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THE ECONOMIC DETERMINANTS OF POLITICAL ISLAM: AN EMPIRICAL INVESTIGATION OF THE ARAB SPRING IN EGYPT

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Working Paper 939

September 2015

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Abstract

This paper empirically studies the voting outcomes of the first post-revolution presidential elections in Egypt. In light of the strong success of Islamist candidate Mohamed Morsi, I identify three dimensions which can affect voting outcomes: human capital stock, wealth and employment structure. I find that less educated, poorer and more unequal districts support more Islamists. I also find an effect of the employment structure of a district on voting. I test the results by comparing the voting outcomes of the presidential elections to those of the 2011 and 2012 constitutional referendum.

ملخص

نقوم في هذه الورقة بدراسة تجريبية لنتائج التصويت في الانتخابات الرئاسية بعد الثورة الأولى في مصر. في ضوء نجاح قوي من المرشح الإسلامي محمد مرسي، نقوم بتحديد الأبعاد الثلاثة التي يمكن أن تؤثر على نتائج التصويت: مخزون رأس المال البشري والثروة وهيكل العمالة. نجد أن الفئة الأقل تعليما والمناطق الأكثر فقرا والغير متكافئة كانت ذات دعم أكثر للإسلاميين. نقوم أيضا آثار لهيكل العمالة في كل منطقة على نتائج التصويت. نقوم باختبار النتائج من خلال مقارنة نتائج التصويت في انتخابات الرئاسة لتلك الخاصة بالاستفتاء على الدستور لعامى 2011 و 2012.

1. Introduction

The Arab spring was a series of protests and uprisings in the Middle East that began with unrest in Tunisia in 2010 followed by the ousting of the president Ben Ali on January 14, 2011 and proliferated, leading to similar revolts later, in Egypt, Libya, Yemen, Syria, Bahrain, and other Arab nations. The insurgencies in Tunisia and Egypt seemed to offer great hope for the outbreak of democratic change in the Middle East and North Africa. However, the civil war in Libya and the crises in Yemen and Syria suggest that overall regional change may prove to be more difficult to achieve. Egypt has chosen its transition to democracy through a series of events: the constitutional referendum of 2011, the parliamentary elections, the presidential elections and finally the constitutional referendum of 2012. The purpose of this paper is to analyze the outcome of Egypt's first democratic presidential election which took place in May and June 2012.

The preisdential elections have been documented as a success for the Islamist candidate Mohamed Morsi, who was elected as a president gaining 51.7% of the votes. The Egyptian presidential election is influential for two reasons. On one hand, Egypt's first free presidential elections are a very important milestone towards transformation from authoritarianism to democracy following the ousting of Mubarak's regime. After fair and free legislative elections, the presidential elections make democratic practice a tradition. On the other hand, as the most populous Arab country, historically a key regional actor, and a bellwether for trends across the region, Egypt's elections clearly had an impact far beyond its borders. It affected the trajectory of politics and ideology in the region as well as global politics.

This paper is considered as one of the very first papers to examine the rise of political Islam in the Middle East after the Arab Spring. This paper complements Al-Ississ and Atallah (2015), who investigate the impact of patronage and ideology on voter behavior and election outcomes in Egypt and Elsayyad and Hanafy (2014)'s paper which explores the main determinants of Islamist vs. secular voting in Egypt's first parliamentary elections after the Arab Spring based on two dimensions: the socio-economic profile and the electoral institutional framework.

The analysis focuses mainly on three dimensions that can affect voting outcomes: human capital stock, wealth and employment structure of a district. Then, I analyze the outcomes of the constitutional referendum 2011 and 2012 to confirm the results. To do so, I construct a dataset of voting outcomes of the presidential elections, the constitutional referendum in 2011, and the constitutional referendum in 2012 at the district level *(qism/markaz)*. By merging this dataset with Egypt's Population and Housing Census data of 2006, the results show that the three dimensions I identified play a strong role in explaining voting outcomes.

2. Literature Review

This paper is related to two main strands of literature; first, the literature on the relationship between Islam and democracy; and second, economic voting in transitional economies with an application in the context of Egypt after the Arab spring.

First, the paper contributes to the empirical literature on Islam and democracy, which examines the influence of Islam on attitudes toward democracy. According to this literature, Potrafke (2012,2013) confirms the result of Rowley and Smith (2009) who found that countries with Muslim majorities enjoy less freedom and are less democratic than countries in which Muslims are a minority. Contrary to Potrafke (2012), Hanusch (2013) demonstrates that the effect between Islam and democracy found by Potrafke (2012) is spurious. Additionally, Maseland and van Hoorn (2011) explain the combination of observed relatively low levels of democracy in the Muslim world but positive attitudes towards it.

Second, the paper contributes to the literature on economic voting. The first essay on economic voting emanated in Western Europe in 1986 by Lewis-Beck. He found that economic

circumstances are a relatively important voting determinant in Western European countries. They affect British, French, German, and Italian voters. Voters perceive government as responsible for their economic situation; they act to punish the party in power for poor economic performance or reward it for good economic performance, which is known in the literature as the Responsibility Hypothesis. In contrast with the Responsibility Hypothesis, Fidrmuc (2000) demonstrates the strong relationship between economic development and voting behavior in the transition countries by analyzing eight parliamentary elections in four transition countries: the Czech Republic, Hungary, Poland and Slovakia. He proved that voters are forward looking, not retrospective. They support parties, which they expect will benefit them in the future.

Interested in the Middle East after the Arab spring, El Sayyad and Hanafi (2014) studied the main determinants of Islamist vs. secular voting in Egypt's first parliamentary elections after the Arab Spring at the district level. Their results show that education is negatively associated with Islamist voting. They also surprisingly find that higher poverty levels are associated with a lower vote share for Islamist parties. Meyersson (2014) tackles the rise of political Islam by estimating the impact of Islamic rule on education and labor market outcomes using a dataset of Turkish municipalities. By contrast, he shows that Islamic rule has a large positive effect on women's labor force participation and on education. Al-Ississ and Atallah(2014) investigate the impact of patronage and ideology on voter behavior and election outcomes in Egypt. Their results show that the number of public sector and government employees in each electoral district has a positive impact on participation rates.

The paper is structured as follows. Section 2 presents the descriptions of the main post-revolution events. Section 3 presents the data description and the hypothesis I aim to test. Section 4 shows some descriptive statistics. Section 5 presents the empirical approach and regression results. Section 6 discusses the results and concludes.

3. Egypt's Post-Revolution Main Events

3.1 Presidential Elections

The first presidential elections, since the ouster of Hosni Mubarak in February 2011, took place in an atmosphere of uncertainty about the future constitution and its potential to be the basis for a democratic Egypt. Thirteen candidates proceeded to the first round of the presidential elections, which took place on May 23-24, 2012. The Islamists were represented by three candidates: Abdel Moneim Abol Fetouh, symbol of the Muslim Brotherhood's liberal wing; Mohamed Morsi, the head of Freedom and Justice Party, which is the political arm of the Muslim Brotherhood; and Mohamed Saleem Al Awa, an Islamist thinker and senior member of AlWasat (middle) party; the rest were considered secular.

The top two candidates who gained about 25% of the vote each and proceeded to the second round were Mohamed Morsi, the Muslim Brotherhood candidate, and Ahmed Shafiq, Mubarak's last prime minister. Morsi and Shafiq were followed in the results by the Nasserite candidate Hamdeen Sabahi, who received 20% of the vote; former senior Muslim Brotherhood member Abdel Moneim Aboul Fatouh with 17% and former Arab League head Amr Moussa with 11%. Other candidates who got votes from the left and from labor groups included Khalid Ali, a labor organizer and human rights activist; Hisham Bastawisi, a senior judge who was involved in the movement for greater judicial independence; and Abul-Ezz El-Hariri, a socialist labor activist and former parliamentarian[1].

The second round of the elections took place on June 16-17, 2012. On June 24, the final results were announced: Morsi was the new president of Egypt, gaining 51.73% of the vote to Shafiq's

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[1] see "The Carter Center Presidential Election in Egypt Final Report" May–June 2012

48.27% [2]. After the results, liberal and secular youth groups that drove the uprising against Mubarak were left to wonder whether Egypt has taken a step towards becoming an Islamist state.

To understand the success of Islamist groups and political parties, it's important to highlight the Islamists' methods of public outreach. Particularly, the Muslim Brotherhood has a strong history of political opposition and has been known for their social work, such as operating low-cost hospitals, informal study programs and other social services. Thus, they have enjoyed a good reputation among the poor, as the state failed in providing them with social services (Wickham, 2002). Thier outreach and mobilization took place in mosques, community associations, and informal networks. Hence, I am interested in analyzing the determinants of the outcome of the second round of presidential election, which is the victory of the Muslim Brotherhood candidate Mohamed Morsi.

3.2 March 19, 2011 Constitutional Referendum

After the revolution, the Egyptian transitional phase has been mainly shaped by the Supreme Council of the Armed Forces (SCAF) and the March 19, 2011 constitutional referendum. The March 19 constitutional referendum is considered as one of the most important events that happened in Egypt during the transitional phase. It has been the first real referendum in Egypt's recent history. It's a simple "Yes" or "No" vote on some amendments to the 1971 constitution. It also saw the largest turnout in recent Egyptian history (46%) [3]. A constitutional committee was selected by the SCAF to begin amending the 1971 constitution, which had been suspended after Mubarak's resignation. The amendments of nine articles of the suspended 1971 constitution would be the subject of a referendum held on March 19, 2011. They would further define the transition process, focusing on some measures to reduce the power of the president, but weren't still clear enough concerning the aspects of the transition. Among the proposed amendments was an amendment to Article 189, stipulating that a newly elected parliament would have six months to convene a constituent assembly that would have another six months to draft the new constitution before being put to a popular referendum. The amendments also suggested that the referendum on a new constitution be held after a president was elected.

On the one hand, many liberal, secular, leftist, and revolutionary groups were against the referendum, arguing that the constitution should be written first and put to a referendum before presidential elections to ensure that the elected president would not define his own power in the constitution. Hence, they were mobilizing people to vote "No" in the referendum. Islamist groups, on the other hand, strongly supported the referendum and mobilized people to vote "Yes," mainly because they wanted to proceed to the elections, which they expected to win, first.

In my analysis, I am interested in exploring the determinants of voting "Yes" in the March 19, 2011 constitutional referendum to see if they confirm the results of the presidential elections. Voting mainly took the form of an Islamist/secular division symbolized by the competing slogans "elections first"and "constitution first." The Islamists — both Brotherhood and Salafis — whose slogan was "elections first," were mobilizing people to the vote "Yes". Preachers in mosques were misleadingly instructing voters that a "No" vote would lead to the removal of any reference to Sharia [4]. The supporters of the "No" vote, whose slogan was "constitution first", mostly preferred the drafting of an entirely new constitution immediately. In the end, 78% of voters voted "Yes" for the referendum.

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[2] see "The Carter Center Presidential Election in Egypt Final Report" May–June 2012

[3] see "The Final Report of the Carter Center Mission to Witness the 2011–2012 Parliamentary Elections in Egypt"

[4] Sharia is the moral code and religious law of Islam in the constitution

3.3 December 15, 2012 Constitutional Referendum

This constitutional referendum took place on December 1, 2012 after the presidential elections. Egyptian President Mohamed Morsi called for a referendum on the new constitution's final draft, which was passed by the Constituent Assembly. It's a simple "Yes" or "No" vote on all 236 articles of the final draft of the constitution. This referendum was criticized by opposition forces as a rushed attempt to pass the draft of the constitution written by an Islamist dominated Constituent Assembly without consultation of liberal and Christian members. Also, opposition forces believed that this draft constitution represents the interests of the Muslim Brotherhood and does not grant sufficient minority rights.

On December 25, the draft constitution passed with 64% "yes" votes and 36% voting against it[5]. The new constitution is Egypt's first since the 1971 constitution and is the first to be democratically ratified after the January 25 Revolution in 2011. Only Cairo and the governorates of Gharbiya and Menoufiya rejected the draft constitution with 51% voting against[6].

4. Data Description

I created a dataset of voting outcomes and economic characteristics on a district level. To do so, I first collected data on voting outcomes at the district level from the official website of the Egyptian presidential elections, the referendum of 2011 and the referendum of 2012[7]. Islamist votes in the second round of presidential elections were represented by the votes for Mohamed Morsi, president of the Freedom and Justice Party (FJP), the Muslim Brotherhood's political arm.

Second, I used the Population, Housing and Establishments Census data for the year 2006 by the Central Agency for Public Mobilization and Statistics (CAPMAS), Egypt's official statistics agency. It is the most recent census and contains data on economic characteristics of 372 districts *(qism/markaz)* in Egypt. Using the census data, I constructed a dataset on the stock of human capital, living conditions, wealth and the employment structure of a district. Finally, I merged this dataset and the dataset on voting outcomes at the district level.

5. Hypothesis

5.1 Human capital stock

Human capital stock is an important determinant of voting behavior. Human capital is defined as people's innate abilities and talents plus their knowledge, skills, and experience that make them economically productive. It can be increased by investing in health care, education, and job training[8]. Carkoglu and Hinich (2006) analyzed party preferences of Turkish voters and found that primary school and junior high graduates tend, on average, to be pro-Islamist, whereas those with a university degree or higher level of education tend to be the opposite. Besides, Al-Ississ and Atallah(2015) found that the illiteracy rate is negative and significant while the university education had a positive yet insignificant effect on voting for Shafik. Regarding the human capital stock, I will focus on the level of education in a district through the illiteracy rate, and primary and university education. The illiteracy rate was measured as the share of illiterates in the population aged 10 years and above. While, university education

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[5] See egyptelections.carnegieendowment.org/2012/12/19/unofficial-results-of-the-first-round-of-egypt's-december-2012-constitutional-referendum

[6] Ibid

[7] http://presidential2012.elections.eg/index.php/round2-results https://referendum2011.elections.eg/results/referendum-results https://referendum2012.elections.eg/results/referendum-results

[8] http://www.worldbank.org/depweb/english/beyond/global/glossary.html

measured the fraction of a district's population above 10 years old with a university education[9]. In my analysis, I tested the effect of human capital stock on voting outcomes in the presidential elections.

Hypothesis 1: Less educated people tend to vote for Islamists.

5.2 Wealth

According to Carkoglu and Hinich (2006) Shantytown dwellers are more likely to be pro-Islamist whereas those who live in luxurious dwellings are the opposite. However, Elsayyad and Hanafy (2014) found that poor districts vote less in favor for Islamist parties when controlling for education. To measure wealth, I use the average monthly rent of a district in Egyptian pounds as a proxy for district's wealth and its standard deviation as a proxy for inequality within a district. Beyond its political wing, the Muslim Brotherhood has garnered support among Egypt's population during its decades of experience in providing social services to the poor. They have established a network of social services, charities and hospitals in villages and neighborhoods, which filled the gap in government services, creating a popular support among the millions of Egyptians living in poverty. Therefore, I test for the effect of wealth and inequality on voting outcomes.

Hypothesis 2: Wealthier districts are less likely to support Islamists.

5.3 Employment structure

To capture the employment structure in Egypt, I include in the regression the share of hotels and restaurants employment in a district, which is an indicator of the number of people working in the tourism sector. Tourism is the second main source of income for Egypt after oil and gas, generating 9.33 billion dollars in 2011[10]. The people working in tourism sector are more directly affected by changes in the ideology of the government and the variation of the political circumstances. For instance, Islamists planned to ban alcohol and beach tourism, which wouldb have decreased the number of tourists that come to Egypt. I also add to the regression the share of employment in manufacturing sector to see their effect on voting for Islamists.

Hypothesis 3: The share of hotels and restaurants employment has a negative effect on voting for Islamists.

5.4 Controls

I take into consideration the district's age structure by controlling for the different age groups in the regression analysis. I have two age groups: the fraction of population aged below 20, which is an indicator for the number of children per household, and the fraction of population aged above 60 years old. To control for the religious composition of a district, I include a variable for the share of non-Muslim people in a district.

5.5 Women education

I include in a separate regression the share of women having university degree or above, the share of women illiteracy and the share of women who can read and write and having a primary education degree in a district. According to Akarca and Tansel (2007), the lower the share of women in the labor force, the higher the share of religious and conservative people in a district because highly conservative and devoutly religious families tend to oppose female members of their families to work outside the home. Here, I consider the share of women having university degrees as a proxy for gender-balance and modernization. It is also considered as an indicator of the proportion of voters in that district who can be categorized as conservative and religious.

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[9] The educational attainment is defined only for population above 10 years old in the 2006 census data

[10] http://www.ceeba.org/egyptinfo.asp and http://databank.worldbank.org/

6. Descriptive Statistics

I start the analysis by providing some descriptive analysis of the data set. The main variables of interest are the share of votes for Mohamed Morsi in the second round of presidential elections 2011/2012 at the district level, the share of "Yes" votes in the referendum of 2011 and the referendum of 2012 . Table 1 includes summary statistics for all dependent variables. The share of votes ranges from 0 to 1. The means of those variables reveals the popularity of Islamist parties in Egypt. The mean reaches about 53% on the district's average during the second round of the presidential elections, 79 % during the referendum 2011 and finally 67 % during the referendum 2012.

However, there is heterogeneity in voting in favor of Islamist groups across districts. The share of votes for Mohamed Morsi the Islamist candidate during the second round of the presidential elections ranges between 17% and 97%. The share of "Yes" votes in the referendum of 2011 ranges between 32% and 99%. Finally, the share of "Yes" votes in the referendum of 2012 ranges between 16% and 99%.

Table 2 shows summary statistics for the explanatory variables. Concerning the variables that reflect the stock of human capital in a district, the mean of the share of university graduates reaches about 11.5% on district's average and ranges between 0 % and 65.2%. Also, the mean of the illiteracy rate is 28.3% while it varies a lot across districts between 1.6% and 63.9%. Regarding the variables that express the living conditions, I found that the mean of the average monthly rent in a district is 183.9 Egyptian pounds[11] varying between 7.6 and 1500.7 Egyptian pounds. Additionally, the monthly rent is variable within a district. The mean of the standard deviation of the monthly rent within a district is 176.7 Egyptian pounds ranging between 4.7 and 1027. Besides, the share of restaurants and hotels employment varies between 0% and 46.5%. According to the religious composition of a district, the mean of the share of non-Muslims is 4.9%; it varies between 0% and 31.7% across districts.

7. Estimation Strategy and Results

7.1 Estimation strategy

The goal is to analyze the determinants of Islamist voting in the presidential election at the district level. To do so, the share of people who voted for the Islamist candidate Mohamed Morsi in the second round of the presidential election is the dependent variable in the regression. To check the robustness of the results, I run two complementary regressions where I include the share of people who voted "Yes" in the 2011 and 2012 constitutional referendum in a district respectively as dependent variables. These two referendums are suitable for testing whether the determinants of the support of Islamists are constant over time as the presidential election took place between the referendum of 2011 and of 2012. The voting outcome of the second round of presidential elections and the two referendums are not determined independently from each other, which may create a correlation between errors and affect the efficiency of results that will be obtained in case of using an OLS. Thus, in order to avoid this problem, I will use the Seemingly Unrelated Regressions (SUR) [12] model that allows errors to be correlated across the equations system and still give more efficient regression estimates. A Breusch-Pagan test is used to test the correlation between the error terms. Table 3 presents the regression results of the model on determinants of the Islamist voting.

7.2 Results

I now turn to the analysis of the hypotheses. First, I find that the stock of human capital matters. Like Al-Issis and Atallah, I find that the coefficients of both illiteracy rates have a positive and

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[11] 1 USD = 6.96 EGP

[12] Zellner A (1962)." An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias".Journal of the American Statistical Association, Vol. 57, No. 298 (Jun., 1962), pp. 348- 368.

significant effect, at 1% level, on voting for the Islamist candidate Mohamed Morsi. However, the share of university graduates in a district is negative yet statistically insignificant. In other words, districts with a higher illiteracy rate are more likely to vote for the Islamist candidate in the presidential elections. Hence, **Hypothesis 1** is verified.

Regarding the living conditions of a district, I find that the average monthly rent in Egyptian pounds, used as proxy for districts' wealth, and its standard deviation, used as proxy for inequality within a district, are significant at 1 % level. The average monthly rent of a district has a negative effect on the support of Islamists, which means that wealthier districts were less likely to vote for the Islamist candidate Mohamed Morsi. However, the proxy for inequality affects positively the share of votes for the Islamist candidate. In other words, unequal districts tend to support the Islamists more. So, **Hypothesis 2 and 3** are valid and reflect the popularity of Islamists groups among the poor Egyptian districts.

Regarding the employment structure of districts, I found that the share of hotels and restaurants is significant at 10% level and negatively affects the dependent variable. I can further say that districts with higher share of hotels and restaurants employment were less likely to support Islamists in the presidential elections. Therefore **Hypothesis 4** is verified.

Finally, concerning the control variables, only the share of population aged above 60 and below 20 turn out to be significant at 5% and 10% respectively. The share of population aged below 20 is an indicator for the number of children per household, which means that higher number of children in a household positively affects the support for Islamists.

7.3 Robustness

To check the robustness of the previous results, I compare them to those of the two complementary regressions where I regress the share of people who voted "Yes" in the 2011 and 2012 constitutional referendum in a district respectively on all the explanatory variables.

For the human capital stock variables, the coefficients share of university graduates turns out to be statistically significant at 1% level in the two complementary regressions, which proves that this determinant of voting outcomes is not constant over time. We can see that there is a negative relationship between the share of university graduates in a district and the share of "yes" votes in both constitutional referendums 2011 and 2012. However, for illiteracy rate, it's significant only in the constitutional referendum 2012.

Furthermore, regarding the living conditions in a district, the results support the second hypothesis since the average monthly rent in Egyptian pounds in a district, which is a proxy for wealth, turns out to be significant and affects negatively the share of people voting "Yes" in a district in the referendums of 2011 and 2012. However, the proxy for inequality isn't significant which means that inequality within a district has no effect on support the Islamists in the referendum of 2011 and 2012.

Concerning the employment structure of districts, in the referendum of 2011, the manufacturing sector employment became significant. However, the hotels and restaurants employment has a significant effect on voting "yes" in the constitutional referendum of 2011 only.

Finally, the share of population below 20 is significant in the 2011 and 2012 referendums regressions, which supports the results of the presidential elections regression. The share of non Muslims turned out to be significant at 1% level and has a negative effect on the "Yes" vote in referendum 2011.

In Table 4, I ran the same 2 regressions using women education instead of overall education variables to see the effect of women's education level on the support for Islamists. The share of women having university education in a district has a negative and significant effect on

supporting Islamists in 2011 and 2012 referendums, however it's insignificant in the presidential elections regression. Moreover, women's primary education has a negative and significant effect on supporting Islamists in the presidential elections, however, women illiteracy has a positive and significant effect.

8. Discussion

According to the literature on economic voting, voters perceive government as responsible for their economic situation. They act to punish or reward the party in power depending on its economic performance, which is known in the literature as the Responsibility Hypothesis. Since, I have data on economic characteristics and voting outcomes at the district level, I empirically analyze the determinants of Islamist votes in the first post-revolution presidential election and test alternative hypothesis to the economic voting one of Lewis-Beck 1986.

By using this novel dataset, the analysis reveals that human capital stock, poverty and inequality are important factors in determining voting outcomes. According to the first hypothesis, less educated people tend to vote for Islamists. This result is not surprising because Islamist groups use pulpits of mosques for political propaganda, which are major sources of information and knowledge for less educated and illiterate voters. Additionally, poorer and unequal districts vote more for Islamists due to the social services that have been provided by Islamists for millions of poor Egyptians for decades. Concerning the last hypothesis, the result is convincing given the conservative views of Islamist parties and the restrictions they would like to impose concerning tourism.

Due to data limitation, I am not able to make any individual inferences from the results. Conducting individual surveys could be the next step in better analyzing the determinants of the voting behavior in Arab Spring countries.

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Table 1: Summary Statistics for Dependent Variables

Variable	Mean	Std. Dev.	Min.	Max.	N
Share of "Yes" in the referendum of 2011	0.786	0.135	0.318	0.995	326
Share of votes for the Islamist candidate in the second round of the presidential election	0.534	0.138	0.165	0.972	325
Share of "Yes" in the referendum of 2012	0.667	0.19	0.155	0.989	322

Table 2: Summary Statistics for Independent Variables

Variable	Mean	Std. Dev.	Min.	Max.	N
Human Capital Stock					
University Education	0.115	0.101	0	0.652	372
Primary Education	0.236	0.066	0.065	0.562	372
Illiteracy rate	0.283	0.132	0.016	0.639	372
Living Conditions					
Average Monthly Rent	183.907	519.122	7.564	1500.719	371
Standard Deviation for the Monthly Rent	176.674	106.631	0	1026.978	370
Employment Structure					
Restaurants and Hotels Employment	0.02	0.03	0	0.465	372
Manufacturing Sector Employment	0.116	0.088	0	0.700	372
Controls					
Population Over 60	0.053	0.03	0	0.185	372
Population Below 20	0.436	0.136	0.091	0.956	372
Proportion of Non-Muslim	0.049	0.06	0	0.317	372

Table 3: Determinants of Islamist Voting- SUR Results

Variable	Voting Yes in 2011 Referendum	Voting for Mursi in the Presidential Elections	Voting Yes in 2012 Referendum
Human Capital Stock			
University Education	-1.183***	-0.145	-1.137***
	(-14.44)	(-1.09)	(-7.41)
Illiteracy	0.00888	0.279***	0.205**
	(0.17)	(3.39)	(2.14)
Primary Education	-0.567***	0.182	-0.330
	(-5.10)	(1.02)	(-1.58)
Living Conditions			
Average Monthly Rent (proxy for wealth)	-0.000257***	-0.000308***	-0.000411***
	(-4.25)	(-3.17)	(-3.63)
Standard Deviation of the Monthly Rent (proxy for inequality)	0.0000782	0.000262***	0.000223*
	(1.26)	(2.62)	(1.92)
Employment Structure			
Restaurants and Hotels Employment	-0.975***	-0.754*	-0.281
	(-3.60)	(-1.73)	(-0.55)
Manufacturing Sector Employment	-0.0135	-0.118	-0.251***
	(-0.28)	(-1.54)	(-2.82)
Controls			
Population Over 60	0.233	-0.947*	-0.552
	(0.73)	(-1.84)	(-0.92)
Population Below 20	0.210***	0.286**	0.446***
	(2.81)	(2.38)	(3.19)
Proportion of Non-Muslim	-0.812***	0.115	0.00101
	(-11.34)	(0.99)	(0.01)
Constant	1.022***	0.367***	0.690***
	(21.10)	(4.70)	(7.60)
No. of observations	312	312	312
R-Square	0.7537	0.3618	0.5615

Notes: Breusch-Pagan test of independence: chi2(3) = 141.231, Pr = 0.0000, Notes: t statistics in parentheses, *, ** and *** denote significance at the 10%, 5% and 1%.

Table 4: Determinants of Islamist voting- SUR results

Variable	Voting Yes in 2011 Referendum	Voting for Mursi in the Presidential Elections	Voting Yes in 2012 Referendum
Human Capital Stock			
Women University Education	-1.265***	-0.0615	-1.107***
	(-14.06)	(-0.42)	(-6.34)
Women Primary Education	-0.978***	-0.590*	-0.519
	(-4.92)	(1.81)	(-1.35)
Women Illiteracy	-0.00986	0.576***	0.415**
	(-0.11)	(3.90)	(2.38)
Living Conditions			
Average Monthly Rent(proxy for wealth)	-0.000264***	-0.000271***	-0.000391***
	(-4.52)	(-2.83)	(-3.46)
Standard Deviation of the Monthly Rent (proxy for inequality)	0.0000783	0.000240**	0.000193
	(1.29)	(2.41)	(1.64)
Employment Structure			
Restaurants and Hotels Employment	-1.009***	-0.801*	-0.330
	(-3.79)	(-1.83)	(-0.64)
Manufacturing Sector Employment	-0.00411	-0.0941	-0.226**
	(-0.09)	(-1.20)	(-2.45)
Controls			
Population Over 60	0.380	-1.317**	-0.666
	(1.16)	(-2.45)	(-1.05)
Population Below 20	0.200**	0.286**	0.414***
	(2.56)	(2.38)	(2.73)
Proportion of Non-Muslim	-0.785***	0.112	0.000101
	(-11.33)	(0.98)	(0.00)
Constant	0.972***	0.373***	0.643***
	(21.03)	(4.91)	(7.18)
No. of observations	312	312	312
R-Square	0.7638	0.3642	0.5498

Notes: Breusch-Pagan test of independence: chi2(3) = 147.228, Pr = 0.0000, Notes: t statistics in parentheses, *, ** and *** denote significance at the 10%, 5% and 1%.