: the SOM Institute's Swedish Expatriate Survey 2014; the Quality of Government standard dataset, January 2016 version (Teorell et al. 2016).

Interestingly, there is a weak tendency for migrants to the most corrupt third of destination countries to be slightly more trusting than migrants to medium and low-corrupt countries, but that pattern disappears completely when controlling for individual characteristics. For average trust in the new country and for (aggregate) economic freedom there is a weak tendency such that trust is lower among recent expats in countries with low economic freedom and low trust, suggesting that they may already have had some experiences in the new countries that negatively affected trust – or that those who migrate to these countries are slightly less trusting.

### 3.3 The effect of institutions on trust

We now turn to our main question by analyzing how trust varies with the length of stay in countries with different levels of corruption, economic freedom and trust. It should first be noted that some of the country level characteristics are highly correlated, as illustrated in Table 4. In particular, countries

with low levels of (perceived) corruption tend to be countries with high legal quality. Sorting out the causality between these institutional characteristics is beyond the scope of this paper.<sup>3</sup>

**Table 5. Correlation matrix for country level institutions**

	Trust	Absence of Corruption	EF11	EF12	EF13	EF14	EF15
Trust	1						
Absence of Corruption	0.61*	1					
Small size of gov. (EF11)	-0.33*	-0.38*	1				
Legal quality (EF12)	0.55*	0.83*	-0.40*	1			
Sound Money (EF13)	0.32*	0.57*	-0.16	0.49*	1		
Free trade (EF14)	0.29	0.61*	-0.09	0.52*	0.72*	1	
Regulations (EF15)	0.44*	0.58*	-0.04	0.58*	0.40*	0.62*	1

Comment: Trust is compiled from the European Values Study, World Value Survey and similar studies, taken from Berggren and Bjørnskov (2011). Absence of Corruption refers to Transparency International's Corruption Perception Index. The five different measures of economic freedom come from the Fraser Institute. The correlations are estimated at country level using those countries represented in the sample of Swedish expats who have spent at least half their time abroad in the country they currently reside in. Source: the SOM Institute's Swedish Expatriate Survey 2014; the Quality of Government standard dataset (January 2016 version).

The country level variables in Table 5 are used in our analysis as indicators of institutional quality. We estimate how trust among Swedish expats varies with the length of stay in countries with different institutional characteristics. Table A1 (in the appendix) shows the effect of interacting length of stay with institutional characteristics in order to examine if social trust is higher when respondents have stayed longer in countries with higher trust, more economic freedom and less corruption. Several interaction effects are significant and positive, and no interaction effects are significantly negative, indicating that trust, conditional on individual characteristics, is higher when people have resided longer in countries with better institutions. These findings support the idea that institutions affect trust, but the estimated effects are very small. A highly trusting expat that starts at 8 on the 0-10 scale, who moves to a country with a corruption score of 38 (Brazil in 2015, compared to Sweden's 89), would have decreased in trust to 7.89 after 10 years and to 7.72 after 25 years.

These quantifications are however only illustrative of the size of the estimated effect. The interaction-approach is restrictive because it implicitly assumes a linear relationship between trust, institutions and length of stay. We therefore divide the sample in thirds based on the institutional

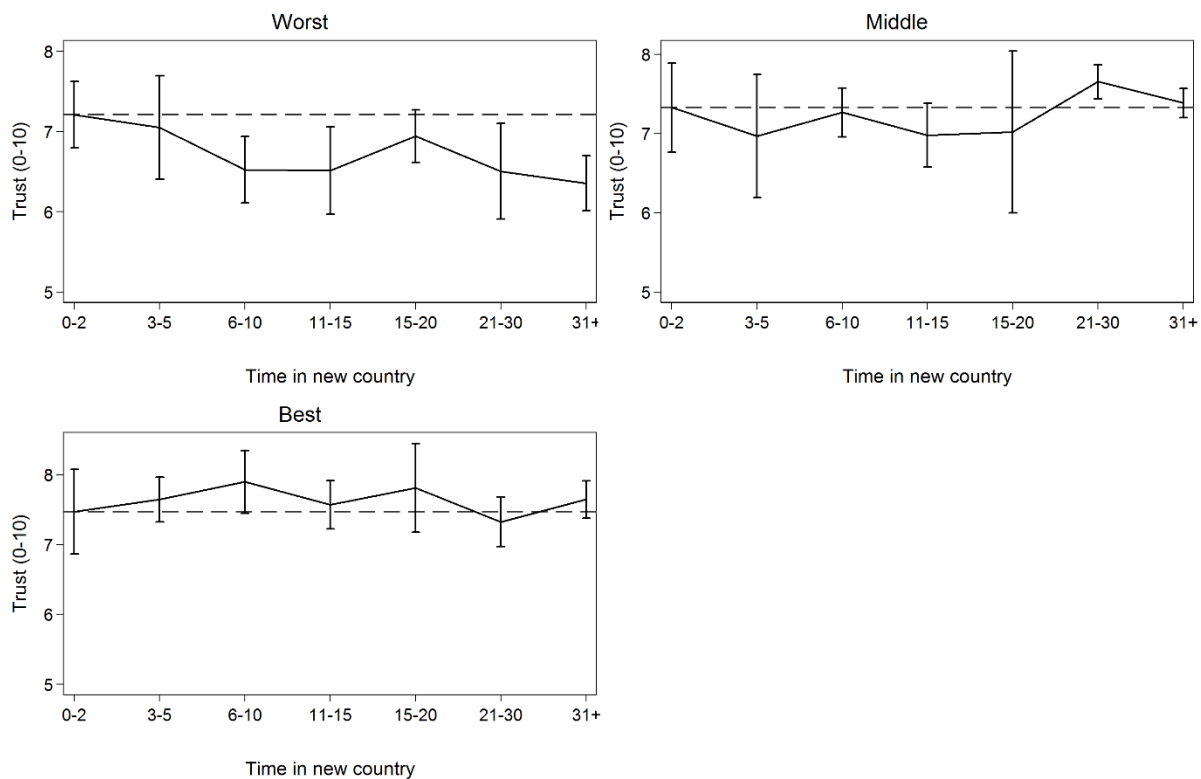
<sup>3</sup> For example, there are theoretical reasons to suspect that free trade has a corruption-inhibiting effect, because trade barriers increase the desire to get around the rules by using bribes and irregularities (see further Wei, 2000).



characteristics and run separate regressions in each of these three subsamples, with dummy variables indicating different lengths of stay. This more flexible specification confirms that expats with longer exposure to corruption, low trust or low legal quality, are less trusting.

Figure 3 illustrates the effect on trust from duration of stay in the most corrupt third of destination countries (for regression results, see Table A2 in the appendix).

**Figure 3. The effect of length of stay in destination countries with different corruption levels on social trust.**<sup>4</sup>



As expected from the institutional view, the trust of expats who moved to other countries with low perceived corruption level is independent of the time spent in the new country. In contrast, trust tends to fall with length of stay in the most corrupt countries, with the middle corrupt countries somewhere in between.

<sup>4</sup> All time intervals include at least 200 individuals. Individual controls included. See Table A2 in the Appendix for additional information.

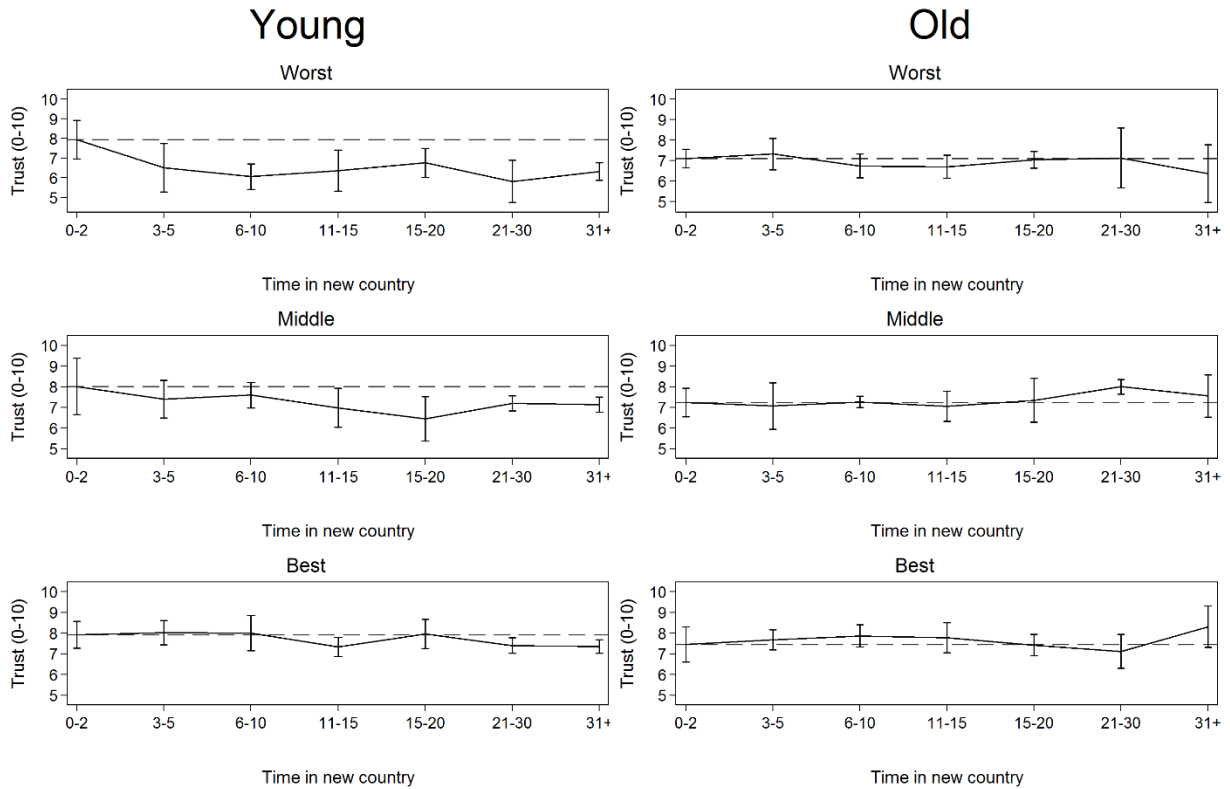
The average decline in trust with the length of stay in the most corrupt countries masks an interesting heterogeneity, illustrated in Figure 3. Splitting the sample into those who were older than 30 at the time of migration and those who were at most 30, reveals that the effect is driven by the latter group. Young emigrants from Sweden are highly trusting initially regardless of where they have moved, (typically being close to 8 on the 0-10 scale), but in countries with inferior institutions, there is a rapid decline. After three to five years in the most corrupt countries, trust has fallen to the level of Swedes in Sweden (which is 6.6 on average on the 0-10 scale). After that initial ‘normalization’ there are no signs of further decreases in trust, and the level of trust seems stable at a fairly high level, especially compared to the trust levels in their new countries (where average trust is 21 percent). Among young emigrants living in countries with low levels of corruption, the trust level is remarkably stable over time at a high level. The trust level is also very stable over time among those that were older than 30 at the age of emigration, albeit at a somewhat lower level.

Table A1 in the appendix shows corresponding estimates when countries are grouped according to different institutional characteristics. In addition to perceived corruption, the expected negative effect from institutions on trust is evident for legal quality (EFI2) and average trust level in the new country. Somewhat weaker effects in the expected direction are observed for freedom to trade (EFI4) and regulatory freedom (EFI5). Monetary stability (EFI3) does not matter at all, and the effect of size of government (EFI1) is if anything the opposite of the expected.<sup>5</sup> In all cases, effects are driven by those were at most 30 at the time of arrival in the new country.

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<sup>5</sup> This seemingly surprising finding has most likely a simple explanation: Low economic freedom means large government size which is positively correlated with trust (as shown by Bergh and Bjørnskov, 2011)

**Figure 3. The effect on trust of length of stay in countries with different degrees of perceived corruption depending on age at arrival (cut-offs  $\leq 30$ ,  $>30$ )**



### 3.4 Robustness tests

To test the robustness of our results, we first change the cutoff from 30 years of age to 35. Setting the cutoff at 35 rather than 30 years of age produces close to identical results. Lowering the cutoff to 25 makes the older group look more like the younger, and also results in imprecise estimates for the younger group due to a small sample. A second robustness test is to run the main analysis without those who have resided in another country outside Sweden before moving to their present country. Again, results are very similar. We have also tried changing the granularity of the time dimension in our analysis, in the sense of having more or fewer time dummies. In particular, we have looked for evidence that long durations of stay are associated with even lower levels of trust, but this does not appear to be the case. Results from these robustness tests are available on request.

#### 4. Concluding discussion

What do our results teach us about whether trust is explained mainly by institutions or by culture? Interestingly, our analysis provides evidence that strengthens both views. When the sample is limited to expats that were over 30 years of age at the time of arrival in their new country, our results suggest that trust is a sticky personality trait. These findings also confirm the results in Ljunge (2014) that high trust can be persistent also in low trust environments.

On the other hand, we have also discovered that expats that are 30 or younger when arriving to highly corrupt countries, are likely to rapidly adjust their trust levels downwards. This finding supports the idea that institutions affect trust. It is worth noting, however, that after a decline during the first 3-10 years, there is no evidence of any further decline in trust, and even after 20-years in the most corrupt countries in the world, these expats are roughly as trusting as Swedes in Sweden.

Finally it is worth noting that the implication of our results together with previous research is a ratchet effect for global trust: When highly trusting Swedes move to countries with lower trust, the migrants tend to remain highly trusting, especially if they are older than 30 at the age of emigration. On the other hand, the findings in Dinesen (2012) and Nannestad et al. (2014) suggest that the trust among migrants from low-trust countries will increase when they migrate to high-trust countries. The perhaps surprising implication is that global migration may well tend to increase trust, a conclusion that merits further investigation, especially by looking closer at social trust among second generation immigrants in both high and low-trust countries.

**Appendix: Table A1. Explaining trust using individual characteristics and length of stay in countries with different institutional quality. OLS regression models**

VARIABLES	CPI	Trust	EFW	EFW2	EFW5	EFW3	EFW1	EFW4
Age (10s)	0.600** (0.239)	0.660*** (0.248)	0.475* (0.256)	0.579** (0.245)	0.513** (0.257)	0.482* (0.259)	0.686** (0.265)	0.491* (0.261)
Age squared	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Female	0.203* (0.105)	0.228** (0.114)	0.272*** (0.103)	0.194* (0.105)	0.277** (0.105)	0.265** (0.101)	0.188 (0.118)	0.236** (0.111)
High education	0.349** (0.152)	0.359** (0.155)	0.330** (0.156)	0.346** (0.154)	0.330** (0.156)	0.332** (0.158)	0.362** (0.162)	0.345** (0.153)
Religious	-0.124* (0.068)	-0.137* (0.074)	-0.149** (0.072)	-0.124* (0.065)	-0.139* (0.072)	-0.167** (0.072)	-0.163** (0.074)	-0.156** (0.069)
Married	-0.105 (0.088)	-0.130 (0.088)	-0.132 (0.091)	-0.118 (0.089)	-0.127 (0.090)	-0.127 (0.091)	-0.105 (0.095)	-0.128 (0.092)
Employed	-0.268* (0.137)	-0.283* (0.153)	-0.182 (0.122)	-0.261* (0.136)	-0.183 (0.121)	-0.178 (0.122)	-0.219* (0.127)	-0.176 (0.124)
Unemployed	-0.604 (0.364)	-0.604* (0.359)	-0.635* (0.367)	-0.610* (0.366)	-0.626 (0.378)	-0.641* (0.365)	-0.625* (0.369)	-0.620* (0.359)
Retired	-0.499** (0.193)	-0.453** (0.193)	-0.458** (0.191)	-0.478** (0.187)	-0.440** (0.190)	-0.468** (0.191)	-0.459** (0.182)	-0.472** (0.185)
Health status	0.224*** (0.037)	0.233*** (0.037)	0.222*** (0.036)	0.225*** (0.037)	0.220*** (0.037)	0.225*** (0.035)	0.231*** (0.036)	0.224*** (0.036)
Migrated for job	-0.114 (0.100)	-0.104 (0.092)	-0.035 (0.116)	-0.103 (0.104)	-0.029 (0.117)	-0.035 (0.116)	-0.079 (0.114)	-0.046 (0.119)
Years abroad (10s)	-0.190* (0.104)	-0.112 (0.070)	-0.303 (0.437)	-0.362* (0.193)	-0.268 (0.268)	-0.104 (0.304)	0.087 (0.127)	-0.747** (0.317)
[Institutional quality, see column head]	0.022*** (0.005)	0.019*** (0.003)	0.186 (0.207)	0.244*** (0.070)	0.091 (0.156)	0.191 (0.115)	-0.207*** (0.053)	0.024 (0.211)
Interaction Years abroad (10s)* [Institutional quality, see column head]	0.002* (0.001)	0.003* (0.001)	0.044 (0.057)	0.047** (0.023)	0.041 (0.036)	0.015 (0.032)	-0.017 (0.024)	0.094** (0.039)
Constant	1.896*** (0.668)	2.516*** (0.616)	2.360* (1.402)	1.592** (0.674)	3.053*** (1.116)	1.949* (1.154)	4.525*** (0.791)	3.599** (1.494)
Observations	1,777	1,770	1,750	1,750	1,750	1,750	1,750	1,750
R-squared	0.119	0.116	0.081	0.107	0.082	0.082	0.093	0.083

Comments: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ , robust standard errors in parentheses (clustered within countries). The individual characteristics are based on survey responses among Swedish expats, see comments to Table 2 for additional information. The institutional qualities refer to country characteristics: Corruption refers to Transparency International's Corruption Perception Index (scale 0-10, where higher values mean lower corruption). Trust is compiled from the European Value Survey and World Value Survey. The six different measures of economic freedom come from the Fraser Institute (EFW=Economic Freedom Index, EFW2=Legal Structure and Security of Property Rights, EFW5=Regulation of Credit, Labor and Business, EFW3=Access to Sound Money, EFW1=Size of Government, EFW4=Freedom to Trade Internationally). Source: the SOM Institute's Swedish Expatriate Survey 2014; the Quality of Government standard dataset (January 2016 version).

Table A2. Explaining trust using individual characteristics and length of stay in countries with different institutional quality, divided into tertiles. OLS regression models

Tertile	Years abroad	CPI	Trust	EFW	EFW2	EFW5	EFW3	EFW1	EFW4
<b>Worst or lowest</b>	3-5	-0.16 (0.39)	-0.61 (0.44)	0.66** (0.31)	0.06 (0.27)	0.03 (0.40)	0.53 (0.42)	-0.16 (0.50)	0.23 (0.37)
	6-10	-0.68** (0.32)	-0.31 (0.53)	-0.53 (0.48)	-0.71** (0.31)	-0.41 (0.40)	-0.00 (0.47)	0.37 (0.28)	0.19 (0.52)
	11-15	-0.69** (0.30)	-0.25 (0.34)	-0.02 (0.38)	-0.50** (0.21)	-0.92*** (0.32)	0.52 (0.49)	0.11 (0.21)	0.16 (0.29)
	15-20	-0.27 (0.21)	-0.46 (0.32)	-0.09 (0.42)	-0.22 (0.20)	-0.18 (0.36)	1.16** (0.51)	0.47 (0.30)	0.51 (0.49)
	21-30	-0.70** (0.34)	-0.17 (0.38)	0.29 (0.38)	-0.49 (0.30)	0.14 (0.35)	0.46 (0.44)	0.19 (0.24)	-0.24 (0.52)
	31+	-0.86*** (0.24)	-0.62 (0.40)	0.55 (0.46)	-0.68*** (0.22)	-0.27 (0.39)	0.79 (0.52)	0.40 (0.26)	-0.03 (0.42)
	<b>Medium</b>	3-5	-0.36 (0.49)	-0.28 (0.42)	0.16 (0.32)	-0.01 (0.48)	0.21 (0.46)	0.39 (0.39)	0.21 (0.40)
6-10	-0.06 (0.35)	-0.38* (0.22)	0.60** (0.25)	0.12 (0.34)	0.57* (0.32)	0.46 (0.42)	0.39 (0.42)	0.36 (0.27)	
11-15	-0.35 (0.25)	-0.54*** (0.16)	0.09 (0.26)	-0.45 (0.34)	0.38** (0.19)	0.03 (0.30)	-0.00 (0.32)	-0.14 (0.26)	
15-20	-0.31 (0.47)	-0.17 (0.25)	0.65* (0.35)	-0.53** (0.24)	0.77*** (0.25)	0.31 (0.52)	0.34 (0.33)	-0.03 (0.47)	
21-30	0.33 (0.27)	0.05 (0.40)	0.53*** (0.19)	0.37 (0.33)	0.21 (0.22)	0.14 (0.42)	-0.17 (0.48)	0.31 (0.30)	
31+	0.06 (0.29)	-0.02 (0.26)	0.52** (0.20)	0.37 (0.31)	0.91** (0.34)	0.32 (0.37)	0.12 (0.27)	0.28 (0.36)	
<b>Best or highest</b>	3-5	0.17 (0.39)	0.31 (0.37)	-0.59 (0.51)	0.08 (0.43)	-0.29 (0.44)	-0.30 (0.38)	-0.03 (0.53)	-0.81** (0.30)
	6-10	0.43 (0.39)	0.60 (0.35)	-0.43 (0.31)	0.44 (0.34)	-0.20 (0.35)	-0.13 (0.26)	-0.42 (0.50)	-0.07 (0.47)
	11-15	0.10 (0.30)	0.21 (0.27)	-0.53 (0.31)	0.04 (0.26)	-0.56** (0.22)	-0.33 (0.25)	-0.73*** (0.25)	-0.22 (0.22)
	15-20	0.34 (0.50)	0.58 (0.50)	-0.51 (0.47)	0.42 (0.40)	-0.56 (0.40)	-0.29 (0.40)	-0.81* (0.40)	0.04 (0.31)
	21-30	-0.15 (0.38)	0.09 (0.33)	-0.32 (0.44)	-0.07 (0.32)	-0.24 (0.48)	0.15 (0.24)	0.03 (0.55)	-0.17 (0.34)
	31+	0.18 (0.27)	0.37 (0.25)	-0.39 (0.37)	0.09 (0.21)	-0.28 (0.38)	0.05 (0.24)	-0.20 (0.49)	-0.03 (0.25)

Comments: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ , robust standard errors in parentheses (clustered within countries). The table shows the effect of length of stay in destination country on trust. For each institutional quality variable, the Swedish expats divided into thirds depending of level of the institutional characteristic and a separate regression model has been estimated. All models include controls for the individual characteristics in Table A1 (see comments to Table A1 for additional information on the variables). Source: the SOM Institute's Swedish Expatriate Survey 2014; the Quality of Government standard dataset (January 2016 version).



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