The Effect of the Arab Spring on the Preferences for Redistribution in Egypt*
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Abstract

The present paper investigates the effect of the revolution occurred in January 2011 in Egypt on the Preferences of Redistribution. This shock has been an important event enhancing the freedom situation and political structure. In a first step taking into account the main determinants explaining Preferences of Redistribution displayed in literature, our results differ showing a positive impact of the religion and a negative impact of the altruistic attitude. In a second step, we rely on a diff-in-diff approach to estimate the effect of the revolution using as control group three similar countries. We find that Egyptians became much more favorable to redistribution after the Arab Spring. Moreover, the revolution effect is stronger for the poorest people and those who are interested in politics.

JEL Classification: H23, D74.

Keywords: Redistributive preferences, Revolution, Arab spring, Freedom, Political situation.

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1 Introduction

As shown in the world inequality report (W.I.R) the income inequality measured by the concentration of income in the hands of the wealthiest 10% has increased since 1980 in nearly all world regions (Alvaredo et al. (2018)). Understanding the determinants of the *preferences for redistribution* presents a key topic in the fight against these inequalities. Many motivations drive this attitude as explained by many scholars (Fong, 2001; Corneo and Grüner, 2002; Alesina and Giuliano, 2009). One of the interest aspects in this topic is the political regime under which individuals can express their preferences (Acemoglu et al. (2015)). Schläpfer et al. (2008) showed how the preferences of citizens could be influenced by political institutions, Kymlicka (2004) in turn stresses the importance of the political liberties in the individual economic attitudes.

In this paper, we are interested in the possible impact of a change in the political regime and in the level of political and informational freedom on the preferences for redistribution, with an application in the case of the Egyptian Revolution. The 25 January revolution which belongs to the Arab Spring, has been an important part of a revolutionary wave where many democratic ideas were spreading. This wave started on 17 December 2010 in Tunisia and has been spread in different forms in many Arab countries like Egypt, Yemen, Libya, Morocco, Jordan and Lebanon. In Egypt, where the most popular slogan was "Bread, Freedom, Social Justice", the revolution succeed, the political regime changed and many shifts occurred at the freedom and political levels. Between 2011 and the first half of 2012 a lot of new political parties were created, and many elections were held. If we look to the evolution of the attitudes towards redistribution between 2008 and 2012 in Egypt in Figure 1, we see that the distribution of the variable presenting the demand for redistribution increased drastically between the two periods. Based on World Values Survey (WVS) data, 22% of the Egyptian population was in favor of the redistribution in 2008, this percentage rose to 59 % in 2012 (Table 2). This evolution not only impacted the poor people but also the rich: for people belonging to the first quintile (the poorest), this percentage increased by 46%, and for people belonging to the fifth (the richest) this percentage increased by 18%.

Individual preferences for redistribution change over time for many reasons, some are related to personal life evolution, others are related to broader events. The subject of the evolution of the demand for redistribution over a short period constitutes one of the most interesting research quests, especially when what we called a "shock" happens whose effects on the demand for redistribution are anticipated. In the field of the study of the shock effect on the redistribution attitude, Olivera (2014) and Kroeger (2014) showed how the European economic crisis increased the support for redistribution. Margalit (2013) was interested in the American Great

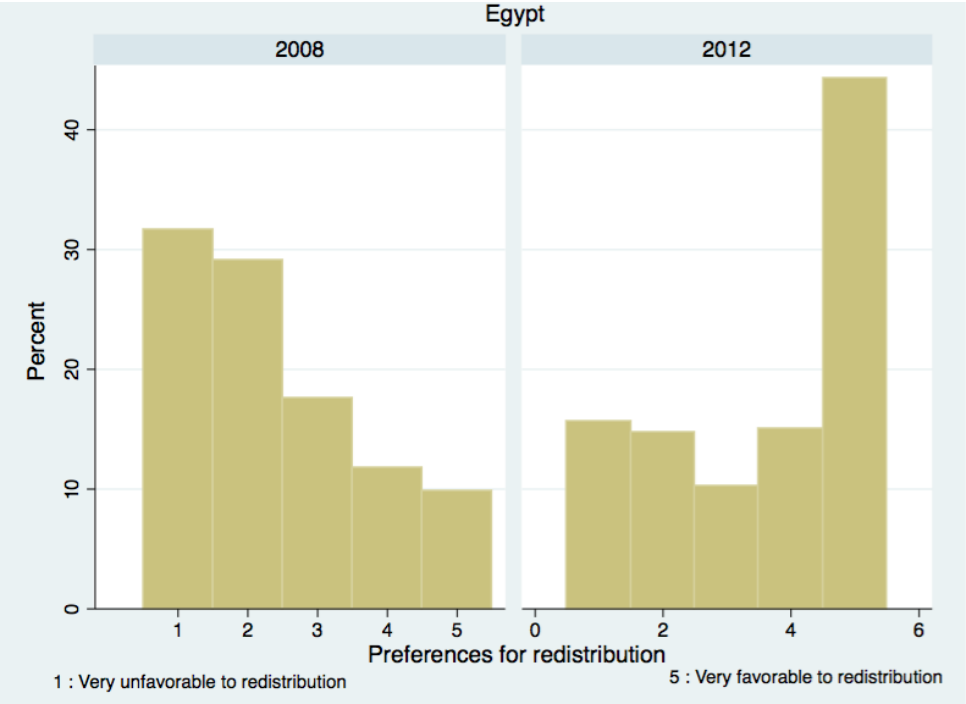

Figure 1: Evolution of the support for redistribution in Egypt between 2008 and 2012

recession leading to conclude that a personal economic shock like a job loss has a positive effect on the demand for redistribution. Dahlberg et al. (2012) showed how increasing the number of immigrants to Europe lead to reduce support for redistribution among natives in the case of Sweden, and Brunner et al. (2011) studied for California the positive economic shock and found that it reduces the support for redistribution.[1] Even if the Egyptian revolution is considered as "political" driven and not an as "economic" one like those quoted above, we keep using very similar methods, since it remains the effect of time which we are interested in. A significant result for the Egyptian revolution helps us to shed new light on the role of freedom and political offer on preferences for redistribution. It also contribute to the literature about the link between political institutions and the economic trajectory, Acemoglu and Robinson (2013) in the preface highlighted the case of the 1688 British revolution leading to transformation of politics and thus the economics of the nation. In fact, a change of the individual preferences about an economic question like the redistribution can be a part of the long term economic change process.

This paper is also the first, to the best of our knowledge, which study the subject of the demand for redistribution in some Arab countries. The Arab world has some characteristics

[1] Dahlberg et al. (2012) explained this result by the fact that more ethnic heterogeneity lead to reduce the demand for redistribution among natives.

differing it from the developed countries, where most of the researches on demand for redistribution were done. In the first place, about the political situation, Arab countries are considered until now as the most repressive regimes in the World always having the worst ranking in all freedom components (Freedom House (2018)). Elbadawi and Makdisi (2010) talks about a crisis of democracy in the Arab world. In the second place, the whole Arab culture structure has many specificities notably in some important aspects like the particular place of the religion, the relation between the citizens and the government and the vital role of the charitable organisations which would contribute to shape the social preferences differently from other well studied developed countries (Teti et al. (2017)). Indeed, many determinants of the support for redistribution are related to cultural dimensions . Therefore, in our study of the effect of revolution, it seems necessary to take stock of the structure of the determinants of the demand for redistribution in Egypt, and therefore control the effects of these factors to isolate the effect of the political change.

The methodology that was adopted in this paper is based on the following idea : if we control for the maximum number of factors that could have an effect on the evolution of the demand for redistribution, the remaining effect of the period between 2008 and 2012 can be considered as the effect of the "political re-foundation" in Egypt. We use in the same line a difference-in-difference approach for the effect of time concerning 3 countries having similarities with Egypt but did not experienced a revolution: Jordan, Morocco and Turkey. We also apply different robustness checks to strengthen our results. Without surprise, the revolution – and therefore the political and the freedom situation change – has a very strong positive effect on the demand for redistribution in Egypt in all the cases. In trying to find convincing explanations binding this result to changes that occurred with the revolution, we study the heterogeneous effect of the revolution over the economic and the political-interested groups. We find that the most affected were the poor individuals and the groups who are the most interested in politics. In the same regressions, we also take care of the effects of the different factors we study in a quest to understand better what characterize Egypt and the 3 other similar countries. In general, at least for Egypt, we have big similarities with literature results especially what relates to the self-interest factors, for example, a better financial situation decreases the support for redistribution. But we also have some particularities for which we search explanations like the positive effect of the religion and the negative effect of being altruist on preferences for redistribution .

The results we obtain along with the reading of the political and freedom situation, guide our interpretation to state that the revolution – after 14 months of its outbreak – enhanced a shift in the collective consciousness about the question of redistribution. This shift is particu-

larly strong for the poorest individuals which means that a part of this change may be related to inequality perception matters. This shift also had a greater impact on the very interested individuals in politics which indicates that the new political speech based in the matter of democracy, social justice and the importance of freedom can be considered as a part of the explanation. In fact, when the level of freedom is very low, the individual faces some inability to make a political decision. In the field of preferences for redistribution, we suppose implicitly that at some threshold of Freedom, individuals can have access to the necessary political and economic information to participate in the political life and therefore know what choices they dispose of. It can be considered the case in most of the countries when studies about preferences for redistribution have been lead (mainly in Europe and USA), which was by far not the case in Egypt. In the absence of a minimum level of political and civil liberties, it becomes difficult for individuals to decide how to lead their lives (Kymlicka (2004)). Karshenas et al. (2014) stress the attention to the "democratic-developmental social contract" where interest groups discuss on the social justice system, and show how the Arab spring created the conditions for that.

By focusing on the Arab countries and especially Egypt, our study contributes to the growing literature on the determinants of preferences for redistribution by providing the first analysis of these preferences for this region of the world. The second contribution lies in showing the critical role of the informational and political freedom on shaping the support for redistribution. This is achieved by evaluating the effect of the Egyptian revolution on this attitude. We underline that this phenomenon has been rarely studied because the difficulty to have data just before and after a big event like a revolution, which is the case for Egypt.

The remainder of the paper is organized as follows. Section 2 lays out the description of the economic, political and freedom situation before and after the revolution in Egypt. Section 3 presents the data and the descriptive statistics concerning Egypt and some other Arab countries. In Section 4 we posit the empirical strategy to obtain the results we are looking for. Section 5 presents all results concerning the determinants for demand for redistribution in Egypt, the effect of revolution controlled for these factors, the differential effect of revolution, and the effect of revolution controlled for the Arab trend. In Section 6 we provide some explanations about why the revolution had a positive impact on preferences for redistribution. Finally, Section 7 concludes.

2 Context : Egypt before and after revolution

The revolution is a broad popular movement outside the existing constitutional structure, or outside the legitimacy, whose aim is to change the system of government existing in the state

as was defined by Azmi Bishara in his book "Revolution and the ability to revolution" written after Arab Spring (Bishara (2012)). According to this definition and other studies the Egyptian social movement was one (Brownlee et al. (2015)). This revolution created a strong conscience among Egyptians that the suffering they endure is a result of injustice and it is not a given social situation, and that it is essential to be a free citizen involved in the political life (Bishara (2012)). We are trying in this Section to find what factors could have enough strength to shift the preferences of the individuals as we see for Egypt. After displaying main events of the revolution, we depict the consequences the revolution had on three vectors: the economic situation, the political landscape and the situation of freedom.

Events. In the months preceding January 2011, several events happened in Egypt considered as the direct causes of the Egyptian revolution starting on the 25th of January 2011. In 6 June 2010, one of the events that made a big noise in the social medias was the death story of "Khaled Saïd" in police custody. Another important fact, was the holding of the 2010 Egyptian parliamentary elections two months before the revolution described as the "most fraudulent poll ever" in Egypt's History, 91% of sets were won by the National democratic party (NDP). In 1 January one of the most prestigious Coptic church was the target of a violent bombing known as the Alexandria Bombing. In 6 January another history of death by torture on the buildings of the State Security investigations services (the highest national internal security authority in Egypt) was spread remained citizens the history of "Khaled Saïd". The success of the Tunisian revolution in 14 January was also one of the main factors behind the start of the Egyptian revolution, which gave Egyptians a hope of the possibility of change. Four days after, four individuals burn themselves imitating what happened in Tunisia and triggered the Tunisian revolution. This chain of events lead to a very sharp decreasing of the life satisfaction indicator among the Egyptians during this period(Devarajan and Ianchovichina (2018)), and therefore prepares the ground of the revolution.

For the present analysis, it is essential to be sure that the preferences for redistribution were not a main determinant driving the revolution. We have seen above that the direct motivations behind the revolution were of political and freedom nature. In fact, in the literature related to Egyptian uprisings many scholars discussed drivers of the revolution and agreed on the limited role of the economic factors and inequalities compared with the other Arab countries. Devarajan and Ianchovichina (2018) explained how a broken social contract - by the sharp decreasing of the Egyptian satisfaction - not high inequality led to the Arab spring. Costello et al. (2015) found limited support of the "bread" explanations of the determinants of the Arab awakening protests and have asserted that the strongest predictor was the political terror.

On 25 January 2011, the 6 April youth movement and others opposition groups called to protest for a day called the "Day of Anger". The Facebook page "we are all Khaled Said" was the principal stand called to this protests. Demonstrations were maintained in different cities, one of the characteristics of this revolution is that it was popular, people from all social spheres participated (Bishara, 2009; Costello et al., 2015) where the first claims of the Egyptian people was about restoring dignity and get rid of the restriction of liberties (Dabashi, 2012; Telhami, 2013). Costello et al. (2015) showed that the quickly mushrooming of this movement happened in Egypt and not in other countries, can be explained by the violent way Egyptian government responded to these demonstrations. The high number of martyrs and detained across the countries in these days accelerated the process of the revolution. After 16 days of demonstrations, Hosni Mubarak resigned as president. This revolution was in line with the revolutionary wave that began in Tunisia in December 2010 and stretched to many other Arab countries, a wave called "The Arab Spring". In many other countries like Morocco and Jordan, similar demonstrations have been maintained with very closes demands and motivations, but without a real change on the political scene. Acemoglu and Robinson (2000) offer a theoretical frame for the elite decision against a revolutionary threat where they explain how the "repression choice" along with weak concessions may lead to the change of the elite, what happened in Egypt. The success of the Egyptian revolution was the beginning of a series of changes concerning the social and political life of citizens.

In the next paragraphs we present the main shifts concerning the economic situation, the political landscape and the degree of freedom in Egypt after revolution compared to before revolution. This discussion will help us shedding light in more detail on the main motivations of the revolution and the big changes occurred on the Egyptian stage after the success of revolution. In the next paragraphs we prove that the main evolution was essentially on the political and freedom domains.

Economic. If we look to the Egyptian economy from 2000 to 2011, we find that many economic indicators were improving (Giesing and Musić (2019)) . The growth rates from 2004 to the eve of the Egyptian revolution were always positive and quite high (between 4.09% and 7.15%) and Gini index slightly improved between 2004 and 2010 (31.9 to 31.5) (The World Bank (2018a), The World Bank (2018b)). We note the same trend for the Human Development Index HDI (from 0.63 in 2005 to 0.68 in 2010) (United Nations (2018)). About the social security system, Egypt affected by her communist past, have a relatively complex but developed one, where the state subsidies the food and the fuel and where the coverage of the health insurance is large. The quality of these services were regressing over the time because of the boom demographic

development and the high level of corruption.[2] Between 1966 and 2011, the number of Egyptians jumped from 30 million in 1966 to 80 million in 2011, which created a huge burden to the government trying to find jobs for all these young highly educated individuals Giesing and Musić (2019). Another problem is the high level of corruption which led to unequal treatments regarding the employment, opportunities and the access to public services.

The literature about revolution stressed the presence of these questions on the Egyptian protests, even if they minimized the role of these factors on the outbreak of the demonstrations. Devarajan and Ianchovichina (2018) talked about an "Arab inequality puzzle" when describing this phenomena. Costello et al. (2015) as we cited above, showed in their discussion on the determinants of the Arab awakenings protests, the limited role of the economic factors on these revolutions. In the few months directly after the revolution, as Abdou et al. (2013) presented in their document, the economic situation was damaged, but apparently not to the point of having an effect on people's financial feelings. Indeed, in our data, the percentage of individuals unsatisfied (or very unsatisfied) with their financial situation in 2012 compared to 2008 was almost the same: 42% in 2008 and 44% in 2012. However, according to Giesing and Musić (2019), a change happened on some aspects of the household economic behaviour. Egyptians spend more in their son's education since they had a positive perception of the future, but in the same time, faced with the economic uncertainty resulting of the recent upsets, they increased savings. The 2011 protests increased – because of this economic uncertainty – also the women's employment El-Mallakh et al. (2018).

Politics. In the political field, only one political party was really existing, the National Democratic Party (NDP), considered as a single party, authoritarian and centrist (El-Mikawy (1999)). The emergency law was maintained during all the duration of Mubarak presidential (Othman (2012)). Freedoms of assembly and association in 2008, 2009 and 2010 were heavily restricted (Freedom house, 2008, 2009, 2010). Table 3 presents the bad ratings of some freedom components in these years (2008 and 2009).

After few months of the revolution, many political parties were created with different economic and ideological programs, parties have succeeded very well in the legislative elections done in the end of 2011 and the beginning of 2012, with the almost disappearance of the old political class.[3] In this legislative election, the turnout rate was very high (62%) compared

[2]Note that, according to our data, the evolution of corruption itself explains nothing of the sudden support to the redistribution. More details upon request.

[3]If we look to the foundation date of the winner political parties in these elections, we found that those who were founded in 2011 (after revolution) collected more than 80% vote cast.

to the 2010 legislative election (27,47% in 2010). In 2012, for the first time in the history in Egypt, the presidential election corresponding the global standards was done, the turnout was also very high compared to the 2005 presidential election (51.85% in 2012 and 22.95% in 2005). In addition, there were also one referendum and one consultative council elections. In just two years (2011 and 2012), Egyptian citizens have participated at 3 democratic events. This year (2012) has also seen the lifted of the emergency state after 30 years. One of the most important variables we have in the database showing how the relationship of individuals has changed towards politics, is the degree of interest in politics: the distribution of individuals over the degree of interest in politics changed sharply after the revolution as we can see in Figure 2.

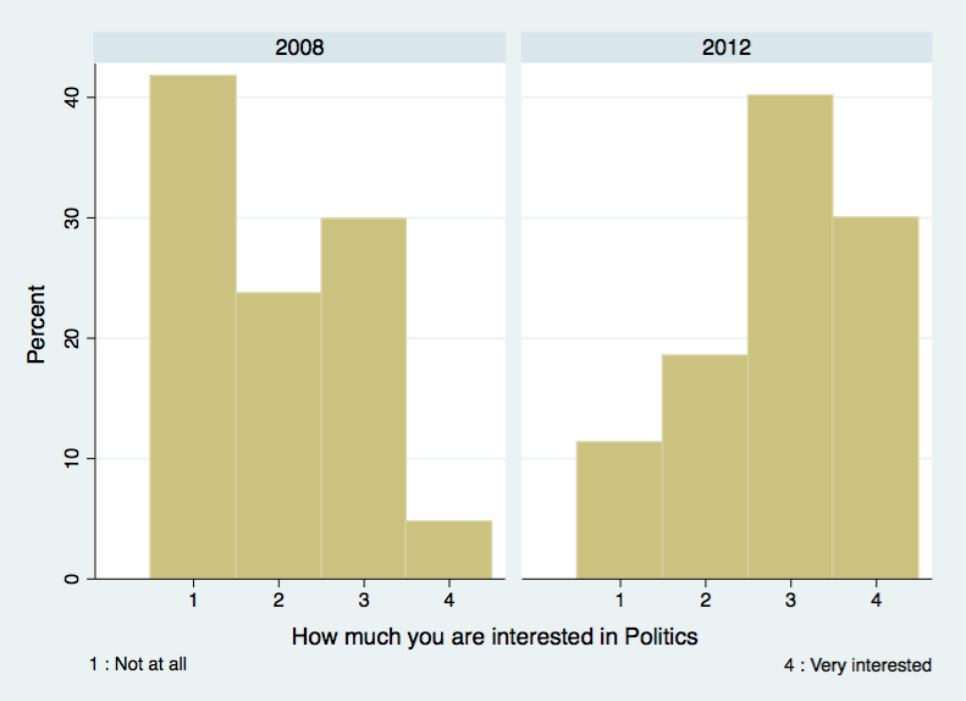

Figure 2: Interest in Politics : Egypt

Freedom. On the eve of the Arab Spring, the Arab world was considered as the most repressive region in the world. Egypt was a part of this reality: from 1981 until the revolution in 2011, Egypt was always considered one of the least free countries. Egyptians were chaired all this time by the same person, the ex-general "Hosni Mubarak". Amnesty international (2011) criticized several times Mubarak administration, for reasons linked to restrictions on freedom of expression and assembly, and also for political censorship. To show the development of the freedom situation at this level after the revolution , we rely on the Human Freedom Index (HFI) presented in table 3: some indicators improved strongly between 2008 and 2011-2012. The freedom of association and demonstration has increased by three times from 2.5/10 to

7.5/10 (0 means no freedom at all; 10: the best freedom situation), the freedom of assembly and the freedom to establish organizations have also rocketed. Moreover, the NGO "Freedom house" improved the rating of Egypt's political rights in 2012 from "Not Free" to "Partly Free" (Vasquez and Porcnik (2016)).

Another important evolution concerns the freedom of information. Table 3 reports the evolution of the freedom information in Internet: the state control over Internet access has become much less influential, from 3.3/10 to 7.5/10 (Vasquez and Porcnik (2016)). The same report also mentioned the increasing of the number of independent television stations and the number of newspapers, and the improvement of the Academic Freedom . These social medias were considered as the most important platforms where citizens expressed themselves and where the political parties had an independent tool of communication. In fact, the number of Facebook and Twitter users has risen very strongly in the two years after the revolution (Mourtada and Salem (2011)), and Facebook becomes the most popular search queries in Egypt (Wolfsfeld et al. (2013)). Many authors showed the positive effect of the social media in organizing the demonstrations and discussing news before the revolution (Lotan et al. (2011),Stepanova (2011)). This effect remained present after the revolution and played an essential role in shaping political debates, and spreading democratic ideas (Howard et al. (2011)). As we can see in table 3 the classical media did not benefit from the improvement of Freedom situation, the political pressures and controls on Media content did not change also, which leads citizens to look after social medias (Howard et al. (2011)). Dabashi (2012) explains how news media, essentially social media with the new Internet newspapers, helped in the circulation of knowledge of civil liberties, and how that they were the real theorists of the Arab Spring.

3 Data and descriptive statistics

3.1 Data

The data come from the World Values Survey data (WVS). These data consist of nationally representative surveys conducted in almost 100 countries on six waves between 1981 and 2014. The first wave including Arab countries was the fourth wave (1999-2014). Since we are only interested in the change due to revolutions, we limit our interest on the wave before the Arab Spring and the wave after, to know the wave 5 (2005-2009) and the wave 6 (2010-2014). For Egypt, the wave 5 was conducted between 15 March 2008 and 05 April 2008, and the wave 6 between 01 March 2012 and 30 April 2012.

We can see in table 4 the availability of data for several Arab countries in the waves 5 and 6. We also add Turkey even if it is not an Arab country for the religion, geographical and historical similarities. We can see that we have the data simultaneity before and after Arab revolutions only for five countries: Egypt, Iraq, Jordan, Morocco and Turkey.

Even if the World values Survey data were used in several papers for studying the preferences for redistribution we have to be aware for some limitations in the WVS (Alesina and Giuliano, 2009; Klor and Shayo, 2010; Shayo, 2009). In First, the size of samples is uneven between the countries and between the waves for the same county. For example, for Egypt the size of the sample for the wave 6 is around 3000 observations while it is around 1500 observations for the wave 5. In second, some variables suffer for a high number of missing values or even not asked, which is the case for the Ideological position variable in the Jordan and Morocco data, fortunately we don't suffer from this problem for Egypt's variables. Another problem is that the WVS data is collected by a chosen participant of each country and the survey schedule is not unified.[4] If we look to waves 5 and 6, we see that it was conducted in a relatively large range of year (2005-2009 and 2011-2014 respectively). We take into consideration – as far as possible – these limitations in our analysis.

For the first part of the study concerning the determinants of preferences for redistribution in Egypt, we rely on the data available for Egypt in the waves 5 and 6. We also test the effects of these factors on demand for redistribution for other Arab countries in order to help us to explain the results we find for Egypt. For the second part of the study concerning the effect of the Egyptian revolution on demand for redistribution in Egypt, we are relying on the data collected for Egypt, Morocco, Jordan, Turkey for the same period.

3.2 Descriptive statistics

In tables 1 and 5, we represent some information about the main individual characteristics of the individuals in the sample before and after January 2011 for Egypt, Jordan, Turkey and Morocco, as well as the financial situation and the attitudinal variables. In table 1, the first three columns refer to the period before the revolution for Egypt (at the beginning of 2008)

[4]In the political context before the revolution and in the turmoil of after revolution these limitations are particularly important, therefore we examined the documents discussing the sampling and methodological issues, and we found nothing to be alarmed about. We also checked ourselves the original questionnaire and the adopted translation.

and the three last columns refer to the period after the revolution for Egypt (14 months after the revolution). The last column in table 1 refers to the maximum value of the correspondent variable, besides the binary variables the minimum value is always 1. The same design is made for Jordan, Morocco and Turkey with different fieldwork periods. More details can be found in Appendix 3.

Table 1: Summary statistics : Egypt

	Egypt						
	Before Revolution (15-03-2008 - 05-04-2008)			After Revolution (01-03-2012 - 30-04-2012)			
	Mean	Sd	N	Mean	Sd	N	Max
Pref for redistribution	2.39	1.3	2988	3.57	1.53	1477	5
Individual characteristics							
Age	2.47	0.9	3028	2.48	0.94	1477	4
Woman	0.617	0.48	3028	0.68	0.46	1477	1
Education level	1.91	1.05	2966	1.96	1.10	1378	4
Having Children	0.82	0.38	3028	0.63	0.48	1477	1
Current Welfare							
Financial situation	2.70	1.248	3027	2.75	1.30	1477	5
Attitudinal variables							
Ideological position	1.67	0.73	2707	2.25	0.70	1477	3
Attend Religious activities	0.47	0.49	3025	0.38	0.48	1477	1
Aversion to risk	1.47	0.73	3003	1.86	0.78	1477	3
Social trust	2.87	1.26	2989	3.02	1.12	1477	5
Importance of helping	2.64	0.56	3022	2.63	2.63	1477	3
Altruism to Children	0.52	0.49	3028	0.29	0.45	1477	1
Having control (Effort role)	2.1863	0.814	3022	2.33	0.815	1477	3
Being interested in politics	1.97	0.95	3024	2.88	0.96	1477	4

The size of the samples is between 1000 and 1500, except the 2008 sample for Egypt which is 3000 individuals. Some variables are missing in some samples which we will take into account our analysis. Concerning the individual characteristics variables across countries before 2011, one notes that they have fairly close means except for the number of womans where is quite highly in Egypt.

Our summary statistics suggest that the individual characteristics remain relatively stable

between periods, except for who have one child or more for Egypt and Jordan, which is smaller in Egypt and more prominent in Jordan in wave 6 compared to wave 5. The summary statistics also indicate that the financial situation on average did not change in Egypt between 2008 and 2012, increased in Jordan and Morocco, and slightly increased in Turkey. For the attitudinal variables, some variables means changed considerably in all countries. In Egypt, individuals became in average more in right ideologically, a little less religious, more risk-averse, more believing that they have control on their life, and much more interested in Politics. In Jordan, individuals became on average less risk-averse, less trustful in society. In Turkey, the Individuals became in average more in right politically, slightly more averse to risk, more trustful in society, more interested in politics. In Morocco, individuals became on average more trustful in society, less believing that they have control on their life, a little more interested in Politics. We can draw for this changes, that Egypt experienced more changes than the other countries, and especially at the level of the degree of interest in politics compared to the other countries as we can in figures 2 and 4. The number of individuals interested in politics has increased enormously in 2012. The different trajectories concerning the evolution of these variables in the time, show the need to take control for these variables in the coming sections.

Table 2: Percentages of individuals who are favorable (or very favorable) to redistribution before and after January 2011 in the four countries

	% Individuals favorable to redistribution	
	2007-2008	2011-2012
Egypt	22%	59%
Jordan	25%	12%
Morocco	36%	40%
Turkey	49%	55%

We focus now on our explained variable, the one indicating namely the individual preference for redistribution. We rely on this following question in the survey: " I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left (Incomes should be made more equal) ; 10 means you agree completely with the statement on the right (We need larger income differences as incentives for individual effort); and if your views fall somewhere in between, you can choose any number in between". Responses were coded on a scale of 1 through 5, with 5 representing being very favorable to the statement "Incomes should be made more equal" (i.e. More favorable to redistribution). This variable was used many times to measure support for redistribution (Murthi and Tiongson, 2008; Shayo, 2009; Klor and Shayo, 2010). As we can see in Figure 1,

the distribution of the individuals over the choices concerning the demand for redistribution, changed drastically after the revolution: based on these data, 21.65% of the Egyptian population was in favor of the redistribution in 2008 (responded 4 or 5 to the question), this percentage rose to 59.31% in 2012. If we look at figure 3 to the evolution of this percentage in Morocco and Turkey, we found that there was a slight increase, especially if we look to the means of this variable in these two countries. In Jordan, the mean of the demand for redistribution decreased very slightly in 2014, even if the number of individuals declaring support for redistribution decreased strongly (from 25% to 12%). We draw from all of this, the importance of studying more deeply this phenomenon by an econometric approach.

4 Empirical strategy

Since no study has been done on Arab countries generally and on Egypt specifically in the field of demand for redistribution, the first stage of our empirical strategy is to study the effects of the traditional factors we explored in the Section 3 that might have an effect on the preferences for redistribution in Egypt according to the studies already done on the subject. We compare the results we obtained with those concerning the other Arab countries when it is necessary. It is insightful to do so to validate what is consistent and at the same time pointing out the results which seem to be in contradiction with the current literature.

We assume that the demand for redistribution if individual i living at time t can be characterized by a latent variable y^*_{it}. Since we have a discrete ordinal dependent variable, we are using ordered logit model (we are assuming a logistic redistribution for the error term). Standard errors are corrected for heteroskedasticity. In Section 1, we use the function 1 to estimate the parameters :

$$y^*_{it} = \eta.I_{it} + \beta.S_{it} + \gamma.A_{it} + \zeta.R + \varepsilon_{it} \tag{1}$$

y^*_{it} is the "latent variable" presenting the preference for redistribution for an individual i living in a year t; I_{it} is a vector of the financial situation; S_{it} is a vector of the individual characteristics; A_{it} is a vector of the personal social attitudes; W is a wave dummy; and ε_{it} is an error term. η, β, γ and ζ are parameters.

We do not observe y^*_{it} but a variable y_{it} taking values 1 to 5 increasing in individual demand for redistribution. We have

$$y_{it} = m \text{ if } \alpha_{m-1} < y^*_{it} < \alpha_m \text{ for } m = 1, ..., 5$$

Where α_1 , α_2 , α_3, α_4 are the unknown cut points.

We begin by assessing the sign and significance of the coefficients vectors related to the determinants of preferences. Section 5.1 describes the results of this procedure.

The second phase of the analysis consists of studying the effect of the revolution. Given that the Egyptian revolution is the major event that occurred between 2008 and 2012, it can be hypothesized that, at least predominately, this is what the dummy year is capturing. In first we use the function 1 to evaluate the sign and the significance of ζ the coefficient capturing the effect of time, which is here the effect of the revolution. In second, we move to study the effect of the revolution in Egypt but this time we include a control group, which is not affected by the revolution, and therefore make a difference in difference. In order to do this, we use the last two waves data for the four countries: Egypt, Turkey, Jordan and Morocco. To estimate the effect of the revolution on the Egyptian people in this case we use the function 2 where the demand for redistribution of individual i living in the country c at period t can be characterized by a "latent variable" :

$$y^*_{ict} = \beta_1.I_{ict} + \beta_2.S_{ict} + \beta_3.A_{ict} + \beta_4.R + \beta_5.E + \beta_6.W.E + \varepsilon_{ict} \tag{2}$$

E is a country dummy equal to 1 if the individual lives in Egypt and 0 if he is living elsewhere; $W.E$ represents the interaction between W and E. β_6 is the difference-in-difference estimator. We conduct robustness checks using two waves before the revolution instead of 1.

Finally, we are interested in estimating the differential effect of the revolution on the different socio-economic and attitudinal groups in Egypt by adding the interactions between these groups and the period dummy W. We use the function 3 :

$$y^*_{it} = \gamma_1.I_{it} + \gamma_2.S_{it} + \gamma_3.A_{it} + \gamma_4.W + \gamma_5 W.I_{it} + \gamma_6 W.S_{it} + \gamma_7 W.A_{it} + \varepsilon_{it} \tag{3}$$

Where γ_5, γ_6 and γ_7 are parameters for interaction groups.

5 Results

5.1 Determinants of preferences for redistribution in Egypt

Literature review

Before we present our results on the micro-level determinants of preferences for redistribution in Egypt, we find that it is important to make a brief literature review covering the most interesting determinants. Like we stressed above, the overwhelming majority of studies in this field were carried out for the occidental countries, therefore the transatlantic perspective is the prevailing one.

In this literature, the individual's redistribution preferences are the most affected by the self-interest factors. A large body of empirical evidence shows that the actual financial situation is one of the most important determinants. The richer a person is, the more he is supposed to be favorable to redistribution (Corneo and Grüner, 2002; Guillaud, 2013). We add to that the individual's views about the personal expected position, where a prospect of upward mobility has a negative effect on the demand for redistribution (Benabou and Ok, 2001; Alesina and La Ferrara, 2005). In relation to personal perception of mobility, there is also the perception of the role of the effort and chance on determining success in life. In literature, the more the respondent believes the effort is important on the success, the more he is against the redistribution compared to the respondent who believes luck is more important. Two explanations can be provided, the first one is related to the personal expected income, more we think effort determines success, higher are our expectations. The second explanation is a "justice" explanation : if the effort is what determines our success in life, there is no need anymore for the incomes to be equal : if the individual is in a bad situation, then that is the result of what he sowed (Piketty, 1995; Fong, 2001; Ravallion and Lokshin, 2000).

After economic factors come the ideological, social and psychological attitudes. The literature showed that many of these attitudes are correlated with the personal demand for redistribution. At the ideological level, we count the political and religious convictions. Busemeyer (2013) and Pittau et al. (2016) showed that being politically leftist enhance the demand for redistribution compared to those declaring themselves on the right. For the religion attitude (Luttmer and Singhal, 2011), Neustadt (2011) found that being religious reduce the support for redistribution compared to an individual who are not religious. The social attitudes are also important, Fong (2001) and Fatica (2011) explain how trusting others push individuals to be more favorable to redistribution compared to those don't trust people around. Another important social attitude is the perception of altruism, as explored by Alesina and La Ferrara

(2005), being altruistic has a positive effect on the demand for redistribution. Finally in the family of psychological attitudes, scholars studied the effect of risk aversion, Beck (1994) run an experimental study and found how risk aversion can make the individual more favorable to the redistribution based on an "insurance motive". Rehm (2009) explains by an empirical study how a risky job (where the percentage of unemployment is high) has a positive effect on the demand for redistribution, Alesina and La Ferrara (2005) use proxies for the risk aversion like being self-employed [5], that yields a negative effect.

To all of this is added some individual characteristics like the age, the gender, the race and the education level. Although these characteristics are usually used are control variables, their effects were studied by many scholars. The older the individual is, the less he is likely to support redistribution (Alesina and La Ferrara, 2005; Alesina and Giuliano, 2009; Busemeyer, 2013). Alesina and Giuliano (2009) found an inverted U curve effect, the demand for redistribution decline in advanced stages of the life-cycles. Women are more inclined to have positive redistribution attitude compared to men (Alesina and Giuliano, 2009). A high level of education decrease the demand for redistribution compared to others (Fong, 2001).

Determinants of preferences of redistribution in Egypt : Results

After having acknowledged the determinants for demand for redistribution in occidental countries, we turn to present our results on the effects of some of these factors on the individual preference for redistribution in Egypt. Given the very different economic and cultural structure between the occidental and the Middle-east-North Africa Worlds, we except some divergence some divergence in the effects of the studied factors. The appropriate regressions are spread over three tables (6,7 and 8), they are showing that even if a considerable number of these factors have the same effects as the literature, some factors diverge.

In the column 6 of table 6, we present results from the ordered logit regression of preference for redistribution on the individual characteristics and the financial situation. The coefficients on these variables are consistent with what can be found in the literature. Woman, illiterate or having a very low education level and those they are over 59 years old, are all significantly more supportive of redistribution than their counter- parts. Those who are satisfied or very satisfied with their financial situation are less supportive to the redistribution than those who are not satisfied[6]. Finally having a child or more, yields no significant effect once controlled by

[5] Alesina and La Ferrara (2005) consider that being self-employed means a a lower risk attitude compared to an employee.

[6] We chose the felt financial situation and not the income decile because we have less missing values for the

the financial situation.

In the column 1 of table, we test the effect of the subjective health situation, we found as we expected that those in a bad health demand more redistribution compared to those in a good health. This variable also reflects a part of the personal risk exposure: A lousy health exposes the individual's future to more risk compared to healthy ones. In the line with the factors having consistent effects with the occidental countries, being leftist enhance the probability to hold positive positions towards redistribution compared to someone rightist, and trust others (so having potentially adopting a reciprocal attitude) also have the same positive effect as we can see in columns 2 et 3 respectively of table 7. Trusting others will push the individual to think that others will not take something is not their right legally and therefore being more favorable to redistribution compared to those having the opposite attitude (Fong, 2001; Fatica, 2011). In column 4 in table 13, we add an important factor considered as one of the most influential determinants of the preferences for redistribution: the belief about the role of effort and chance in determining the success in life. In our study we take as a proxy for this attitude, the following question: "How much freedom of choice and control you feel you have over the way your life turns out". In fact, if individuals consider that they have control on their life, they will be more able to accept their financial situation as a result of their effort, and then being less favorable to redistribution. In the column 4 of table 4, we find the expected result: the effect is negative, significant and progressive. We found the same result in a considerable number of the Arab countries as we can see in the last row of the table 16.

The effects of three factors differ in Egypt from the prevalent literature : the religious involvement, the altruistic attitude, the religious involvement, and the risk attitude. In column 4 of the table 7 we include the variable presenting the individual religious involvement (being an active participant in religious activities). In the literature, religious people compared to others are less favorable to the redistribution, one of the explanations are that religious people profit more from the services provided by religious helping networks (Luttmer and Singhal, 2011; Neustadt, 2011). In our study, attending religious activities has the opposite effect, the coefficient is positive. One of the explanations remains in the fact that Egyptian society consists of a very large majority of Muslims thus we do not have this community effect that we can find in the developed countries. In the other hand, the Egyptian society is a very religious one, therefore another component of being religious appears, which is the religious education focusing on the importance of asceticism and altruism. In this case, we can understand why the religious persons tend to be more favorable to redistribution. One has to underline we find

first one. And also because that the felt financial situation includes other economic circumstances that we can hardly test.

the same positive effect in many other Arab countries like Algeria, Iraq (significant), Bahrain, Morocco, Lebanon (significant) (table 16).

To test the effect of altruism, we use a proxy indicates if the individual finds that the unselfishness is an important quality for a child, and another proxy indicates if the person thinks that is it important to help people. In the literature, being altruistic has a positive effect Alesina and La Ferrara (2005). We find in column 1 and 2 of table 8 that for the two proxies, being altruistic has a negative effect and it is very significant. The reason these variable yields the opposite effect, maybe yields in the fact that in a society like the Egyptian one, having an altruistic attitude reflects that this person is living in an altruistic environment where individuals are less dependent on state help. Indeed, an altruistic behavior in some societies (especially in a rural society like Egypt[7]) may reveal a closer social life, where in the case of a financial problem, the individual will in first place ask his entourage for help. Karshenas et al. (2014) explained how in the Arab countries residual forms of social transfers based on the ethnic and religious groups cover the needs not covered by the social state. In other countries like OECD countries or the United-States (countries where most studies have been done), we are talking about different types of society where the requested help is –very often– addressed to the State. If we look to the effect of these variables in other Arab countries (table 16), we find that the first proxy coefficient is negative and significant in Iraq, Lebanon and Tunisia like in Egypt. We found a positive significant coefficient only in Yemen and Jordan. For the second proxy only in Tunisia, we found a positive significant effect of being altruism. Which indicates that the explanation of this result lies in something specific to the Arab social structure and there is divergence even between these countries.

For the risk attitude factor, we use individual answers to a question that would elicit the aversion risk: "Is it important to this person adventure and taking risks? 1: Very much like me; 6: Not at all like me. We re-coded it in an increasing way that 1 represents the risk-averse individuals, and the 3 the risk-seeking individuals. We see in column 5 in table 7 that the coefficients are negative which is why it is expected, but the coefficients are insignificant. We tried to study the effect of the risk attitude by taking the institution occupation (if the individual is self-employment or working in public sector or public sector) but only for the wave 6 since we do not have this data for the two waves: the effect still insignificant. We explain this insignificant effect by the fact that the labor market structure is very different in Egypt compared to the developed countries, being in a public institution may do not offer the same insurance that offers the same position in the developed countries. [8] If we look at the table 16

[7] 56% of the population are living in rural areas.

[8] Since a big part of the Egyptian people still lives in rural areas, most of the jobs are considered as self-

only in Turkey and Iran we have a significant negative coefficient for the aversion risk question.

5.2 The effect of the revolution

Like we stated in the third Section, the distribution of the respondents over the demand for redistribution has changed drastically. To estimate and quantify the effect of this revolution correctly, we control this effect in first for the classical determinants of demand for redistribution within the Egyptian people, and in second for the effect of time that concerns the Arab world generally. We are interested also to see if we have differential revolution effect by groups we choose.

An another way to say it : An increase in the number of individuals favorable to redistribution, may be due to several things :

1. The distribution of the answers concerning the determinants factors of the preference for redistribution changed: the solution it is to control the time effect by the factors we have.
2. May be this change it is not specific to Egypt, other countries also have experienced this effect: One of the solutions is to do a difference in difference analysis by using another similar countries as a control group to have the specific time effect of Egypt.
3. It could simply follow an old Egyptian trend: for that we can compare the marginal effects of the time variable for 2008-2012 period to the marginal effects of 2001-2008 period.

To estimate the effect of revolution, we estimate the effect of time, the effect of living after January 2011 (2012 for Egypt) compared to living before January 2011 (2008 for Egypt). The variable "After revolution" represents a dummy equals to 1 if the respondent was questioned in the wave 6 and equals to 0 if the respondent was questioned in the wave 5.

Table 6, 7 and 8 represent the results we obtain by estimating the effect of the Egyptian revolution on demand for redistribution in Egypt adding variables one by one. The baseline estimate (Column [1]), without any controls, shows that on average, living in 2012 is associated with a 0.296 increase in the probability of being identified as very favorable to redistribution and a 0.0183 decrease in the probability of being identified as very unfavorable compared with an individual living in 2008. This effect is still significant, very strong and having nearly the same marginal effects after the introduction of each of the variables. We can conclude that changes in individual characteristics, financial situation and the attitudinal variables, are not

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able to explain the shift in the preferences for redistribution after the revolution.

Robustness : Diff-in-Diff analysis

Is the effect of time peculiar to Egypt to say that it was the revolution that caused this change? Or can we find the same effect for all Arab countries? To answer this question, we rely on the data of Egypt, Jordan, Morocco and Turkey. These countries are quite close at the political and economic level, which provide us a good control group. In fact, we find that political institutions in Jordan and Morocco were sharing with Egypt important characteristics like the weak role of the political parties, the oligarchy regime, the long rule of governors, the freedom situation...In the economic level, all four countries are considered as middle-income economies. We add the fact that for the period between 2001 and 2008 there was an increasing trend for the preferences for redistribution in these four countries , and that we even have a nearly perfect parallel trend if we compare the Moroccan trend to the Egyptian trend for this period.

In first we run the regression following the function 1 for each of these four countries (table 9), and we calculate the marginal effects (table 10). We found that the effect of time in the other countries is positive and very significant. However, once we look at the marginal effects, we notice the immense difference between the values of Egypt and those of other countries. For example, the probability of being very favorable to redistribution in Egypt in 2008 compared to 2012 is 26.8% higher, only 4.5% higher in Jordan, 4.3% in Morocco and 5.5% in Turkey. This means that to obtain the proper effect of the Egyptian revolution, it will be necessary to isolate the effect of time which affects all countries in consideration. These positive effects of coefficients of time variable indicate that there is a tendency towards more redistribution in the Arab Zone. One of the explanations is that the Arab Spring has touched the majority of the countries slightly even if there was no revolution. The second explanation is that between 2008 and 2012, there was more openness to the international due to the development of the level of education and access to the Internet, and then better information on the situation of inequality.

To obtain the proper effect of the revolution, we calculate the diff-in-diff estimator representing the proper effect of time concerning Egypt based on the function 2. The diff-in-diff estimator is obtained by the interaction between the dummy variable equal to 1 if individual lives in Egypt and 0 otherwise and the number of the wave as we can see in the first 3 columns in table 11 . We are looking for the diff-in-diff estimators by taking each time Egypt with one of the countries alone. Even if is the magnitude of the coefficient became smaller, as we can see in the table, the diff-in-diff estimator is very significant.The marginal effects remain large

in any case. In the column 4, we see the coefficient of the diff-in-diff estimator, taking as a control group this time the three countries together. The coefficient is very significant and big. We conclude that even if there is a part of the effect of time is unspecific to Egypt, the effect of the revolution remains very strong.

The second placebo test consists of comparing the effect of time between waves 5 and 6 to the one we obtain between waves 4 and 5. Between 2001 and 2008, there was no revolution, the expected result for the effect of time is to have a marginal effect small enough to be compared to that of the period of the revolution. We run the same regression we did (function 1) for the wave 4 and 5. The coefficient is very significant: being in 2008 has a positive effect on the support for redistribution compared to being in 2001 (Table 12). However, we calculated the marginal effects (Table 13), and we found that probabilities of being very favorable or favorable for more redistribution are very different between those of 2008-2012 and those of 2000-2008. It is 11.6% between 2001 and 2008, and 30.3% between 2008 and 2012. While taking into consideration that the period is longer between 2001 and 2008 compared to 2008 and 2012. The probabilities of being very unfavorable or unfavorable for more redistribution (or more precisely favorable to the idea we need larger income differences as incentives for individual effort) are also different to those of 2008-2012. There is 18% less chance that an individual takes this position in 2008 compared to 2000, while this percentage is 35,5% in 2012 compared to 2008.

Heterogeneous treatment effects

In this extension we want to shed light on which groups have the most forceful response to the revolution. We test this differential effect on each one of the variables we tested. We found that the heterogeneous effect exists only over the financial situation groups, over the health situation groups, and over the degree of interest in politics groups. We start by presenting the effect of time proper to Egypt (effect of revolution) on the support for redistribution over the financial situation groups. In table 14 we estimate the equation (3), where we interact the financial situation index with wave dummy. The analysis indicates, relative to the lowest financial situation group, that the effect of the revolution becomes smaller and smaller each time the financial situation is better.

To obtain the marginal effects concerning every financial situation group, we re-estimate the equation (1) separately for each group. Like we find in table 15, the heterogeneity of the effect goes in the direction of having a weaker positive effect for the higher financial situation group compared to the middle and the lower financial situations groups. The probability to

be very favorable increases after the revolution by 0.349 (marginal effects) for the low financial situation, by 0.301 for the average financial situation, and by 0.237 for the high financial situation. In turn, suggesting that the revolution increased the gap in demand for redistribution across wealth groups. One potential explanation for these heterogeneous effects could be that the revolution, was more concerning the low and medium category than the high category, like the spreading of ideas about social inequality. We can draw from this results that the positive effect of revolution goes through channels that concern more the less well-positioned compared to others. In the last section we discuss what kind of factors could generate these heterogeneous effects.

In column 2 in table 14 , we include the interaction between the number of the wave and the health situation. We conclude that the effect of the revolution differs significantly between individuals having good health and those having bad health: the positive effect of the revolution on demand for redistribution affected much more the people in poor health than the people in good health. Insofar as the state of health is one of the components of well-being as the financial situation, this result joined the previous one.

In table 14, we include in column 3 the interaction between the number of wage (date of survey) and the categorical variable indicating the degree of interest in politics the individual gives. We found that the individuals who are very interested in politics were impacted positively by the revolution on those preferences for redistribution much more than individuals not interested at all in politics. This result shows that a part of the positive revolution effect of the revolution lies in the considerable change in the new political landscape after the revolution that we explained in Section 2. We add in column 4 in the same table the interaction between the number of wave and effect and the individual age group. The youngest category seems to be the less group infected by the positive effect of the revolution on demand for redistribution, even if these coefficients are weakly significant.

After all these regressions, we can conclude that the 25 January revolution had an enormous effect on the demand for redistribution in Egypt. The fact that the most unfortunate individuals were more affected than the richest prove that the new political offer was relying effectively on what touches more this group, namely for example inequality and social justice. The fact that the most interested individuals in politics were the most affected by this positive effect prove that the improvement of the freedom situation was an essential part of this positive effect: the most interested in politics benefited the most from this situation. These results concerning the interactions and what changed as a result of the revolution will help us to provide more explanations on the discussion section.

6 Discussion

We showed in Section 5 how we managed to isolate the effect of the changes of the political institutions and of the informational freedom accompanied the revolution, and then emphasized the substantial positive impact of these latter on the preferences for redistribution. The question that comes naturally is why the revolution had this strong effect on people's preferences concerning redistribution? How can a change in the political sphere along with an improvement of the freedom lead to enhance the support for redistribution? By what channels (mediators) could this effect pass? Unfortunately, the limited set of information in our database limits our ability doing advanced tests to explain this effect, but in the other side, many elements in the literature allows us to set some assumptions.

Since the revolution is considered as a "shock" (we mean by a shock a major event that happens all of a sudden), we look first at the literature dealing with the effects of shocks. In this literature the shocks that were explored in the context of the demand for redistribution are in the vast majority economic shocks, especially the recent economic crises that have hit the European countries and the United states (Margalit, 2013; Olivera, 2014; Kroeger, 2014).[9] In our case, this shock does not seem to have economic consequences: Section 3 has established that the basic economic indicators up to the eve of the revolution were not deteriorating, and that after revolution based on data that we study, the composition of individuals concerning the economic situation was the same. It is also shown in the context section that no important changes happened at the economic level and in the regressions that the perception of the economic situation did not explain this change. Once the possibility that the revolution is an economic shock has been ruled out, it remains to be known what kind of shock is more like the revolution. Based on all what we have discussed in Section 3 about the Egyptian revolution we established that it is – essentially – political shock along with important changes on the information freedom situation.

As explained in Section 2, in first individual freedoms have undergone a major change mainly regarding freedom of information through the evolution of the role of the Internet and the high flow of news that has been exposed to the Egyptians. The other change was at the level of political life, Egyptians experienced the emergence of a new political class from elections deemed free and with a very high participation rate. Schläpfer et al. (2008) showed how

[9]We can find Dahlberg et al. (2012) who studied the effect of the large immigration on the support for redistribution considered then as a "social" shock.

the preferences of citizens could be influenced by political institutions and especially by party programs, Ford (2016) explains in turn how moral narratives adopted by political and media elites can manipulate the individual perceptions about welfare. We then have people after the revolution very interested in politics, which are facing a new political discourse inspired by the revolution whose term of social justice was one of the central themes, and which has new sources of information.

In fact, Individual perceptions of the personal or general economic situation may be subject to many misconceptions. Hauser and Norton (2017) and Kuziemko et al. (2015) showed that it exists a substantial difference between the actual levels of inequality and the person's (mis)perception of those levels. The individual's perceptions of their equality of opportunity or the future income can also be different from the objective measures (Alesina and La Ferrara (2005)). Fulfilling this gaps may lead to a correction of the demand for redistribution attitude: Cruces et al. (2013) and Karadja et al. (2017) provide evidence on the significant biases in individuals' evaluations of their relative position in the income distribution and showed how individuals modify their preferences as soon as they have the right information. Kuziemko et al. (2015) found a significant but weak effect on the individuals' preferences when they learn the actual level of inequality. Cruces et al. (2013) found that this perception is a statistical inference problem, a reference group bias. Diermeier et al. (2017) showed that one of the misperceptions of the level of inequality sources was the media coverage on the perceptions of the level of inequality not only between Egyptians themselves but compared to the rest of the world.[10] In Egypt, it can be supposed that the shock of along with the evolution of the political institutions allowed people to have more correct information about their income position and the level of inequality. A change of the reference group or a different media coverage can be the source of these perceptions changes.[11] The unique prove in our study is - as we showed in the heterogeneous effect section - that the people most interested in politics were more concerned about the positive effect of the revolution on people's preferences, which means the new political environment is a part of the explanation.

This political shock can affect individuals' preferences for redistribution by another channels than those cited in the literature. One element that is thought to be interesting and which is induced by the new political discourse is the development of the political culture on the question

[10] A big shift in the "reference point" as has been explained by Charité et al. (2015).

[11] One of the most hyped subjects covered by the classic media and by the social networks in this period was the scandal of Mubarak regime embezzlement, where a large part of citizens were asking for giving back these fortunes. This kind of information could probably be considered as one of the triggers for this "awakening" of conscience.

of the distributive role of the state. In developed countries where most of the literature on the demand for redistribution has been made, it is implicitly assumed that individuals are aware of all the options available to them, including the option of reducing inequalities through a redistribution of the state from the rich to the poor. Difficult access to information, a repressive political system for decades and a very unequal distribution of the political power, as was the case for Egypt and for many other countries in the Middle East, may have the consequence of plunging the country into a position of ignorance even of the most fundamental rights. This situation can impose incomplete preferences, or a bounded rationality, in the sense that the set of choices is more limited compared to a more democratic society.[12] The revolution then allowed people to open their eyes to new possibilities such as improving the economic situation through less inequality.

One element in our data supporting this point of view is the evolution of the correlation between 2 important variables, the preference for redistribution variable and the support for governing intervention. This last variable is presenting by the following question: *Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. "Government should take more responsibility to ensure that everyone is provided for" vs. "People should take more responsibility to provide for themselves"*. In many studies about the demand for redistribution on the developed countries, scholars take this variable as presenting the preference for redistribution, while showing that there is a very high correlation between this question and our dependant variable. In Egypt, after the revolution effectively, a strong correlation exists between these 2 questions, but it was not the case before the revolution : for the 2001 and 2008 waves the correlation was very weak. The government support for intervention was nearly the same before and after revolution, which is not the case for the support for reducing the income differences. Our explanation to this phenomena is that Egyptians before revolution were not thinking about the redistribution option when they were asking the intervention of state , it is only after the revolution that they were aware that redistribution is in the core of the state intervention.

One last issue in this topic need to be clarified : our analysis throughout this paper is based on the idea that the evolution of preferences for redistribution occurred after the revolution and not before, although some may think that there is a problem of endogeneity and that the evolution of preferences for redistribution was rather the cause of the revolution and not the consequence. The ideal would be to find an instrumental variable but unfortunately with

[12] Hong et al. (2015) showed how unfounded beliefs or the erroneous processing of information could generate the "irrationality" of individual social welfare preferences

the complexity of phenomenon that we study and the limited capacity of data find a good instrumental variable was not possible. However, there are several elements that lead us to believe that this evolution was a consequence and not a cause. The first element is the causes of the revolution, as we have shown in section 2, the direct causes of the revolution were weakly linked to economic reasons, and even when we spoke of poverty and inequalities opportunities as indirect causes or as underlying factors, the redistribution system was never really questioned.

The second element of answer concerns the homogeneous evolution of preferences for redistribution among several groups. It was shown that the majority of the participants in the events in Egypt that led to the success of the revolution were men (77%), middle-class, and with high levels of education (46%) El-Mallakh et al. (2018). Saying that the evolution of the demand for redistribution occurred before the revolution and that it was one of the motivations behind the revolution, involve that evolution of preferences between 2008 and 2012 among individuals bearing these characteristics is more important compared to their counterparts. Except this is not the case: as we have shown in our study of the differential effect of time in section 5, there is no significant difference between the evolution of men's preferences compared with those of women, also between the highly educated compared to those less educated, and individuals with average financial status were not the most impacted.

The third argument is based on what is done in the diff in diff inter-country analysis. Indeed, Egypt was the only country among the four where the revolution had succeeded but not the only one where demonstrations took place following the revolution in Tunisia : in Jordan and Morocco during several months demonstrations were held in nearly the same period. In Morocco, for example, protests began in February 2011 in several cities. If we look at the beginning of the Moroccan case we find several things in common, from the he triggers of these uprisings to the announced requests and posters raised by Moroccans, and yet no evolution of preferences as we see in Egypt accompanied this movement. This inspection pushes us more to think of the absence of the link between the preferences for redistribution and the manifestations.

7 Conclusion

This document addresses two important issues: the determinants of the support for redistribution in Egypt, and the effect of the Egyptian revolution occurred in 2011 on this support. In the first part of the results Section, although many of the factors have the expected effects on demand for redistribution, including the financial situation, some factors stand out. Being richer, more educated, young, in a bad health, in left decrease the individual demand for redis-

tribution. Attend religious activities enhance the individual support for redistribution contrary to the classical finding in the literature. An another surprisingly result is the negative effect of having an altruistic attitude. Our explanations for these results put the accent on the specific cultural and social structure of the Egyptian society specially and the Arab one more generally. The strong presence of religion and the sustenance of alternative forms of social transfers seem to weigh on the formation of individual attitudes. All these results along with what was found for the other Arab countries, when compared to the transatlantic perspective showed that there are more than two worlds in terms of attitude towards redistribution.

The second part of the results deals with the effect of time between 2008 and 2012. Since the only major event happened between these years was the Egyptian revolution, we suppose that the effect of time controlled by the appropriate factors is the effect of the revolution. The Egyptian revolution is not only the event itself but all the consequences that followed. This study provides compelling evidence of the substantial positive impact of the revolution on individuals' preferences for redistribution. It has been shown that none of the factors we dispose considered as determinants of redistribution preference can explain this time effect. A diff-in-diff analysis also showed that this effect persists even if we control it with the effect of time proper to the countries we take into account (Jordan, Morocco and Turkey). We also showed that even if a positive trend existed between 2000 and 2008, the marginal effects are much smaller than the ones we obtained for the revolution period. This positive effect was mostly homogeneous between the different individuals, except for those who differ in their financial situation and their degree of interest in politics : Individuals who feel financially challenged, and who are very interested in politics have seen their support for redistribution increase more sharply compared respectively to those in a more comfortable financial situation and the individuals who are not interested at all in politics.

The limits of this study are numerous. The first one is the difficulty of analyzing a rather complex and multidimensional phenomenon that a revolution. We do not pretend to be able to explain everything, we are just interested in a part that we consider to be important in the process. The second is the control group with which Egypt is compared. Although there are significant similarities between the countries chosen at the political and economic levels, some countries did not have the same trend Egypt had, and several non-measurable differences can be hidden playing a role in the evolution of preferences. The third limitation concerns the limited number of variables available to explain the preference of the individual. Further information on the individuals such as their entourage for example, or their attitudes as well as their perceptions of social inequalities and mobility will have been very useful. The fourth limitation is the lack of documentation that can help us build the foundation of our assumptions

presented about the mechanisms generating the redistribution attitude evolution as a result of the political and informational change.

Our work opens a big door for studying the preferences for redistribution intensely for the Arab countries: shedding light on the specificities of this environment, especially on all what can be related to the social transfer and religion. In this paper, we limited our analysis on the essential of this topic, but much more can be done. Our study also draws the attention to the importance of the level of freedom and the political context on the formation of individuals support for redistribution. This theme is gaining in importance since the deteriorating of the state of democracy in the world as mentioned in the report named "Democracy in crisis" by Freedom House (2018). The factor of freedom (specially political freedom) is until now very little exploited concerning its effect on the individual's preferences for the redistribution.

References

Abdou, P., Salman, D., and Zaazou, Z. (2013). The egyptian revolution and post socio-economic impact.

Acemoglu, D., Naidu, S., Restrepo, P., and Robinson, J. A. (2015). Democracy, redistribution, and inequality. In *Handbook of income distribution*, volume 2, pages 1885–1966. Elsevier.

Acemoglu, D. and Robinson, J. A. (2000). Democratization or repression? *European Economic Review*, 44(4-6):683–693.

Acemoglu, D. and Robinson, J. A. (2013). *Why nations fail: The origins of power, prosperity, and poverty*. Broadway Business.

Alesina, A. and La Ferrara, E. (2005). Preferences for redistribution in the land of opportunities. *Journal of public Economics*, 89(5):897–931.

Alesina, A. F. and Giuliano, P. (2009). Preferences for redistribution. Technical report, National Bureau of Economic Research.

Alvaredo, F., Chancel, L., Piketty, T., Saez, E., and Zucman, G. (2018). *World inequality report 2018*. Belknap Press of Harvard University Press.

Amnesty international (2011). Egypt : Abuses under state of emergency. http://archive.is/91ixu#selection-391.0-391.38. [Online; accessed 23-July-2018].

Beck, J. H. (1994). An experimental test of preferences for the distribution of income and individual risk aversion. *Eastern Economic Journal*, 20(2):131–145.

Benabou, R. and Ok, E. A. (2001). Mobility as progressivity: ranking income processes according to equality of opportunity. Technical report, National Bureau of Economic Research.

Bishara, A. (2009). *Being arab in nowdays*.

Bishara, A. (2012). *Fî-l-thawra wa-l-qâbiliyya li-l-thawra De la révolution et des conditions de la révolution*.

Brownlee, J., Masoud, T. E., and Reynolds, A. (2015). *The Arab Spring: Pathways of Repression and Reform*. Oxford University Press.

Brunner, E., Ross, S. L., and Washington, E. (2011). Economics and policy preferences: causal evidence of the impact of economic conditions on support for redistribution and other ballot proposals. *Review of Economics and Statistics*, 93(3):888–906.

Busemeyer, M. R. (2013). Education funding and individual preferences for redistribution. *European Sociological Review*, 29(6):1122–1133.

Charité, J., Fisman, R., and Kuziemko, I. (2015). Reference points and redistributive preferences: Experimental evidence. Technical report, National Bureau of Economic Research.

Corneo, G. and Grüner, H. P. (2002). Individual preferences for political redistribution. *Journal of public Economics*, 83(1):83–107.

Costello, M., Jenkins, J. C., and Aly, H. (2015). Bread, justice, or opportunity? the determinants of the arab awakening protests. *World Development*, 67:90–100.

Cruces, G., Perez-Truglia, R., and Tetaz, M. (2013). Biased perceptions of income distribution and preferences for redistribution: Evidence from a survey experiment. *Journal of Public Economics*, 98:100–112.

Dabashi, H. (2012). *The Arab Spring: the end of postcolonialism*. Zed Books Ltd.

Dahlberg, M., Edmark, K., and Lundqvist, H. (2012). Ethnic diversity and preferences for redistribution. *Journal of Political Economy*, 120(1):41–76.

Devarajan, S. and Ianchovichina, E. (2018). A broken social contract, not high inequality, led to the arab spring. *Review of Income and Wealth*, 64:S5–S25.

Diermeier, M., Goecke, H., Niehues, J., and Thomas, T. (2017). *Impact of inequality-related media coverage on the concerns of the citzens*. Number 258. DICE Discussion Paper.

El-Mallakh, N., Maurel, M., and Speciale, B. (2018). Arab spring protests and women's labor market outcomes: Evidence from the egyptian revolution. *Journal of Comparative Economics*, 46(2):656–682.

El-Mikawy, N. (1999). *The building of consensus in Egypt's transition process*. American Univ in Cairo Press.

Elbadawi, I. and Makdisi, S. (2010). *Democracy in the Arab world: explaining the deficit*. Routledge.

Fatica, S. (2011). Preferences for redistribution, the size of government and the tax system.

Fong, C. (2001). Social preferences, self-interest, and the demand for redistribution. *Journal of Public economics*, 82(2):225–246.

Ford, R. (2016). Who should we help? an experimental test of discrimination in the british welfare state. *Political Studies*, 64(3):630–650.

Freedom house (2008). Freedom situation in egypt in 2008. https://freedomhouse.org/report/freedom-world/2008/egypt.

Freedom house (2009). Freedom situation in egypt in 2009. https://freedomhouse.org/report/freedom-world/2009/egypt.

Freedom house (2010). Freedom situation in egypt in 2010. https://freedomhouse.org/report/freedom-world/2010/egypt.

Freedom House (2018). Freedom in the world 2018. democracy in crisis. *Freedom House*.

Giesing, Y. and Musić, A. (2019). Household behaviour in times of political change: Evidence from egypt. *World Development*, 113:259–276.

Guillaud, E. (2013). Preferences for redistribution: an empirical analysis over 33 countries. *The Journal of Economic Inequality*, 11(1):57–78.

Hauser, O. P. and Norton, M. I. (2017). (mis) perceptions of inequality. *Current opinion in psychology*, 18:21–25.

Hong, H., Ding, J., and Yao, Y. (2015). Individual social welfare preferences: An experimental study. *Journal of Behavioral and Experimental Economics*, 57:89–97.

Howard, P. N., Duffy, A., Freelon, D., Hussain, M. M., Mari, W., and Maziad, M. (2011). Opening closed regimes: what was the role of social media during the arab spring?

Karadja, M., Mollerstrom, J., and Seim, D. (2017). Richer (and holier) than thou? the effect of relative income improvements on demand for redistribution. *Review of Economics and Statistics*.

Karshenas, M., Moghadam, V. M., and Alami, R. (2014). Social policy after the arab spring: States and social rights in the mena region. *World Development*, 64:726–739.

Klor, E. F. and Shayo, M. (2010). Social identity and preferences over redistribution. *Journal of Public Economics*, 94(3):269–278.

Kroeger, P. (2014). Demand for redistribution in the wake of the economic crisis. *Economics and Business Letters*, 3(3):156–165.

Kuziemko, I., Norton, M. I., Saez, E., and Stantcheva, S. (2015). How elastic are preferences for redistribution? evidence from randomized survey experiments. *The American Economic Review*, 105(4):1478–1508.

Kymlicka, W. (2004). *Dworkin on freedom and culture*. Wiley Online Library.

Lotan, G., Graeff, E., Ananny, M., Gaffney, D., Pearce, I., et al. (2011). The arab spring| the revolutions were tweeted: Information flows during the 2011 tunisian and egyptian revolutions. *International journal of communication*, 5:31.

Luttmer, E. F. and Singhal, M. (2011). Culture, context, and the taste for redistribution. *American Economic Journal: Economic Policy*, 3(1):157–179.

Margalit, Y. (2013). Explaining social policy preferences: Evidence from the great recession. *American Political Science Review*, 107(1):80–103.

Mourtada, R. and Salem, F. (2011). Civil movements: The impact of facebook and twitter. *Arab Social Media Report*, 1(2):1–30.

Murthi, M. and Tiongson, E. (2008). Attitudes to equality: the 'socialist legacy'revisited policy. *World Bank Research Working Paper*, 4529.

Neustadt, I. (2011). Do religious beliefs explain preferences for income redistribution? experimental evidence. *CESifo Economic Studies*, 57(4):623–652.

Olivera, J. (2014). Preferences for redistribution after the economic crisis. *Economics and Business Letters*, 3(3):137–145.

Othman, D. (2012). State of emergency ends, military council says will not renew. http://www.egyptindependent.com/military-council-says-no-extension-emergency-law/. [Online; accessed 23-July-2018].

Piketty, T. (1995). Social mobility and redistributive politics. *The Quarterly journal of economics*, 110(3):551–584.

Pittau, M. G., Farcomeni, A., and Zelli, R. (2016). Has the attitude of us citizens towards redistribution changed over time? *Economic Modelling*, 52:714–724.

Ravallion, M. and Lokshin, M. (2000). Who wants to redistribute?: The tunnel effect in 1990s russia. *Journal of public Economics*, 76(1):87–104.

Rehm, P. (2009). Risks and redistribution: An individual-level analysis. *Comparative political studies*, 42(7):855–881.

Schläpfer, F., Schmitt, M., and Roschewitz, A. (2008). Competitive politics, simplified heuristics, and preferences for public goods. *Ecological economics*, 65(3):574–589.

Shayo, M. (2009). A model of social identity with an application to political economy: Nation, class, and redistribution. *American Political Science Review*, 103(2):147–174.

Stepanova, E. (2011). The role of information communication technologies in the "arab spring". *Ponars Eurasia*, 15:1–6.

Telhami, S. (2013). *The world through Arab eyes: Arab public opinion and the reshaping of the Middle East*. Basic Books (AZ).

Teti, A., Abbott, P., and Cavatorta, F. (2017). *The Arab Uprisings in Egypt, Jordan and Tunisia: Social, Political and Economic Transformations*. Springer.

The World Bank (2018a). Gdp growth egypt between 2001 and 2016. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2016&locations=EG&start=2001. [Online; accessed 23-July-2018].

The World Bank (2018b). Gini index in egypt between 2004 and 2012. https://data.worldbank.org/indicator/SI.POV.GINI?end=2012&locations=EG&start=2004. [Online; accessed 10-December-2018].

United Nations (2018). Hdi in egypt between 2004 and 2012. http://hdr.undp.org/en/countries/profiles/EGY. [Online; accessed 10-December-2018].

Vasquez, I. and Porcnik, T. (2016). *The Human Freedom Index 2016: A Global Measurement of Personal, Civil, and Economic Freedom*. Cato Institute.

Wolfsfeld, G., Segev, E., and Sheafer, T. (2013). Social media and the arab spring: Politics comes first. *The International Journal of Press/Politics*, 18(2):115–137.

Appendix 1: Description of variables

The following is a list of the variables we use and their sources, followed by summary statistics. Unless otherwise stated, the source of a variable is author's calculation on WVS data.

- Pref for redis: Categorical variable varying on a 5 point scale from 1=against distribution to 5=in favor for redistribution. Original WVS survey question (*ppr1*) : " I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left (Incomes should be made more equal) ; 10 means you agree completely with the statement on the right (We need larger income differences as incentives for individual effort); and if your views fall somewhere in between, you can choose any number in between". Our variable is rescaled (11-*ppr1*), i.e it is increasing in individual support for redistribution, and then regrouped in 5 groups (*Ppr*).

- Age: Categorical variable presenting 4 categories of age equal to 1 if the age of the respondent is between 18 and 25, 2 if the age of the respondent is between 26 and 39, 3 if the age of the respondent is between 49 and 59, and 4 if the age of the respondent is above 59.

- Woman: dummy equal to 1 if the respondent is female.

- Education: Categorical variable presenting 4 categories of educational level equal to 1 if the respondent is illiterate, 2 if the respondent has a low level of education (less than secondary school), 3 if the respondent has a complete secondary school, 4 if the respondent had a university formation.

- Children: dummy equal to 1 if the respondent has children

- badhealth: dummy equal to 1 if the respondent is in a bad or very bad health situation and equal to 0 otherwise.

- Financial sit: Categorical variable presenting 5 categories of financial situation equal to 1 if the respondent is very dissatisfied with his financial situation, and equal to 5 if the respondent is very satisfied with his financial situation.

- After Revolution: dummy equal to 1 if the respondent is living in 2008 and to 0 if the respondent is living in 2012.

- Trust: dummy equal to 1 if the respondent thinks that most people can be trusted and equal to 0 if the respondent thinks that we can not be too careful. This is a proxy for the reciprocity attitude.

- Politic ideo: Categorical variable presenting 3 categories of the ideological position between left and right equal to 1 if the respondent is considering himself having a left ideological position, 2 if the respondent is considering himself in the middle (between these 2 positions), and 3 if the respondent is considering himself having a right ideological position. (The variable is coded in the database in the scale of 10: 1 for left and 10 for right).

- Religious: Categorical variable presenting 2 categories of how often the individual attend religious services, it is equal to 1 if the respondent attends religious services once a week or more, and 0 if otherwise.

- Risk attitude: Categorical variable presenting 3 categories of how important it is to take risks. It is a proxy for the risk attitude. It is taking the value of 1 if the respondent likes to take risks instead, the value of 3 if the respondent doesn't like to take risks instead, and the value of 2 if the respondent is in between these 2 positions.

- Imp of Help: Categorical variable presenting 3 categories on the subject of how it is important to help the people nearby. It is considering as a proxy for the altruism attitude. This variable is equal to 1 if the respondent is considering himself as an altruistic, 3 if it is not, and 2 if he is between these 2 positions.

- childaltruisme: dummy equal to 1 if the respondent think that the unselfishness is an important quality child. It can also be considered as a proxy for the altruism attitude.

- Interest in Poli: Categorical variable presenting 4 categories on the subject of how the respondent is interesting in politics, equal to 1 the respondent is not at all interested in politics, equal to 2 if the respondent is not very interested in politics, to 3 if the respondent is somewhat interested in politics, to 4 if the respondent is very interested in politics.

- Role of effort: Categorical variable presenting 3 categories on the subject of how much freedom of choice and control the respondent thinks he has in this life. It can be considered as a proxy for the fairness beliefs about the effort and chance at the personal level. This variable is equal to 1 if the respondent thinks that he has no liberty and choice in his life (so thinks that the effort does not has an effect), 3 he thinks that he has a control in his life (so thinks that he believes in effort more than luck), and 2 if he is between these 2 positions.

- Group of variables A: age, gender, education level, having children, financial situation, being in a bad health, political ideology, attend religious services, trust others, altruism attitude, being interested in politics, the perception of the role of effort in one's own life.

- Group of variables B: age, gender, education level, having children and financial situation.
- Group of variables C: Age, Woman, Children, Finan sit, badhealth, trust people, childaltruisme, Interest in Poli and Role of effort.

Appendix 2 : Informations concerning the Freedom, political and economic situations in Egypt

Table 3: Some components of freedom situation in Egypt between 2008 and 2012

Freedom in Egypt	*2008*	*2009*	*2011*	*2012*
1. Association, Assembly & Civil Society	**3.6**	**3.6**	**5.8**	**5.8**
i. Freedom of Association	2.5	2.5	5.0	5.0
ii. Freedom of Assembly and Demonstration	2.5	2.5	7.5	7.5
iii. Autonomy of Organisations	4.4	4.4	4.2	4.2
iv. Freedom to Establish Organisations	5.0	5.0	6.7	6.7
2. Expression & Information	**5.6**	**5.6**	**6.3**	**6.3**
i. Press kilings	10.0	10.0	7.5	8.8
ii. Laws and regulation that influence media content	3.0	3.0	3.3	2.7
iii. Political pressures and controls on media content	4.8	4.8	4.5	4.0
iv. Freedom of access to Foreign information	6.7	6.7	8.8	4.0
v. State control over internet access	3.3	3.3	7.5	7.5

Source : The Human Freedom Index (HFI) Egypt (2016 report).

Appendix 3: Summary statistics

Table 4: Percentages of individuals who are favorable (or very favorable) to redistribution before and after January 2011 for or some countries in the Middle East and North Africa

	% Individuals favorable to redistribution	
	2007-2008	2011-2014
Egypt	22%	59%
Turkey	49%	55%
Bahrain	-	51%
Morocco	36%	40%
Iraq	39%	38%
Lebanon	-	30%
Palestine	-	26%
Yemen	-	25%
Kuwait	-	23%
Tunisia	-	22%
Algeria	-	22%
Libya	-	22%
Qatar	-	18%
Jordan	25%	12%
Iran	58%	-

Source : *World Values Survey* . Empty cases means that the data are not available.
The World Values Survey question : I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left (Incomes should be made more equal) ; 10 means you agree completely with the statement on the right (We need larger income differences as incentives for individual effort); and if your views fall somewhere in between". The individual is *very favorable* to redistribution if the variables takes the value of 1 or 2, and *favorable* to redistribution if the variable takes the value of 3 or 4.

Table 5: Summary statistics (Means) : Jordan, Morocco and Turkey

	Means						
	Jordan		Morocco		Turkey		Max
	Wave 5	Wave 6	Wave 5	Wave 6	Wave 5	Wave 6	
Pref for redistribution	2.27	2.19	3.06	3.18	3.27	3.4	5
Individual characteristics							
Age	2.28	2.44	2.3	2.3	2.26	2.33	4
Woman	0.51	0.51	0.5	0.5	0.49	0.517	1
Education level	2.37	2.16	2.14	1.48	2.11	2.24	4
Having Children	0.68	0.76	0.69	0.59	0.66	0.64	1
Current Welfare							
Financial situation	3.44	2.93	2.77	3.07	3.25	3.38	5
Health situation							1
Attitudinal variables							
Ideological position	-	-	-	-	2.18	2.24	3
Attend Religious activities	-	0.52	0.91	-	0.34	0.3	1
Risk Aversion	2.41	0.63	1.91	1.84	1.85	2.04	3
Social Trust	3.44	1.57	2.21	2.67	2.62	3.08	5
Importance of Helping others	2.86	0.35	2.59	2.56	2.71	-	3
Altruism to Children	0.55	0.49	0.36	0.25	0.31	0.28	1
Having control (Effort role)	2.61	0.68	1.97	1.63	2.56	2.62	3
Being interested in politics	2.18	0.98	2.05	2.22	2.15	2.44	4

Group A : Age, Woman, Education (only for Egypt and Jordan), Children (Except for Morocco), Finan sit, badhealth, politic ideo (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, childaltruisme, Interest in Poli, Imp of Help (only for Egypt) and Role of effort.

The Surveys were conducted for the wave 5 between 2007 and 2008 and for the wave 6 between 2011 (after the Egyptian revolution) and 2014.

Appendix 4 : Regression Tables

Table 6: Determinants of preferences for redistribution and Effect of time in Egypt 1

	(1) Pref for redi	(2) Pref for redi	(3) Pref for redi	(4) Pref for redi	(5) Pref for redi	(6) Pref for redi
After revolution	1.497***	1.499***	1.491***	1.498***	1.482***	1.535***
Age=2		0.160*	0.167**	0.129	0.168*	0.125
Age=3		0.136	0.158*	0.0454	0.0908	0.0682
Age=4		0.333***	0.362***	0.255**	0.288***	0.281**
Woman			0.147***	0.0946	0.104*	0.143**
Education=2				−0.260***	−0.262***	−0.222***
Education=3				−0.211**	−0.210**	−0.191**
Education=4				−0.300***	−0.306***	−0.184**
Children					−0.0986	−0.103
Finan sit=2						0.199**
Finan sit=3						0.0823
Finan sit=4						−0.492***
Finan sit=5						−0.832***
Observations	4465	4465	4465	4305	4305	4304
Pseudo R^2	0.044	0.045	0.045	0.046	0.046	0.056

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Determinants of preferences for redistribution and Effect of time in Egypt 2

	(1) Pref for redis	(2) Pref for redis	(3) Pref for redis	(4) Pref for redis	(5) Pref for redis
After revolution	1.508***	1.639***	1.535***	1.560***	1.547***
badhealth	0.244***				
Politic ideo=2		−0.0154			
Politic ideo=3		−0.247***			
Trust people			0.454***		
Religious				0.245***	
Risk attitude=2					−0.0288
Risk attitude=3					−0.0373
Control variables	Group B	Group B	Group B	Group B	Group B
Observations	4304	4015	4299	4301	4281
Pseudo R^2	0.057	0.062	0.059	0.057	0.056

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Group B : Age, Woman, Education, Children, Finan sit

Table 8: Determinants of preferences for redistribution and Effect of time in Egypt 3

	(1) Pref for redis	(2) Pref for redis	(3) Pref for redis	(4) Pref for redis
After revolution	1.537***	1.498***	1.489***	1.590***
Imp of Help=2	−0.297**			
Imp of Help=3	−0.481***			
Childaltruisme		−0.183***		
Interest in Poli=2			0.0152	
Interest in Poli=3			−0.204***	
Interest in Poli=4			0.334***	
Role of effort=2				−0.166**
Role of effort=3				−0.533***
Control variables	Group B	Group B	Group B	Group B
Observations	4300	4304	4301	4300
Pseudo R^2	0.057	0.057	0.058	0.061

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Diff-in-Diff analysis

Table 9: Effect of time in Egypt, Jordan, Morocco, and Turkey

	(1) Egypt	(2) Jordan	(3) Morocco	(4) Turkey
Pref for redis				
After revolution	1.606***	0.404***	0.258***	0.281***
Control variables	Group A	GroupA	Group A	Group A
Observations	4003	2124	1809	2274
Pseudo R^2	0.076	0.019	0.048	0.011

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Group A : Age, Woman, Education (only for Egypt and Jordan), Children (Except for Morocco), Finan sit, badhealth, politic ideo (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, childaltruisme, Interest in Poli, Imp of Help (only for Egypt) and Role of effort.

Table 10: Marginal effects of "After revolution" for each of the four countries

	Marginal effects of after=1 (compared to after=0)				
	Very unfavorable	Unfavorable	Neither	Favorable	Very favorable
Egypt	-0.274	-0.060	0.032	0.071	0.231
Jordan	-0.096	0.012	0.028	0.012	0.045
Morocco	-0.033	-0.019	-0.002	0.011	0.043
Turkey	-0.030	-0.029	-0.010	0.014	0.055

Table 11: Effects of the interactions between the time variable and the country of residence

	(1) Egy*Jordan	(2) Egy*Morroco	(3) Egy*Turkey	(4) Egy*All
Pref for redis				
After revolution=1 × Egypte=1	1.150***	1.348***	1.393***	1.274***
Control variables	Group A	Group A	Group A	Group C
Observations	6416	6075	6437	10896
Pseudo R^2	0.056	0.059	0.060	0.031

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Egy : Egypt. All : Jordan, Morocco, and Turkey. Group A : Age, Woman, Education (only for Egypt and Jordan), Children (Except for Morocco), Finan sit, badhealth, politic ideo (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, childaltruisme, Interest in Poli, Imp of Help (only for Egypt) and Role of effort. Group C : Age, Woman, Children, Finan sit, badhealth, trust people, childaltruisme, Interest in Poli and Role of effort. In the first column we run a regression on the samples of Egypt and Jordan for the waves 5 and 6. In the second column we run a regression on the samples of Egypt and Morocco for the waves 5 and 6. In the third column we run a regression on the samples of Egypt and Turkey for the waves 5 and 6. In the fourth column we run a regression on the samples of Egypt, Morocco, Turkey and Jordan for the waves 5 and 6.

Table 12: Effect of time for the periods 2001-2008 and 2008-2012 in Egypt

	(1) 2001-2008	(2) 2008-2012
Pref for redis		
Between 2001 and 2008	1.027***	
Between 2008 and 2012		1.606***
Observations	5664	4003
Pseudo R^2	0.046	0.076

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Controls include : Group of variables B except Politic ideo and Imp of Help for the period 2001-2008

Table 13: Marginal effects of the time variable between 2001 and 2008, and between 2008 and 2012 for Egypt

	Marginal effects of the time variable				
	Very unfavorable	Unfavorable	Neither	Favorable	Very favorable
2000-2008	-0.227	0.043	0.067	0.053	0.063
2008-2012	-0.274	-0.060	0.032	0.071	0.231

Heterogeneous effects of the revolution in Egypt

Table 14: Differential Effect : Interactions between revolution and some determinants of preferences for redistribution

	(1) Pref for redis	(2) Pref for redis	(3) Pref for redis	(4) Pref for redis
Pref for redis				
After revolution=1 × Finan sit=2	−0.474**			
After revolution=1 × Finan sit=3	−0.764***			
After revolution=1 × Finan sit=4	−0.976***			
After revolution=1 × Finan sit=5	−1.375***			
After revolution=1 × badhealth=1		0.489***		
After revolution=1 × Interest in Poli=2			−0.0260	
After revolution=1 × Interest in Poli=3			0.0685	
After revolution=1 × Interest in Poli=4			0.706***	
After revolution=1 × Age=2				0.431**
After revolution=1 × Age=3				0.340*
After revolution=1 × Age=4				0.312
Observations	4003	4003	4003	4003
Pseudo R^2	0.080	0.077	0.077	0.077

Controls include: Group of variables A.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Effect of revolution in Egypt over the financial situation groups

	(1) All	(2) Difficult financial situation	(3) Average fin sit	(4) Very good fin sit
Pref for redis				
After revolution	1.606***	1.944***	1.740***	1.356***
Observations	4003	1358	1423	1222
Pseudo R^2	0.076	0.102	0.077	0.052

Controls include: Group of variables A.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Determinants of demand for redistribution in the Middle east and the North Africa : Comparison

Table 16: The effects of some factors on preferences for redistribution in the Middle East and the North Africa : Comparison

Variables	Positive effect & Significant	Negative effect & Significant	No significant
Being Risk averse (Risk attitude)	Algeria, Bahrain, Lebanon,Yemen	Iran, Turkey	Egypte, Morocco, Jordan, Libya, Palestine, Tunisia
Being religious (Attend religious services)	Egypte, Iraq, Lebanon	Palestine, Tunisia	Algeria, Iran, Bahrain, Morocco, Jordan, Libya, Yemen, Turkey
Thinking that unselfishness is an important quality child (Altruism attitude 1)	Jordan, Yemen	Egypte, Iraq, Lebanon, Tunisia	Algeria, Iran, Bahrain, Morocco, Kuwait, Libya, Palestine, Qatar, Turkey
Help others is important (Altruism attitude 2)	Tunisia	Egypte, Jordan, Lebanon, Libya, Palestine, Yemen, Kuwait	Algeria, Iraq, Bahrain, Morocco, Turkey
Good perception of the role of effort vs chance (Perception of the role of effort)	Algeria	Egypte, Iraq, Morocco, Jordanie, Libya, Qatar, Tunisia, Yemen, Turkey	Iran, Bahrain, Lebanon, Kuwait, Palestine

All regressions are controlled by the group of variables B: age, gender, education level, having children and financial situation. We drop the variables presenting a high missing values percentage in our regressions. The details about how we define these variables are in the Appendix A. We use the same models we used for Egypt. The complete regressions are available upon request. A positive effect means that the factor of interest enhance the probability of holding a favorable position to redistribution.