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Does Trust Influence Economic Growth? Evidence from the Arab World

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Abstract

This study examines the role trust is playing in promoting or hampering economic growth in the Arab world during the current times of uprisings and political upheaval. Using data from the 2010 – 2014 wave of the World Value Survey and employing various econometric specifications, we find a positive association between generalized trust and economic growth. This effect appears to be weaker in the Middle East and North Africa region compared to the rest of the world. A fall in public trust arising from uprisings can therefore have a dampening effect on the region's growth and economic development.

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Abstract

This study examines the role trust plays in promoting or hampering economic growth in the Arab world during current turbulent times. Using data from the 2010 – 2014 wave of World Value Survey (WVS) and employing various econometric specifications, we find a positive association between generalized trust and economic growth. The effect however is found to be weaker in the Middle East and North Africa (MENA) region compared with the rest of the world. Explanation for this differential behavior may lie in greater importance given in the Arab world to family ties as compared to trust at the societal level.

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1. Introduction

The role of trust and other dimensions of social capital in determining the prosperity of the nations has interested social scientists for decades. Pioneering studies by Arrow (1972), Coleman (1988) and Fukuyama (1995) shed light on the role of social capital and trust on economic efficiency and argue that trust and social capital determine the performance of social institutions. The core foundation of the relationship between trust and economic performance lies in trust's ability to enhance trade by reducing transaction costs and facilitating cooperation (Arrow, 1972). Dasgupta & Serageldin (1999), Serageldin & Grootaert (1999), Whiteley (2000) and Bjørnskov (2017) among others broadened the neoclassical growth model by introducing trust and other social capital factors. In recent years, empirical literature studying the role of social capital in general and trust in particular in driving growth and other economic factors has burgeoned (see for instance Knack & Keefer, 1997; La porta *et al*., 1997; Zak & Knack, 2001; Berggren *et al*. 2008; Roth, 2009; Neira *et al*. 2009; Foa, 2011; Dimeglio *et al*. 2012; Majeed, 2016; Kasmaoui & Errami, 2017; Lim *et al*, 2018).

In this study, we examine the trust – growth relationship by focusing on the Arab world. The Middle East and North Africa (henceforth MENA) region has undergone rapid and sometimes violent social changes in the recent years. This period of so-called Arab Spring has seen protests and uprisings, civil wars and revolutions in countries across the region. This, in conjunction with rapid demographic transition of the region reflected in youth bulge and slowing population growth is bound to not only significantly affect the levels of trust in the society but also influence the economic trajectory of the region.

We examine the issue by employing data from the 2010 – 2014 wave of the World Value Survey (WVS). This allows us the opportunity to study the relationship during these turbulent times known as the Arab Spring.

The paper proceeds as follows, Section 2 provides a brief review of previous research on trust and economic growth. Section 3 discusses data, empirical methodology and estimated models while Section 4 presents and discusses our main findings. Section 5 concludes.

2. An Overview of Extant Research on Trust and Economic Growth

According to Fukuyama (1995), trust between individuals is an essential factor for business and economic development and is key to understanding institutional effectiveness and economic growth. Trust lies at the core of a virtuous economic circle.

Empirical literature since has usually (though not universally) corroborated this view. For instance, Knack & Keefer (1997) use data on 29 countries from the WVS dataset to find a positive relationship between trust (measured as the proportion of individuals expressing confidence) and economic growth. An increase of 10 percentage points in the level of trust is associated with an increase in growth of 0.8 percentage points. Zak & Knack (2001) re-examined the findings of Knack & Keefer by using three waves (1981-1984, 1990-1993 and 1995-1997) of WVS data on 41 countries. They conclude that there is a significantly positive relationship between trust and economic growth.

In the same vein, La porta *et al*. (1997) study a cross-section of forty countries and suggest the existence of a significantly positive relationship between economic growth and trust. They find that a one standard deviation change in trust increases the growth rate of per capita income by 0.3 percent.

Other studies find the trust – growth association to be negative. For example, Helliwell (1996) using data from a group of high-income OECD countries reports a negative relationship between trust and economic growth. Roth (2009) noted the presence of a negative relationship between trust and economic growth in certain cases. However, this negative effect disappears when six countries in transition are excluded from the overall sample of 41 countries.

Studies such as Beugelsdijk *et al*. (2004) and Hall & Ahmed (2013, 2017) even report evidence for no significant relationship between trust and economic growth.

The aforementioned lack of consensus on the impact of trust on growth suggests that the relationship is probably contingent on the sample of countries or regions examined and time period considered.

3. Model, Data and Methodology

3.1. Model specification and data

Following Knack & Keefer (1997), Zak & Knack (2001) and Beugelsdijk *et al*, (2004), our baseline model explains growth in terms of initial income, the price of investment goods, human capital and interpersonal trust. The model can be given as:

$$Growth_{i,10-15} = X_i\,\alpha + \beta_1\,Trust + \beta_2\,Trust * MENA + \varepsilon_i$$

Where Growth, the dependent variable is the average annual growth in per capita income over the 2010-2015 period. The lowest growth recorded in our sample is -6.8 % for Yemen, while the highest rate reported is 7.8 % for China.

X is a vector of control variables including the natural logarithm of per capita income, investment share of GDP, the price level of investment goods, human capital, population growth, trade openness (as measured by exports plus imports divided by GDP), inflation rate, and a binary indicator for **MENA** region. Values of control variables are taken at the beginning of the period considered.

Data for the dependent and control variables comes from World Bank World Development Indicators. Data for the variable for trust comes from World Value Survey (WVS). The variable consists of data on sixty countries taken from the 2010 – 2014 wave of the WVS. This sample contains data on fourteen countries from the MENA region, namely: Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Palestine, Qatar, Tunisia, Turkey and Yemen. These countries together account for 69% of the region's population.

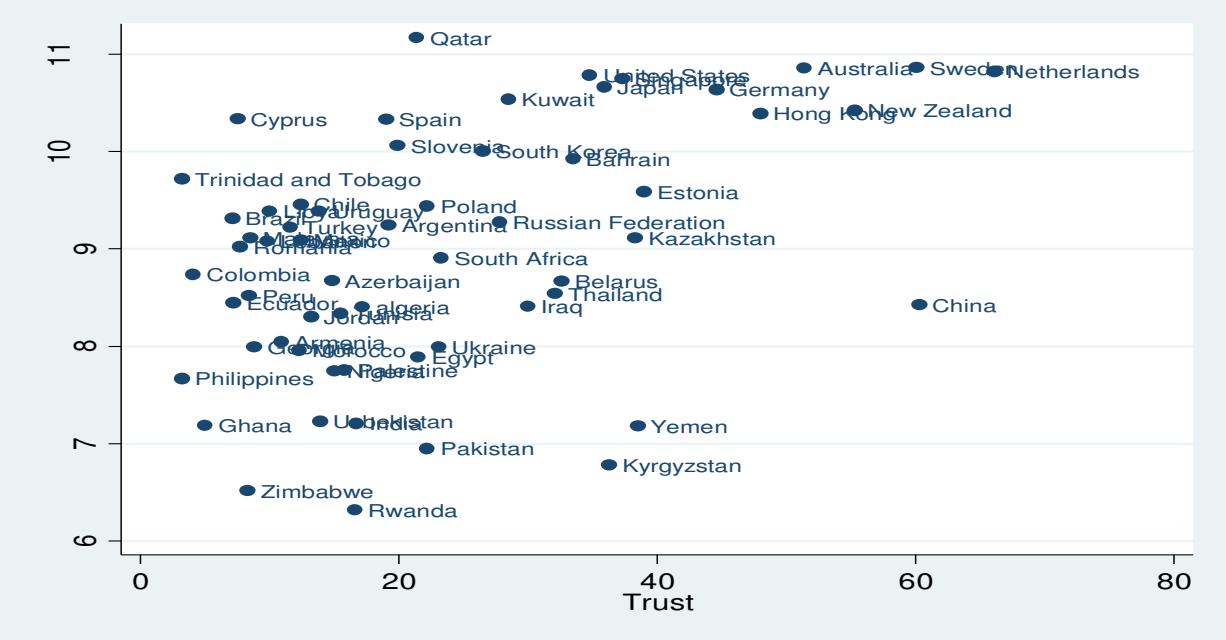
The question that the respondents of the WVS were asked to assess the level of trust was: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"

The corresponding response "most people can be trusted" is taken as an indicator of people's trust in the society. The percentage of people in each country giving this answer corresponds to the cross sectional generalized trust variable. The values of the variable range from 3.2 percent in the Philippines to 66.1 per cent in the Netherlands. Respondents not providing answer to the question on trust were excluded from the dataset. Country-wise distribution of non-respondents is shown in Table 4 in the appendix.

Table 1 shows the description and definitions of the variables used in our analysis while Table 2 shows the mean, standard deviation and the number of observations for each variable.

Figure (1) relates the logarithm of per capita income to trust; it shows that countries with high levels of trust also display higher levels of income per capita.

Figure 1: GDP per capita and generalized trust



Source: Authors' calculations using WVS.

3.2. Methodology

The empirical analysis proceeds as follows:

First, we estimate our baseline Barro-type model described in the previous subsection. In order to check whether trust affects growth differently in the MENA region compared to other countries of the world, we introduce an interaction term between trust and the MENA region dummy. Next, we try variations of this model to test the robustness of our results. We introduced investment share of GDP (Gross capital formation) in the model and eliminate the price level of investment goods. In the third model, we include population growth, trade openness and inflation as additional determinants of growth.

The above three specifications are estimated using Ordinary Least Squares (OLS).
We suspect the presence of reverse causality between trust and economic growth. Therefore, we instrument trust with the proportion of Muslims and Christians in each country, the two

instrumental variables used by Knack & Keefer (1997) and Zak & Knack (2001)[1]. This specification is estimated using the Two-Stage Least Squares (2SLS) model.

4. Results and Discussion

Table 3 reports findings of the model specifications.
In the baseline model (Column 1), trust seems to have a positive and significant effect on growth for the whole sample of countries. A ten-percentage-point rise in trust is associated with an increase in growth of 0.44 of a percentage point. In other words, one-standard-deviation change in trust (fifteen percentage points) is associated with a change in growth of more than one-half (0.69) of a standard deviation.
However, the association between trust and growth is weaker for the MENA countries compared to the rest of the world.
Among control variables, conditional convergence and economic growth are significantly and negatively associated. The human capital variable has a positive effect on growth. The coefficients for secondary education and the price level of investment goods are mainly insignificant.
These results show that economic growth is high when the level of trust is high and where the primary enrollment rate is strong. Overall the model does a strong job of describing the variance in growth rates as 68 percent of the variance of economic growth can be explained by the model.
In model 2 (shown in Column 2), we introduced investment share of GDP (Gross capital formation) and eliminate the price level of investment goods. This yields a positive relationship between trust and economic growth and a negative coefficient for the interaction term (Trust*MENA) and corroborates the findings of the baseline specification. Human capital and investment however have no significant effect on economic growth. This model explains 68 % of the variance of the dependent variable.
Column 3 shows model including population growth, openness and inflation as additional controls. The results for our variables of interest remain qualitative similar. Trust contributes positively to growth while the interaction term (Trust*MENA) shows a negative and significant impact. The model accounts for 77 % of the variance of the dependent variable.
Column 4 includes the share of natural resources in the GDP. The coefficient of this variable is found to be insignificant.
Columns 5 and 6 report the first and second-stage estimations of the 2SLS model. Instrumenting for trust with the proportion of Muslims and Christians in the population, the effect of trust on economic growth remains significant at the 5% level.
Instrument validity tests show that the instruments are jointly significant in the first stage (as suggested by the value of F test (11.05) and the partial R2 Shea test (0.287)). The first stage F-statistic for excluded instruments is greater than ten suggesting that our instruments satisfy the relevance condition. The instruments validate the Hansen J-test of over-identifying restrictions implying that the instruments are not correlated with the error term.

The above estimations show that though trust has a significant influence on growth in the MENA region, its influence is weaker as compared to that in the rest of the world.
This finding could be understood in light of the region's social and economic specificities.

[1] The two studies include the proportion of Orthodox in addition to the proportions of Muslims and Christians. We do not consider this variable due to lack of data.

The MENA region suffers from high levels of chronic unemployment and economic disparities. Besides, public participation in political process is generally low.

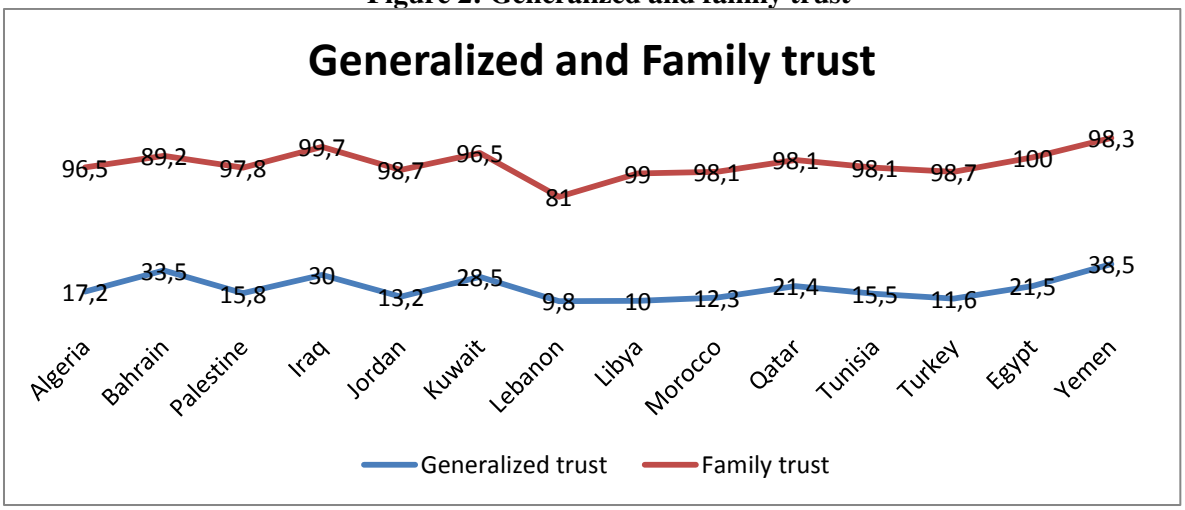
During the period under study, oil and gas exporting countries of the region particularly suffered from substantially lower public receipts due to falling world oil prices (World Bank, 2015). This exacerbated existing tensions and social unrest among restive youthful populations.

Although oil importing countries such as Egypt, Jordan and Tunisia benefited from low oil prices, the subsequent drop in migrant remittances from hundreds of thousands of migrants working in the Gulf countries adversely impacted the fragile economies.

The growing social unrest and political conflicts contributed to lowering the levels of public trust in the region, at least in the short run (Spierings, 2017). This, in turn, may have weakened the relationship between trust and economic growth.

Another possible reason could be the strong familial bonds that exist in the societies of the region which often supercede other social connections. Economic and business interactions rely heavily on family ties. This can be seen in figure 2 which shows stronger family trust as compared to generalized trust. The effect of generalized trust on growth is therefore muted.

Figure 2: Generalized and family trust



Source: Authors' calculations using WVS.

5. Conclusion

The MENA region faces a wide array of social challenges associated with the process of economic development. Countries of the region require sustained growth to cater for a growing population. In this study, we examined the role of trust in the region's economic growth. We found that although the presence of social trust is a contributing factor in the region's growth, its influence is weaker as compared to the rest of the world.

This differential behavior may owe to the social unrest and political upheaval of the Arab Spring that swept the region during the first half of the decade. Push towards more participative and transparent forms of government in the countries of the region may help restore the low levels of generalized trust and quicken the pace of the region's economic growth.

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APPENDIX

Table 1: Description and source of variables

Variable	Description	Source
Growth rate	annual percentage growth rate of GDP per capita based on constant local currency.	World Bank
GDP per capita, PPP	gross Domestic Product converted into international dollars using purchasing power parity rates (PPP).	World Bank
Trust	most people can be trusted. Percentage of respondents who "agree" with this statement.	WVS (2010-2014)
Primary	total enrollment at primary level, regardless of age, expressed as a percentage of the population of official primary education age	WDI
Secondary	total enrollment at secondary level, regardless of age, expressed as a percentage of the population of official secondary education age	WDI
Price of investment goods	price of Investment goods	Penn World able 7.1
Investment	formerly gross domestic fixed investment (% of GDP)	World Bank
Trade openness	trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.	World Bank
Population growth	average annual population growth %	WDI
Inflation	consumer prices (annual %)	World Bank
Natural resources	total natural resources rents (% of GDP): The sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	World Bank
Proportion of Muslims	the proportion of Muslims in each country	Pew Research Center
Proportion of Christians	the proportion of Christians in each country	Pew Research Center

Table 2: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Growth rate	58	2.272	2.260	-6.810	7.8
GDP per capita	59	15168.08	17010	553.597	70870.23
Trust	60	23.165	15.590	3.2	66.1
Primary	45	103.899	8.558	84.804	128.855
Secondary	47	89.041	20.943	30.143	130.844
Price of investment goods	58	0.647	0.220	0.330	1.365
Investment	58	24.071	6.783	11.661	47.612
Trade openness	59	87.276	67.750	22.517	432.949
Population growth	59	1.483	1.777	-1.315	10.398
Inflation	57	4.780	3.684	-2.425	13.881
Natural Resources	58	8,671	11,547	0,00045	54,983
Proportion of Muslims	60	34.325	41.762	0.1	99.9
Proportion of Christians	60	43.953	37.578	0.1	98.5

Table 3: Trust and economic growth

Model	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	**OLS**	**OLS**	**OLS**	**2SLS Stage 1**	**2SLS Stage 2**
VARIABLES	Growth	Growth	Growth	Growth	Trust	Growth
GDP per capita	-1.036***	-2.234***	-1.750**	-1.115**	1.530**	-2.245***
	(0.275)	(0.351)	(0.648)	(0.487)	(0.638)	(0.394)
Trust	0.0442**	0.0355*	0.0426**	0.0415**		0.103**
	(0.0183)	(0.0190)	(0.0179)	(0.0182)		(0.0479)
Primary	0.0689**	0.0387	0.0571*	0.0603*	0.292	0.0460
	(0.0271)	(0.0290)	(0.0295)	(0.0303)	(0.308)	(0.0307)
Secondary	-0.00465	-0.00955	-0.0259*	-0.0289*	0.0662	-0.0258*
	(0.0146)	(0.0131)	(0.0135)	(0.0146)	(0.134)	(0.0135)
Price of investment goods	-0.475					
	(2.037)					
Investment		0.0595	0.0490	0.0479	0.279	0.0125
		(0.0398)	(0.0357)	(0.0362)	(0.361)	(0.0449)
MENA	3.393**	3.315**	3.332**	3.707**	-29.27**	4.854***
	(1.308)	(1.275)	(1.251)	(1.414)	(12.97)	(1.685)
Trust*Mena	-0.355***	-0.335***	-0.331***	-0.348***		-0.411***
	(0.0651)	(0.0667)	(0.0603)	(0.0675)		(0.0848)
Trade openness			-0.00178	-0.00138	0.0422	-0.00528
			(0.00346)	(0.00356)	(0.0331)	(0.00433)
Population growth			-0.150	-0.221	1.253	-0.133
			(0.269)	(0.297)	(2.684)	(0.270)
Inflation			-0.0914	-0.0856	0.692	-0.154*
			(0.0725)	(0.0740)	(0.708)	(0.0860)
Natural Resources				0.0217		
				(0.0365)		
Proportion of Muslims					-0.0767	
					(0.0985)	
Proportion of Christians					-0.187**	
					(0.0890)	
Constant	-3.879	-1.977	-1.815	-2.055	-23.88	-0.0562
	(3.063)	(2.952)	(3.362)	(3.423)	(35.45)	(3.614)
R-squared	0.679	0.681	0.772	0.775	0.631	0.686
F-statistic					11,05	
p-value					0,0001	
J-test Hansen						1,989
p-value						0,158
Shea R2						0,287

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Percentage of respondents not responding to the question on trust

Country	not responding individuals	Country	not responding individuals	Country	not responding individuals
Algeria	4.2%	Iraq	-	Romania	0.2%
Argentina	0.8%	Japan	-	Russian Federation	0.4%
Armenia	0.2%	Jordan	-	Rwanda	-
Australia	0.7%	Kazakhstan	-	Singapore	0.2%
Azerbaijan	-	Kuwait	2.1%	Slovenia	0.3%
Bahrain	-	Kyrgyzstan	3.9%	South Africa	-
Belarus	0.9%	Lebanon	_	South Korea	0.5%
Brazil	-	Libya	0.7%	Spain	0.5%
Colombia	0.7%	Malaysia	-	Sweden	0.8%
Cyprus	0.4%	Mexico	-	Taiwan	0.1%
Chile	1.9%	Morocco	0.9%	Thailand	1.3%
China	1.8%	Netherlands		Trinidad and Tobago	-
Ecuador	0.1%	New Zealand	0.1%	Tunisia	-
Egypt	-	Nigeria	-	Turkey	2.1%
Estonia	0.1%	Pakistan	-	Ukraine	1.6%
Georgia	-	Palestine	-	United States	0.9%
Germany	0.1%	Peru	0.4%	Uruguay	4.4%
Ghana	-	Philippines	-	Uzbekistan	0.4%
Hong Kong	0.7%	Poland	-	Yemen	-
India	-	Qatar	-	Zimbabwe	-