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# Three essays on preferences for redistribution : A dynamic perspective

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# THÈSE POUR OBTENIR LE GRADE DE DOCTEUR DE L'UNIVERSITÉ DE MONTPELLIER

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École doctorale d'économie de de gestion

Unité de recherche Center for Environmental Economics - Montpellier

## Three essays on preferences for redistribution: A dynamic perspective

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Le 15 décembre 2020

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UNIVERSITÉ  
DE MONTPELLIER

Three Essays on Preferences for Redistribution: A  
Dynamic Perspective

Bilal EL RAFHI

15 décembre 2020

*“A genius, huh? What does that mean? “Genius”? So I was not born with a whole lot of natural talent, not gifted like others . . . but I work hard and I never give up! That is my gift, that is my ninja way!” – Rock Lee [Naruto Shippûden]*

# Dedication

For all those who have sacrificed their lives for the sake of social justice.

# Remerciements

Je souhaite en premier lieu adresser mes remerciements au Professeur Brice Magdalou, mon directeur de thèse. En plus de ses nombreuses qualités en tant que personne, j'ai eu l'immense privilège d'avoir bénéficié de ses précieux conseils. Il a toujours su me pousser –à sa manière– à vouloir mieux faire. Je le remercie particulièrement pour sa patience et son honnêteté indéfectible qui m'ont accompagné tout au long de ma thèse.

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Si j'ai pu accomplir ce travail c'est aussi grâce aux moments d'évasion à travers les salles de sport que j'ai pu fréquenter, de ce monde merveilleux qu'est le cinéma, et de ces nombreux petits voyages en train qui m'ont permis de sillonner la France en solitaire.

Je garde le meilleur pour la fin, pour ma famille mon premier et mon dernier refuge. Je

tiens à exprimer toute ma reconnaissance à mon père mon plus grand exemple, ma mère qui a toujours cru en moi. Mon frère et mon plus cher ami Omar avec qui j'ai partagé les meilleurs moments à Montpellier. Mes deux petites sœurs, les êtres les plus chers à mon cœur Bayane et Tasnime. Je vous suis redevable, je ne pouvais pas rêver d'une meilleure famille, Merci infiniment.

# Abstracts

## Evolution of Demand for Governmental Redistribution in the Era of Growing Inequality: The Case of Germany

Previous empirical literature, often limited to cross-countries comparisons at a given point of time, has mainly revealed a weak relationship between inequality and demand for redistribution. In this paper, adopting a longitudinal approach, we show that a strong correlation exists between these two factors. We find that the level of demand for redistribution follows –with a delay of 2-3 years– the different phases of the evolution of inequalities, even after controlling for a wide range of factors. The study shows that this evolution of preferences is explained partly by a greater aversion to large disparities in incomes. Additionally, in contrast to the existing literature, our differential analysis shows that the evolution of preferences is homogeneous over East and West Germans, and that the rich have seen their support for redistribution increase significantly more than the poor.

**JEL Classification:** H21, D31, D63.

**Keywords:** Redistributive preferences, Inequality, Germany, ESS, SOEP.

## The Effect of the Arab Spring on Preferences for Redistribution in Egypt<sup>1</sup>

This paper investigates the effect of the revolution that occurred in January 2011 in Egypt on the demand for redistribution in that country, which has drastically increased

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<sup>1</sup>This paper has been published in the journal "*Review of income and wealth*"(2019) with A.Volle.

since that period. This shock has been an important event, enhancing freedom and the political structure. In a first step, taking into account the main determinants of preferences for redistribution in the literature, our results differ, showing a positive impact of religion and a negative impact of altruistic attitudes. In a second step, we rely on a difference-in-differences approach to estimate the effect of the revolution using three similar countries as a control group. 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 Codes:** H23, D74.

**Keywords:** Redistributive preferences, Revolution, Arab Spring, Freedom, Political situation.

## **Like Parents Like Child? The Intergenerational Transmission of Preferences for Redistribution**

The literature abounds with studies highlighting the existence of strong intergenerational correlations, some of which relate to preferences. This paper is the first to investigate empirically the intergenerational correlation of preferences for redistribution between parents and children. The main findings using the SOEP data suggest a substantial intergenerational transmission of preferences for taxation. In addition to the fact that the estimated correlations put parental preferences at the head of the determinants of individual attitudes towards redistribution, our mediation analysis challenges the impact of some variables considered as key determinants in the literature. Regarding the mechanism of transmission of these preferences, the social environment seems to play a more important role than direct family socialization. This study also shows that the absence of opinion on these redistribution issues can be explained by the individual's parents' attitudes as well as by the individual's level of education, gender and political orientation.

**JEL Classification:** H21, D31, D63.

**Keywords:** Redistributive preferences, Inequality, Germany, ESS, SOEP.



# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Motivation . . . . .	1
1.2	Some stylized facts on demand for redistribution across the world and across time . . . . .	3
1.2.1	High levels of demand for redistribution in 2011-2014 . . . . .	3
1.2.2	A net increase of demand for redistribution compared to 1995 . . . . .	4
1.2.3	Inequality and of demand for redistribution evolutions: A puzzle . . . . .	5
1.3	Literature Review on the determinants of preferences for redistribution . . . . .	7
1.4	Thesis structure . . . . .	9
<b>2</b>	<b>Evolution of Demand for Governmental Redistribution in the Era of Growing Inequality: The Case of Germany</b>	<b>13</b>
2.1	Introduction . . . . .	14
2.2	Stylized facts and literature review . . . . .	18
2.2.1	The Evolution of inequality in Germany between 1995 and 2016 . . . . .	18
2.2.2	The drivers of inequality trend . . . . .	20
2.2.3	Literature on inequality and support for redistribution . . . . .	22
2.3	Data . . . . .	24
2.4	Descriptive statistics . . . . .	26
2.5	Empirical strategy . . . . .	28
2.6	Basic results . . . . .	30
2.7	Heterogeneous analysis . . . . .	36
2.7.1	Alesina’s Prediction on the convergence of preferences between East and West Germany . . . . .	36

2.7.2	Convergence of preferences of most affluent towards those of the less affluent . . . . .	38
2.8	Conclusion . . . . .	40
<b>3</b>	<b>The Effect of the Arab Spring on Preferences for Redistribution in Egypt</b>	<b>46</b>
3.1	Introduction . . . . .	47
3.2	Context: The Egyptian Revolution in 2011 . . . . .	51
3.3	Data and descriptive statistics . . . . .	55
3.4	Empirical strategy . . . . .	58
3.5	Empirical results . . . . .	60
3.5.1	Determinants of preferences for redistribution . . . . .	60
3.5.2	Effect of the Revolution on preferences for redistribution . . . . .	68
3.6	Discussion and robustness checks . . . . .	75
3.7	Conclusion . . . . .	79
<b>4</b>	<b>Like Parents Like Child? The Intergenerational Transmission of Preferences for Redistribution</b>	<b>90</b>
4.1	Introduction . . . . .	91
4.2	Data . . . . .	96
4.3	The correlation between the redistributive attitudes of children and parents	98
4.3.1	Poor-redistributive attitudes . . . . .	99
4.3.2	Rich-redistributive attitudes . . . . .	104
4.3.3	Additional tests . . . . .	107
4.4	Channels of transmission of preferences: direct socialization vs indirect socialization . . . . .	113
4.4.1	The process of transmission of attitudes towards taxation on poor .	114
4.4.2	The process of transmission of attitudes towards taxation on rich .	115
4.5	Mediation analysis : Parent’s redistributive attitudes as confounders. . . .	119
4.6	Conclusion . . . . .	122
<b>5</b>	<b>Conclusion</b>	<b>129</b>

# List of Tables

- 2.1 Evolution of attitudes towards the state role regarding the financial security  
between 1997 and 2017: whole sample (Weighted) . . . . . 27
- 2.2 Analysis of demand for government redistribution (ESS) . . . . . 32
- 2.3 Evolution of preferences with basic controls . . . . . 34
- 2.4 Convergence between East and West (89 (SOEP)) . . . . . 36
- 2.5 Evolution of preferences over financial situation groups (ESS) . . . . . 39
- 2.6 Evolution of preferences over incomes groups (ESS) . . . . . 39
- 2.7 Basic regressions Alesina Original Specification OLS . . . . . 42
- 2.8 Basic regressions Alesina Original Specification Probit . . . . . 44
  
- 3.1 Some components of the freedom situation in Egypt between 2008 and 2012 54
- 3.2 Percentages of individuals who are favorable (or very favorable) to redis-  
tribution before and after January 2011 in the four countries . . . . . 57
- 3.A Determinants of preferences for redistribution and effect of time in Egypt:  
Age, Sex, Education, Children and Financial Situation . . . . . 63
- 3.B Determinants of preferences for redistribution and Effect of time in Egypt:  
Health, Political Ideology, Trust, Perception of role of effort and Interest  
in politics . . . . . 65
- 3.C Determinants of preferences for redistribution and effect of time in Egypt:  
Attend religious services, Altruism and Risk attitude . . . . . 66
- 3.6 Effect of time in Egypt, Jordan, Morocco, and Turkey . . . . . 70
- 3.7 Effects of the interactions between the time variable and the country of  
residence . . . . . 71
- 3.8 Effect of time for the periods 2001-2008 and 2008-2012 in Egypt . . . . . 72

3.9	Differential Effect: Interactions between revolution and some determinants of preferences for redistribution . . . . .	73
3.10	Effect of revolution in Egypt over the Financial Situation groups . . . . .	73
B.1	Summary statistics: Egypt . . . . .	85
B.2	Summary statistics: Jordan, Morocco and Turkey . . . . .	86
C.1	The effects of some factors on preferences for redistribution in the Middle East and the North Africa: a comparison . . . . .	87
D.1	The impact of trust towards government on the preferences for redistribution in 2001 and 2012 . . . . .	88
D.2	Evolution of the index of the trust towards government between 2001 and 2012 (by %) . . . . .	89
4.1	% Supporting redistribution (P-RA and R-RA) . . . . .	98
4.2	Poor-redistributive attitudes : Fathers-Children (%) . . . . .	99
4.3	Poor-redistributive attitudes : Mothers-Children (%) . . . . .	99
4.4	Poor-redistributive child's attitude . . . . .	103
4.5	Rich-redistributive attitudes : Fathers-Children (%) . . . . .	104
4.6	Rich-redistributive attitudes : Mothers-Children (%) . . . . .	104
4.7	Rich-redistributive child's attitude . . . . .	106
4.8	Effects of mothers and fathers attitudes without control for each other . . .	108
4.9	Each transmission process is independent of the other . . . . .	109
4.10	"No opinion" on preferences for taxation determinants . . . . .	111
4.11	Heterogeneous effects: Place of living (with parents or not) . . . . .	112
4.12	Evidence of mechanisms of socialization (Poor-RA) . . . . .	117
4.13	Evidence of mechanisms of socialization (Rich-RA) . . . . .	117
4.14	Controlling for the parent's poor attitudes . . . . .	120
4.15	Control for the parent's rich attitudes . . . . .	121
4.16	Descriptive statistics on support for taxation in Germany . . . . .	127
4.17	% Support for redistribution across Germany regions . . . . .	128

# List of Figures

- 1.1 Demand for reducing income differences [2011-2014] . . . . . 4
- 1.2 Demand for reducing income differences [1995-2001] . . . . . 5
- 1.3 Evolution of top 10% share of national income . . . . . 6
- 1.4 Evolution of share of citizens favorable to redistribution . . . . . 7
  
- 2.1 Evolution of inequalities between 2000 and 2016 (difference between post-tax incomes of top10% and bottom50%) . . . . . 16
- 2.2 Evolution of % of Germans favorable to government intervention between 2002 and 2018 [European Values Survey] . . . . . 16
- 2.3 Evolution of inequality in Germany (Post-tax) between 1995 and 2016 [Source: WID.com ; Accessed on 13 December 2019] . . . . . 19
  
- 3.1 Evolution of support for redistribution and the interest in politics in Egypt between 2008 and 2012 . . . . . 49

# Chapter 1

## Introduction

### 1.1 Motivation

Over the last two decades, most developed countries have experienced significant increases in income and wealth inequalities (see [Alvaredo et al., 2018b](#); [Piketty, 2020](#)). During the same period, especially following the economic crises of 2000 and 2008, multiple waves of economic recessions were hitting severely. These two trends combined have triggered a wave of social protests all around the world, such as the "We are the 99%" movement in 2011 in the United States and more recently the "Gilets jaunes" movement in France. Such social conflicts have brought the debate on inequalities to the forefront, and have subsequently aroused the interest of scholars. This interest was reflected in the enormous success of Piketty's book "Capital in XXI Century", recently adapted into a film, but also in the countless studies carried out on the measurement of inequalities (see [Atkinson, 2008](#); [Cowell, 2000](#); [Jenkins and Van Kerm, 2009](#)), on the link between inequality and growth (see [Alvaredo et al., 2018a](#); [Banerjee and Duflo, 2003](#); [Benabou, 2002](#); [Lübker, 2006](#); [Madsen et al., 2018](#); [Neves et al., 2016](#)) and on the negative impacts of inequality on society, including social conflicts (see [Acemoglu and Robinson, 2000](#); [Piketty, 2020](#); [Saez and Zucman, 2019](#); [Stiglitz, 2012](#)) .

One of the most controversial topics among these social movements and academics is the legitimacy of these inequalities. The position towards the growing inequalities as fair or unfair lead –along with other factors– to divergent "*preferences for redistribution*".

Preferences for redistribution encompass a large set of issues such as the acceptable levels of income differences, the recipients of redistribution, the type of redistribution, the government implication in redistribution and the boundaries of redistribution. Exploring preferences for redistribution consists on focusing on the "demand" side of redistribution which is the public attitudes towards redistribution.<sup>1</sup> Following and understanding public demand for redistribution is essential for successful implementation of public policies.

Considerable empirical and theoretical studies have been carried out on the determinants of preferences for redistribution (for a literature review see [Alesina and La Ferrara, 2005](#); [Clark and D'Ambrosio, 2015](#); [Magdalou, 2020](#)). These studies show that the individual's attitude towards inequality and redistribution is driven mainly by his or her economic conditions, but also by his/her societal perceptions, fairness considerations, political position, social preferences and psychological traits. The dominant analysis consists of identifying the determinants of individual preferences at a given point in time. This insistence on individual characteristics as the main determinants reflects an intrinsically static analysis of the determinants of support for redistribution. Nevertheless, it is well known that individuals are permanently under the influence of several contextual factors that evolve over time and place and contribute to the formation of economic and political preferences. A look at the literature reveals a major gap regarding the studies on redistributive preferences in a dynamic perspective. This thesis, which is a compilation of 3 papers, aims to contribute to this literature by highlighting the dynamic dimension of the demand for redistribution while revealing some of the exogenous factors behind this dynamic.

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<sup>1</sup>As opposed to the "supply" side of redistribution represented by the redistributive measures adopted by government.

## 1.2 Some stylized facts on demand for redistribution across the world and across time

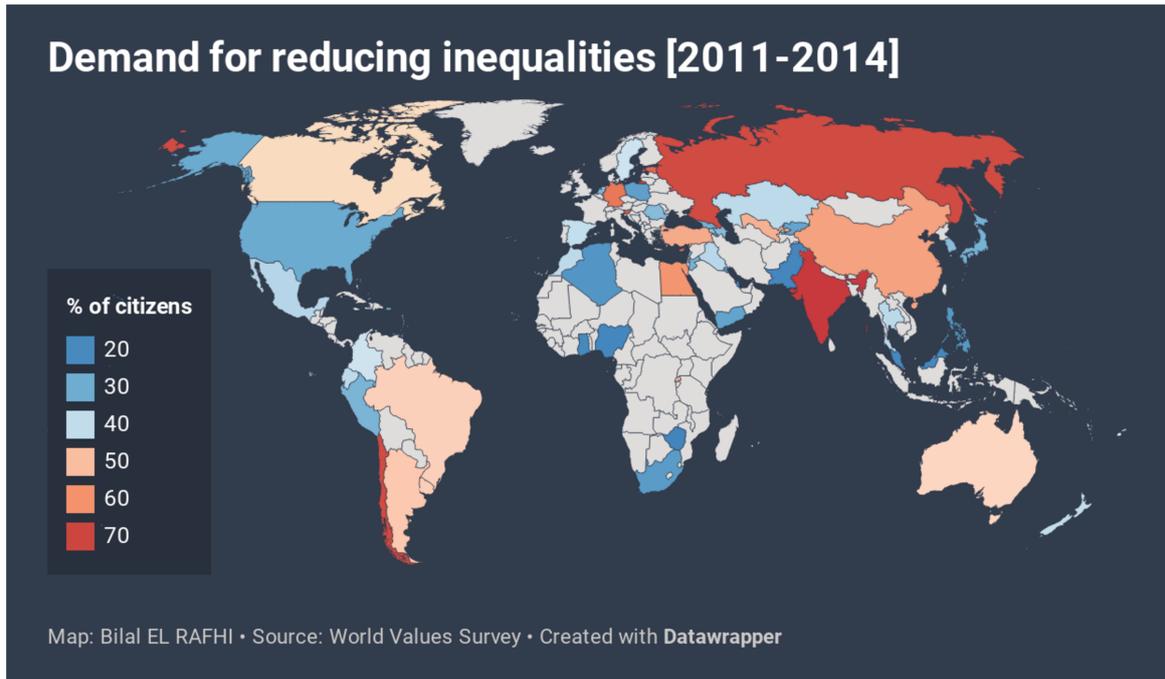
*Preferences for redistribution and demand for redistribution.* As mentioned above, preferences for redistribution are multidimensional and then contain several facets. One of the most salient attitudes belonging to this family of preferences is the attitude towards reducing income differences (i.e. demand for redistribution). We seek in this section to report some stylized facts on the levels of demand for redistribution across the world and across years.

*Availability of data.* One the obstacles in the quest of drawing a picture of the levels of demand for redistribution is the availability of data. Despite the growing interest on conducting surveys exploring the public political and social attitudes, we are still far from a full coverage of countries and time frames. One of the rare surveys where 1) a question on demand for redistribution is asked, 2) a considerable number of countries is covered, 3) the period covered is relatively large is the World Values Survey (WVS). We rely then principally on WVS surveys conducted between 1994 and 2014.

*Question of interest.* In order to compute the share of individuals favorable for reducing the income differences we rely on 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. Sentences: "Incomes should be made more equal" (1) vs. "We need larger income differences as incentives" (10).* We consider that the respondent is favorable for redistribution if he/she gives an answer from 1 to 4.

### 1.2.1 High levels of demand for redistribution in 2011-2014

Based on citizens answers to the question above, we build the following world map (figure 1.1) where we represent the share of citizens favorable for less income disparities in each of the countries in the period 2011-2014 where data is available (for about 35 countries).

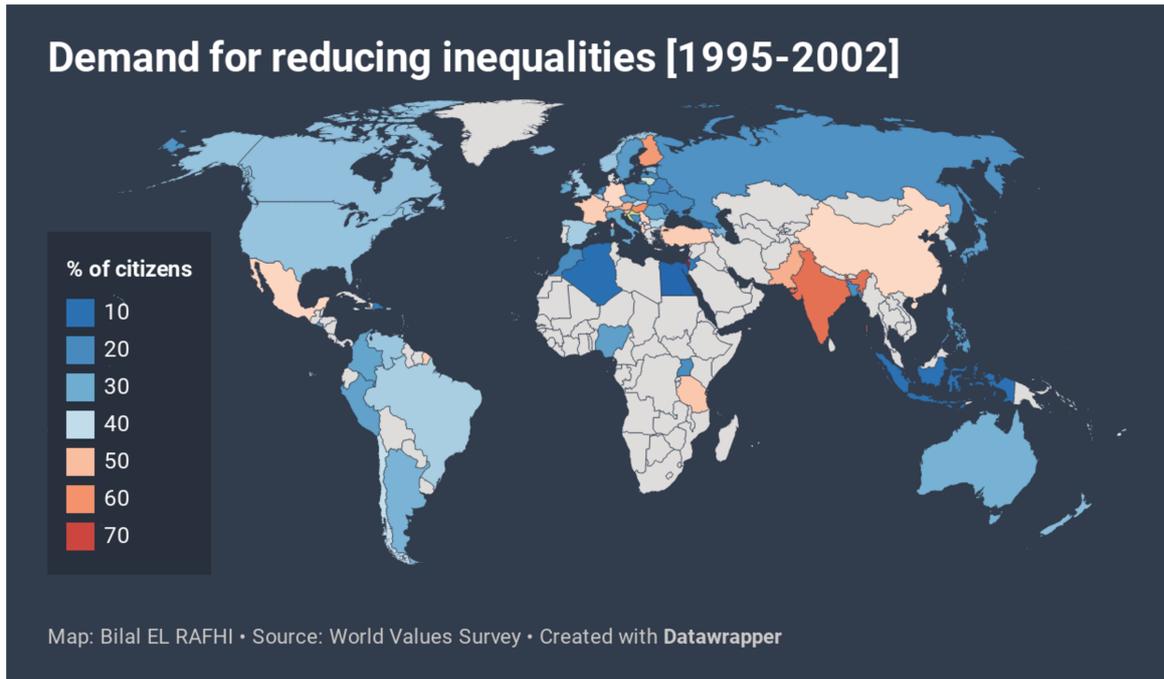


**Figure 1.1:** Demand for reducing income differences [2011-2014]

The blue colors indicate that less than half of the citizens are in favor of redistribution, and the red colors indicate that more than half are in favor. The main finding is that the majority of countries (specially the most populated ones) display high levels of redistributive support (between 45% and 71%). These numbers are also complemented by data from the *AfroBarometer*, and the *Arabbarometer* where people are asked whether they think the government is managing the reduction of the gap between rich and poor well or not (not reported). These surveys show extremely high dissatisfaction rates in 2016-2018 in the African continent and the Middle East, with an average of 77%. Overall, we can conclude that in the period 2011-2014 the world has witnessed a quite high demand for redistribution.

### 1.2.2 A net increase of demand for redistribution compared to 1995

In figure 1.2, we can see by country the share of citizens favorable to reducing income disparities in the period 1995-2002. We can easily notice that the majority of countries are in blue, which means low global support for redistribution. The world map 15 years



**Figure 1.2:** Demand for reducing income differences [1995-2001]

later (figure 1.1) clearly shows a totally different reality, with a marked increase in the proportion of people in favor of reducing income differences.<sup>2</sup>

### 1.2.3 Inequality and of demand for redistribution evolutions: A puzzle

*Data.* One of the most prominent explanations regarding the increasing demand for redistribution is the raising of inequality levels. In order to compare the evolution of demand for redistribution to the evolution of level of inequality, we draw two grouped columns charts (figures 1.3 and 1.4).<sup>3</sup> We focus on a number of the most populated countries in the world across the continents.<sup>4</sup> Figure 1.3 reports the evolution of inequalities between

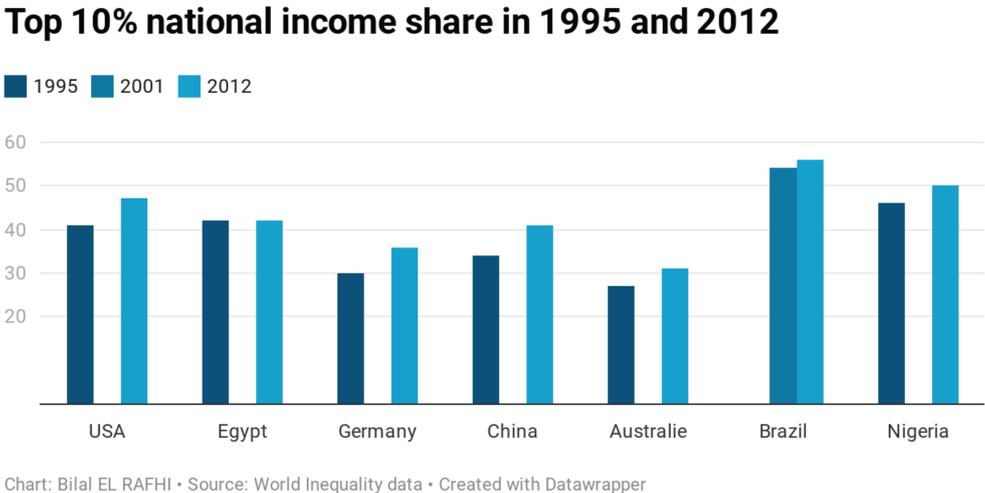
<sup>2</sup>We run the same analysis on another face of preferences for redistribution which is the attitudes towards government intervention in redistribution. We rely on the International Social Survey Programme (ISSP) and on the European Social Survey (ESS). Same pattern of evolution is revealed: there is also a sharp increase in the demand for government intervention in redistribution.

<sup>3</sup>We adopt as an indicator of inequality level the top10% share of national income.

<sup>4</sup>The most populated country in North America is the USA, in North Africa and Middle East is Egypt, in Sub-Saharan Africa is Nigeria, in Oceania is Australia, in Asia is China, and in European Union is Germany.

1995 and 2012 and the figure 1.4 reports the evolution of demand for redistribution between 1995 and 2012.<sup>5</sup>

*Comparison of 1.3 and 1.4.* Comparing inequality and the demand for redistribution levels for each country before (in 1995) and after (in 2012), it is clear that the link between these two dimensions is ambiguous. Even if we notice a positive relationship between inequality and the demand for redistribution in Germany, China, Australia and Brazil, where a stronger demand for redistribution had been associated with increasing inequality, the other countries do not show the same pattern. We see in Egypt, a country when inequality level has not changed, a rise in the percentage of citizens calling for narrowing income differences (from 6% to 59%). In Nigeria, on contrary, there is a decrease in this percentage (27% to 19%), a country where inequality has been –slightly– increasing. In addition, we have the well-known case of the United States of America where the top10% share of national income has significantly risen, but with almost the same percentage of citizens favorable for more equal incomes in 1995 and in 2012.



**Figure 1.3:** Evolution of top 10% share of national income

<sup>5</sup>We rely on the World Inequality Data (WID) to report the top 10% national pre-tax income share.

### Share of citizens favorable for redistribution in 1995 and 2012

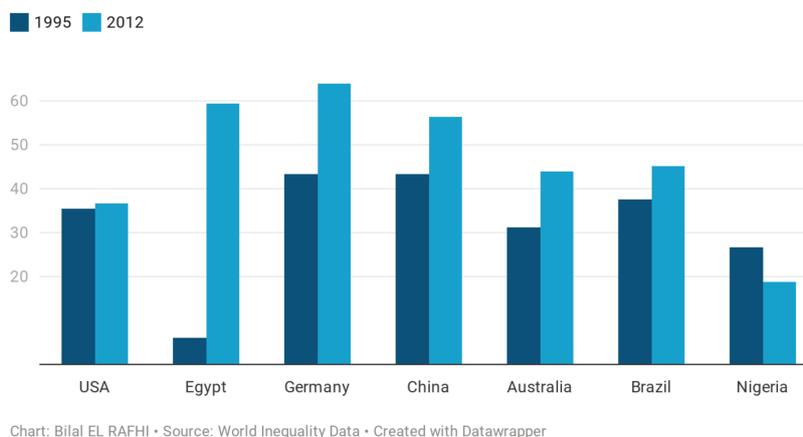


Figure 1.4: Evolution of share of citizens favorable to redistribution

## 1.3 Literature Review on the determinants of preferences for redistribution

The chapters composing this thesis belong to a recent and growing literature on the formation of preferences for redistribution.

In the literature, everything starts with [Meltzer and Richard \(1981\)](#) model on the size of government, in other words on the ideal level of redistribution, where they assume that the only factor that defines whether or not an individual is in favor of redistribution is his or her own economic situation. Since then, dozens of studies have been conducted on the relationship between levels of inequality and levels of demand for redistribution (see [Alesina et al., 2018b](#); [Choi, 2019](#); [Engelhardt and Wagener, 2014](#); [Gimpelson and Treisman, 2018](#); [Kenworthy and McCall, 2008](#); [Kuziemko et al., 2015](#); [Lübker, 2007](#); [Page and Goldstein, 2016](#); [Rueda and Stegmueller, 2016](#)). The classic theoretical prediction is that inequality is positively correlated with demand for redistribution: the higher the inequality, the more the poor will benefit from redistribution. The results that have emerged show that the relationship between inequality and demand for redistribution is not so obvious. These scholars show that the impact of inequality on the demand for redistribution

would depend on several other factors, and that inequality and redistribution are subject to many misperceptions.

A great deal of attention has also been paid to the contribution of personal financial status in the formation of these preferences. Factors like the income decile to which the individual belongs ([Karadja et al., 2017](#)), his or her prospects for social mobility ([Benabou and Ok, 2001](#)), socio-professional category ([Guillaud, 2013](#)), risk exposure at work ([Rehm, 2009](#)) are prominent determinants of the demand for redistribution.

Since the self-interest factors could explain only a part of the phenomenon of support for redistribution, many studies have emerged highlighting a wide range of factors related to ideological and social dimensions. For example, [Alesina et al. \(2002\)](#) and [Benabou and Tirole \(2006\)](#) argue about the considerable impact of fairness considerations on forming the individual position towards inequality and redistribution (see more recently [Stantcheva, 2020](#)) . This ideological factor is often exposed as the main explanation behind the much lower rates of redistributive support in the United States compared to Europe (see [Alesina and La Ferrara, 2005](#) and [Alesina et al., 2018b](#)) .

[Costa-Font and Cowell \(2015\)](#) in turn, point out in their recent review of the literature, how important social identity is in explaining the heterogeneity we encounter with respect to rates of support for redistribution. In this vein, since the last wave of immigration to Europe, studies have multiplied on the negative relationship between the rate of immigration and the demand for redistribution among natives (see [Alesina et al., 2018a,1](#); [Finseraas, 2008](#); [Runst, 2018](#)). The main explanation of this relationship revolves around the nature of relationship between social diversity (heterogeneity) and demand for redistribution: a higher rate of immigrants in a country leads to a less homogeneous society, which in turn makes the native citizens less favorable for redistribution.<sup>6</sup>

As can easily be seen, all these factors are of an individual (endogenous) order and investigated at a given time of point. Very few studies deal with the effect of exogenous

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<sup>6</sup>This means that we are in favour of redistribution *if* the recipients are similar to us.

changes on personal attitudes towards redistribution and with the drivers of evolution of preferences over time.<sup>7</sup> One of these studies is [Alesina and Fuchs-Schündeln \(2007\)](#) investigation on the higher level of demand of government intervention in financial security in East Germany compared to West Germany. They explain this difference by the fact that East Germany lived under a communism regime in Germany for a long period of time, and expect then a convergence of preferences between these two regions as a result of the unification.

## 1.4 Thesis structure

*Question of research.* Based on the previous two sections, we observe that 1) the preferences for redistribution evolution follows different trajectories around the world, 2) a major lack exists regarding research on the evolution of preferences for redistribution, 3) the principal factors presented as determinants of these preferences are mainly of a 'micro' nature and motivated by self-interest incentives.

In this thesis, applying diverse empirical strategies including diff-in-diff, panel analysis and intergenerational correlations, I exploit the evolution and structure of some dimensions of the preferences for redistribution in several contexts and from several angles. I go deeper into the mechanisms behind these evolutions by investigating their main drivers. A particular emphasis is being put on the institutional factors and on the heterogeneous evolution of these preferences.

**Chapter 1** explores longitudinally the impact of the evolution of inequalities in Germany between 1997 and 2015 on one facet of the preferences for redistribution, namely the level of demand for state intervention in redistribution and financial security. We chose Germany because of the type of data available (cross-section and panel), the long period covered, and the relatively stable political context. We rely on the most advanced measures of inequality and on two of the most praised data bases, which are the German

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<sup>7</sup>Even if the evolution of inequality can be seen as an exogenous shock, all the explanations provided by scholars regarding its impact on the demand for redistribution pass through a self-interest micro channel.

Socio- Economic Panel (SOEP), and the European Social Survey (ESS). This study is one of the few in this field to adopt a dynamic approach, thus avoiding the many drawbacks of the inter-country comparisons so often employed.

Carrying out a longitudinal analysis allowing us to control for a large set of individual characteristics, we find a positive relationship between the levels of inequality of demand for government redistribution. We find that the level of demand for redistribution follows –with a delay of 2-3 years– the different phases of the evolution of inequalities. The micro-level factors like the personal economic situation and the political orientation hardly explain any part of this evolution. The most surprising finding, in contrast to most of the theoretical literature, is that the evolution of the demand for government redistribution is significantly higher among the more affluent compared to the less affluent. This result calls into question the economic explanation behind the inequality-demand for redistribution relationship often outlined in the literature and put forward another motivations like altruism and risk aversion.<sup>8</sup> Our study also shows that the impact of inequality on the demand for government redistribution is the same regardless of where people lived before German unification in 1989 (in East or West Germany).

**Chapter 2** outlines the important role that the political environment –as an exogenous factor– can play in the formation of preferences for redistribution.<sup>9</sup> We investigate the effect of the revolution that occurred in January 2011 in Egypt on the demand for redistribution in that country. In fact, as the World Values Survey (WVS) display, 22% of the Egyptian population was in favor of redistribution in 2008, this percentage rose to 59% in 2012. Controlling for a large set of individual factors and through a diff-in-diff approach taking into account 3 countries sharing important characteristics with Egypt, we show that the new political context after the Arab Spring had a significant influence on Egyptian attitudes towards redistribution. Through an heterogeneous analysis, our

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<sup>8</sup>In most of the theoretical models on unequalled and demand for redistribution, there is a positive interaction between the individual income decile and level of inequality: higher the inequality is, more likely the poor are favorable to redistribution.

<sup>9</sup>This chapter was published with A.Volle in the *Review of Income and Wealth* under the following title "The Effect of the Arab Spring on Preferences for Redistribution in Egypt"

results reveal that revolution effect is stronger for the poorest people and those who are interested in politics.

In adding of that, our study is the first to explore the subject of demand for redistribution within the Middle East and North Africa (MENA) region. We report heterogeneous levels of demand for redistribution across MENA countries.<sup>10</sup> Also, through an analysis of the structure of determinants of support for redistribution in this region, we report some specificities regarding the influence of religion and altruism attitudes.

**Chapter 3** deals with the other side of evolution, i.e. the “persistence” of the distribution of preferences for redistribution. We seek to exploit in this chapter the contribution of the family, and more generally, social institutions in the formation of such preferences. To our knowledge, this study is the first investigation of whether there is a transmission of taxation preferences from parents to children, through which channels it occurs, which factors foster the transmission and the extent to which it explains the impact of well-known determinants of the demand for redistribution. We rely on the German Socio-Economic Panel (SOEP), one of the very few databases to provide the possibility of linking children to their parents. The attitudes towards taxation on poor and on rich are the component of preferences for redistribution under study in this chapter.

The main findings suggest a substantial intergenerational transmission of preferences for taxation. Our estimated correlations allow us to put parents’ preferences at the head of the determinants of individual attitudes towards redistribution above all well-known factors identified as major determinants. In adding of that, our mediation analysis using the preferences of parents challenges the impact of some variables considered as key determinants in the literature. Regarding the mechanism of transmission of these preferences, our heterogeneous analysis shows that the social environment seems to play a more important role than direct family socialization. This study also shows that the absence of opinion

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<sup>10</sup>One of the shortcomings associated with the literature on redistributive preferences is that existing studies focus almost exclusively on developed countries, especially the Western countries (United States and Europe).

on these redistribution issues can be explained by the individual's parents' attitudes as well as by the individual's level of education, gender and political orientation. All these findings, provides us with an important food for thought on the evolution (persistence) of attitudes related to inequality and redistribution, and thus enables us to provide relevant explanations for the differences between countries regarding tolerance towards inequalities from a historical perspective.

## Chapter 2

# Evolution of Demand for Governmental Redistribution in the Era of Growing Inequality: The Case of Germany

### Résumé en Français

La littérature empirique existante, souvent limitée à des comparaisons inter-pays à un instant donné, a principalement révélé une faible relation entre l'inégalité et la demande de redistribution. Dans le présent document, en adoptant une approche longitudinale, nous montrons qu'il existe une forte corrélation entre ces deux facteurs. Nous constatons que le niveau de la demande de redistribution suit - avec un décalage de 2 à 3 ans - les différentes phases de l'évolution des inégalités, même après avoir contrôlé pour une large palette de facteurs. Cette étude montre que cette évolution des préférences s'explique en partie par une plus grande aversion pour les grands écarts de revenus. En outre, contrairement à la littérature existante, notre analyse différentielle montre que l'évolution des préférences est homogène entre l'Allemagne de l'Est et l'Allemagne de l'Ouest, et que les riches ont vu leur soutien à la redistribution augmenter considérablement plus que les pauvres.

## English Abstract

Previous empirical literature, often limited to cross-countries comparisons at a given point of time, has mainly revealed a weak relationship between inequality and demand for redistribution. In this paper, adopting a longitudinal approach, we show that a strong correlation exists between these two factors. We find that the level of demand for redistribution follows –with a delay of 2-3 years– the different phases of the evolution of inequalities, even after controlling for a wide range of factors. The study shows that this evolution of preferences is explained partly by a greater aversion to large disparities in incomes. Additionally, in contrast to the existing literature, our differential analysis shows that the evolution of preferences is homogeneous over East and West Germans, and that the rich have seen their support for redistribution increase significantly more than the poor.

### 2.1 Introduction

In 2007, for the first time in recent German history, the share of the top decile in total pre-tax income has surpassed that of the bottom 50% (see [Alvaredo et al., 2018b](#); [Blanchet et al., 2019](#)). An increase in inequality due principally to successive reforms of the tax system in favour of the most affluent and an important increase in wage disparities (see [Bach et al., 2013](#); [Biewen and Juhasz, 2012](#); [Schmid and Stein, 2013](#)). Among the issues raised in the wake of this growing inequality is the citizens’ reaction regarding their support for state intervention in redistribution. This work builds on the previous studies that have investigated the relationship between levels of inequality and levels of demand for redistribution ([Alesina et al., 2018b](#); [Ashok et al., 2015](#); [Choi, 2019](#); [Finseraas, 2009](#); [Kuziemko et al., 2015](#); [Meltzer and Richard, 1981](#); [Page and Goldstein, 2016](#); [Rueda, 2018](#)). This paper explores, through a longitudinal analysis, based on the most recent databases, the nature of relationship between levels of inequality and levels of demand for redistribution, for the period 1995-2017 in Germany.

*Empirical strategy.* We begin –principally based on the World Inequality database

(WID) and the European Social Survey (ESS)– with presenting trends in income inequality and trends in public support for government redistribution. In the second phase, using the ESS and the German Socio-Economic Panel (SOEP), an analytical analysis is carried out in which a series of regressions are conducted in order to control the observed trend for the maximum number of relevant factors.

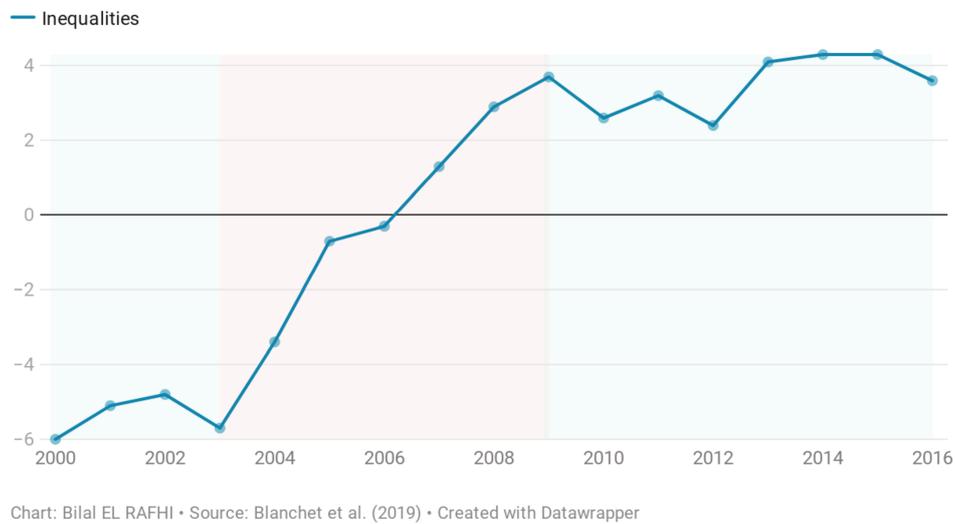
We then conduct a differential analysis in which two particular topics are considered: the first is [Alesina and Fuchs-Schündeln \(2007\)](#)'s prediction about the convergence of East German citizens' preferences towards those of the West as a consequence of the German reunification in 1990, the second is an empirical examination of [Meltzer and Richard \(1981\)](#)'s underlying hypothesis implying that the higher the inequality, the less favorable the rich are to redistribution.<sup>1</sup>

**Results.** Our key findings are as follows. For the studied period, the trends of incomes inequalities and preferences for government intervention in redistribution are very similar with a response delay of 2-3 years (see figures 2.1 and 2.2). These trends are characterized by a first phase in which the level of inequality grows very slowly and the percentage of individuals supporting state intervention in redistribution is rather stable, followed by a strong increase in both indicators, and then by a third phase in which both figures stabilize. The regression analysis shows that the nature of evolution of preferences remains essentially the same after controlling for a wide range of factors that refer to the changes that have taken place in Germany in this period.

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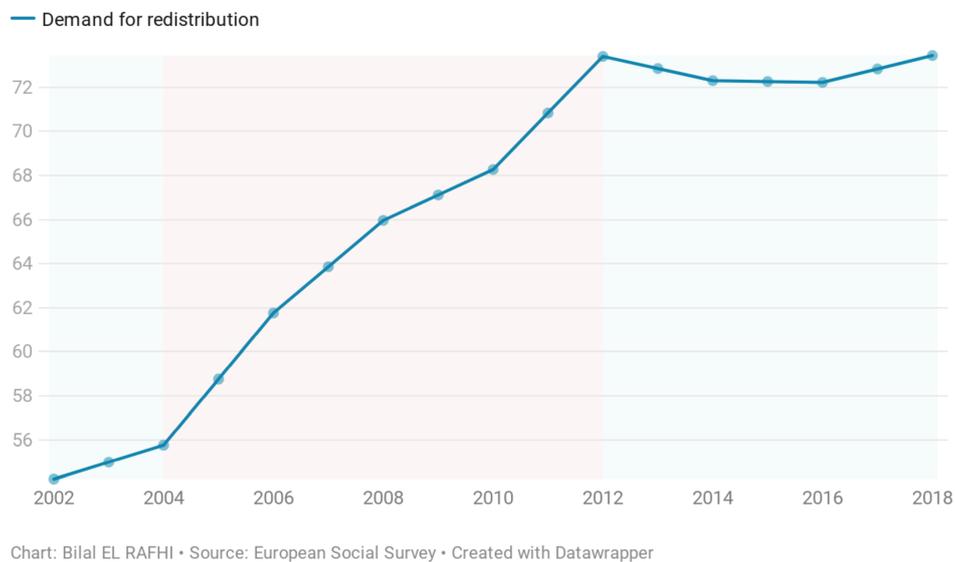
<sup>1</sup>[Meltzer and Richard \(1981\)](#) argue that the greater the difference between median and average incomes, the more the rich will lose as a result of redistribution.

### Evolution of Inequalities [Difference between Top10 and Bottom50 shares of national income]



**Figure 2.1:** Evolution of inequalities between 2000 and 2016 (difference between post-tax incomes of top10% and bottom50%)

### Evolution of demand for governmental redistribution



**Figure 2.2:** Evolution of % of Germans favorable to government intervention between 2002 and 2018 [European Values Survey]

The analysis also reveals one important mediator of the effect of inequality on demand for redistribution which is the aversion towards large differences in income: about one-

third of the evolution of preferences for redistribution in Germany between 2008 and 2016 is explained by the drop of share of Germans tolerating large differences in income from 60% to 50%. In the heterogeneous analysis, we find that the magnitude of the increase in support for redistribution was broadly the same in the two Germanies, contrary to what [Alesina and Fuchs-Schündeln \(2007\)](#) expected as a result of German unification. The differential analysis reveals also a convergence of the affluent preferences towards those of the poor, in contradiction with [Meltzer and Richard \(1981\)](#)'s model and in accordance with other empirical studies such as those of [Dimick et al. \(2014\)](#), [Rueda \(2018\)](#) and [Sachweh and Sthamer \(2019\)](#) .

*Contributions to literature.* This study contributes to an ever-growing literature, namely the formation and evolution of preferences for redistribution (for a literature review see [Alesina and La Ferrara, 2005](#); [Clark and D'Ambrosio, 2015](#); [Magdalou, 2020](#); [Tausch et al., 2013](#)). Numerous factors have been identified as determinants of these preferences, mostly associated with personal economic circumstances, social preferences, ideological positions and some institutional aspects. In our study, new evidence is provided on what is considered to be the most important relationship in this literature, namely the link between levels of inequality and attitudes towards redistributive policies. Although a large number of empirical studies have been carried out on the subject, our study stands out from the rest with some advantages.

First of all, we rely on the most advanced measures of inequality in Germany which avoids the imprecise estimates adopted by many other studies.<sup>2</sup> Second, we conduct our analysis employing an under-exploited strategy, which is the longitudinal approach, avoiding the drawbacks of the often-used cross-national approach. Third, we take advantage of two of the most comprehensive databases (including one of a panel nature) encompassing a variety of questions on attitudes toward government implication in redistribution, thus allowing us 1) to control for a long list of factors and 2) to cover for a recent and relatively long period of time. Fourth, we investigate more deeply the impact of inequality on the demand for redistribution by highlighting its heterogeneous effects and revealing some of

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<sup>2</sup>It is shown in section [2.2](#) that the estimation of levels inequality differs greatly depending on the sources of information and the methodologies followed.

the mediating factors.

The remainder of the paper is organized as follows. Section 2 is devoted to reviewing the literature that has been carried out on measuring inequality in Germany, as well as the drivers of these inequalities. In the same section, we review the empirical literature on the impact of inequality on preferences for redistribution. In Section 3 lays out the description of the data. Section 4 traces the evolution of inequalities and preferences in a descriptive way. In Section 5, we posit the empirical strategy. In section 6, we present the results. Section 7 concludes.

## 2.2 Stylized facts and literature review

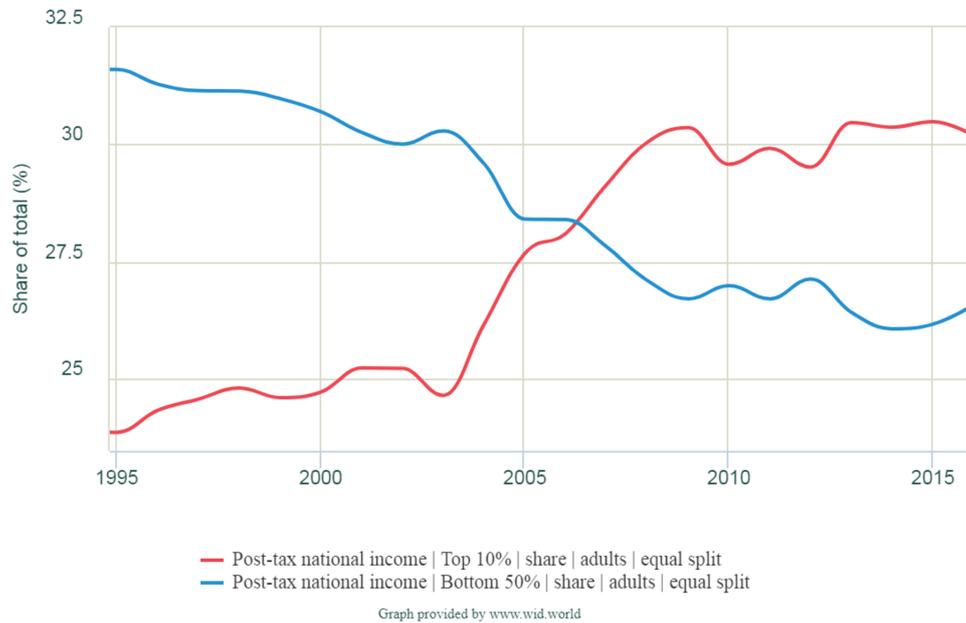
In this section, we describe the evolution of inequality in Germany between 1995 and 2016 by reviewing the literature on the issue, then we examine the drivers of inequalities as they emerge from studies addressing the issue. We end with a literature review focusing on the empirical evidence concerning the effect of inequality on attitudes towards redistribution.

### 2.2.1 The Evolution of inequality in Germany between 1995 and 2016

In the majority of the European countries, income disparity has grown between 1980 and 2017, as showed by the recent study of [Blanchet et al. \(2019\)](#). Compared to the rest of Europe, Germany has experienced one of the highest increases in inequality. We are interested here in the trajectory that the evolution of inequality followed between 1995 and 2017. Dozens of studies have been conducted to follow this trend using different approaches (see [Bach et al., 2013,1](#); [Behringer et al., 2019](#); [Biewen and Seckler, 2019](#); [Biewen et al., 2017](#); [Card et al., 2013](#); [Gornig and Goebel, 2018](#); [Grabka and Schröder, 2018](#); [Jessen, 2015](#); [Samarina and Nguyen, 2019](#); [Vacas-Soriano et al., 2019](#)). By cross-referencing these studies, we draw the two following lessons.

First, by decomposing the evolution of income inequalities between wages inequalities and capital income inequalities, we notice that this evolution is multidimensional: both

### Income inequality, Germany, 1995-2016



**Figure 2.3:** Evolution of inequality in Germany (Post-tax) between 1995 and 2016 [Source: WID.com ; Accessed on 13 December 2019]

the two components of income inequalities have been increasing, but we notice also that they are happening in different time frames. While the period 1995-2003 was essentially characterized by the evolution of wage disparities, the period 2004-2008 was more marked by an increased concentration of capital income in the hands of the top 10%.

More importantly, we note that the statistics reported on the levels of inequalities vary significantly between these studies. The principal reason is that each study relies on different data. Some studies rely only on surveys, mostly the "SOEP" (see for example [Jessen, 2015](#), [Biewen et al., 2017](#) and [Grabka and Schröder, 2018](#)). However, as showed by [Bach et al. \(2015\)](#) and [Behringer et al. \(2019\)](#), relying only on surveys leads to under-present the top decile and more particularly the top percentile, and therefore to underestimate severely the evolution of inequality for certain periods. As other researchers have shown, methods taking into account additional sources like the tax data and the national accounts, report much higher levels of income inequality (see for example [Biewen and Juhasz 2012](#), [Jessen 2015](#), [Bach et al. 2019](#), [Behringer et al. 2019](#), [Samarina and Nguyen 2019](#) and [Blanchet et al. 2019](#)).

Therefore, in order to get the most accurate assessment of the evolution of inequalities in Germany for this period, we choose the study of [Blanchet et al. \(2019\)](#) as a reference for tracking the evolution of inequalities, while including other studies in the analysis as well. The [Blanchet et al. \(2019\)](#)'s analysis is one of the most recent studies on the subject, covering different databases (surveys, tax data, national accounts), employing the most advanced empirical models and covering the whole period under study year by year.

Figure 2.3 presents the evolution of the share of total post-tax income of the top 10% and of the bottom 50% between 1995 and 2016. As we can see, the differences between share of total incomes (pre and post tax) of top 10% and bottom 50% were increasing relatively slowly between 1995 and 2004 (see also [Biewen and Juhasz, 2012](#); [Biewen et al., 2017](#) and [Grabka and Schröder, 2018](#)). Between 2003 and 2009 a jump occurred: in 2003 the bottom 50% were holding 30.3% of the total post-tax national income, whereas in 2009 this share drop to 26.7%. For the same period, for the top 10%, the share of total income increases from 24,6% to 30,4% . As showed in Figure 2.3, in 2007, for the first time in Germany, the income share of the richest 10% exceeded that of the poorest 50% (see also in this vein [Bach et al., 2013](#); [Bach et al., 2015](#); [Grabka and Schröder, 2018](#); [Samarina and Nguyen, 2019](#) and [Blanchet et al., 2019](#)).

Between 2009 and 2016, inequality levels –in spite of minor fluctuations– have remained relatively stable: the difference between shares of top 10% and bottom 50% remained constant between 2009 and 2016 (respectively 3.7% and 3.6%). Only [Samarina and Nguyen \(2019\)](#) and [Vacas-Soriano et al. \(2019\)](#) reported a slight increasing of inequalities between 2009 and 2015.

### 2.2.2 The drivers of inequality trend

We have established above that the increase of inequalities in Germany are composed of two parts: the increase of the wages disparities and the increase in capital income within the top decile. We are interested in this part, in reviewing the drivers of these inequalities in Germany during the concerned period (1995-2016).

In the literature exploring the factors driving the evolution of inequalities in Germany

in the period 1990-2016, many determinants are identified. The most prominent one is the changes in tax system, especially between 2001 and 2006 lightening taxes on the rich. (see [Bach et al. \(2013\)](#) for a detailed presentation of the tax reforms). As an example, the maximum income tax rate decreased gradually from 51% in 2000 to 42% in 2005. These changes decreased the charges on the rich, and increased the tax on the poor, which lead then to increase of the gap between these two categories (see in that respect [Biewen and Juhasz, 2012](#); [Bach et al., 2013](#) and [Schmid and Stein, 2013](#)).

Another important driver is the structural changes inside the German labor market, characterized by higher wages inequalities due to the increasing number of atypical low-paid jobs, the de-unionization, and the polarization of wages by some occupations in the detriment of others (as showed by [Schmid and Stein, 2013](#) and [Biewen and Juhasz, 2012](#)).

The third factor driving this rise in inequality is the demographic changes happened between 1990 and 2015. Changes that are characterized by a different composition of the household types (smaller households, more single motherhood and single household), and an increase in the employment rate of women relative to men. [Jessen \(2015\)](#) and [Zagel and Breen \(2019\)](#) defend the hypothesis that most of the increase of inequality is due to the changes in the population, while [Biewen and Juhasz \(2012\)](#) and others found that it only have played a minor role.

About the effect of transfer system changes, especially the well-known Hartz reforms between 2003 and 2005, its impact on increasing the gap between the top and bottom incomes groups seems to be largely contested as showed by [Biewen and Juhasz \(2012\)](#), [Jessen \(2015\)](#) and [Zagel and Breen \(2019\)](#). Even it seems that there was no direct effect of these reforms, this does not rule out the possible spillover effects that could create in the market, specially regarding the reactions of the demand side of the market through more part-time jobs and pulling the wages of the low-skilled workers down.

Regarding the impact of the financial crisis in 2009, [Grabka \(2015\)](#) and [Biewen et al. \(2017\)](#) did not find any significant effect on the income distribution in Germany. Be-

sides, [Grabka \(2015\)](#) noted that this financial crisis has helped to stifle the evolution of inequalities by inflicting a severe blow to capital income, which mainly concerns the top decile. As these studies show, other factors have also contributed to the stabilization of the inequality trend shown in [Figure 2.3](#), such as the stagnation of the share of part-time jobs, and the application of a minimum wage by many companies since 2009.

### 2.2.3 Literature on inequality and support for redistribution

The workhorse economic model in economics regarding the relationship between level of inequality and level of demand for redistribution is the model of [Meltzer and Richard \(1981\)](#), where the level of demand for redistribution depends positively on the level of inequality.<sup>3</sup> Since then, many studies have been conducted, with different empirical strategies, to explore this relationship.

The most recurrent and traditional approach is to carry out a cross-country study, by running inter-country (or inter-regional) comparisons on levels of inequality and levels of demand for redistribution (see for example [Lübker, 2007](#); [Finseraas, 2009](#); [Engelhardt and Wagener, 2014](#); [Niehues, 2014](#); [Steele, 2015](#); [Rueda and Stegmüller, 2016](#); [Gimpelson and Treisman, 2018](#) and [Choi, 2019](#) ). The predominant result is that there is a weak relationship between these two indicators: it is not in the most unequal countries that we find the highest levels of demand for redistribution. The main limitation of this approach is the near-impossibility of controlling for the large set of factors that make each country unique, and which are strongly related to the formation of economic preferences. Among these factors we cite political and cultural institutions, the country's history, the ideological foundations, and so on (see [Acemoglu and Robinson, 2013](#) and [Piketty, 2019](#)). Therefore, the empirical validity of these studies remains rather limited.

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<sup>3</sup>Like [Meltzer and Richard \(1981\)](#), [Fehr and Schmidt \(1999\)](#)'s theoretical model also implies a positive relationship between the level of inequality and the level of support for redistribution. [Alesina and Angeletos \(2005\)](#)'s model states the opposite: an increase of income inequalities leads to a decrease of the demand for redistribution.

Another approach that has recently been adopted frequently is the experimental approach. In this group of studies, the individual is exposed to information related to inequalities such as income distribution or social mobility in order to observe his/her reaction regarding his support for redistribution (see for example [Kuziemko et al., 2015](#); [Page and Goldstein, 2016](#); and [Alesina et al., 2018b](#)). These studies have also shown a rather flimsy impact of perceptions of inequality on the demand for redistribution, but they have also led to a better understanding of this relationship: acting in the face of inequalities depends on several other factors such as the individual political affiliation ([Alesina et al., 2018b](#)), the level of trust in government ([Kuziemko et al., 2015](#)), beliefs about the living conditions of the poorest ([Page and Goldstein, 2016](#)), etc. Although this approach has various advantages, its external validity does not remain without limits.

Concerning the longitudinal approach exploring the simultaneous evolution of inequalities and support for government redistribution overtime, we found very few papers adopting this strategy (see for example [Kenworthy and McCall, 2008](#) and [Ashok et al., 2015](#)).<sup>4</sup> The two papers show no significant correlation between changes of inequalities and demand for redistribution. This methodology – like the previous two – also suffers from some drawbacks, especially with regard to the validity of attributing the effect of time to a particular event and not to another. Subsequently, appropriate robustness tests are needed to circumvent these limitations. However, the advantage of such an approach over an inter-country approach is that institutional factors are naturally controlled, and that it is manageable to control for a wide range of economic, ideological and other factors since all individuals live in the same country. In the present paper, we adopt the longitudinal approach, exploring trends in inequality levels and attitudes towards redistributive policies for the period 1995-2017 in Germany.

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<sup>4</sup>The paper of [Ashok et al. \(2015\)](#) is focusing on the United states. The paper of [Kenworthy and McCall \(2008\)](#) focuses on selected developed countries, including West Germany, for the period of the 1980s and 1990s. Our study differs from the latter in a number of ways: the period of study is different, the regions under study (All Germany in our study), the measures of inequalities are based on more recent and advanced measures, the questions revealing the attitudes towards are varied and more precise, the controls are more advanced, a part of the data is panel and finally we devote a section to a heterogeneity analysis of the effect of inequalities on attitudes.

## 2.3 Data

In this paper, we rely on two databases: the European Social Survey (ESS) and the German Socio-Economic Panel (SOEP). The principal advantage of ESS is the possibility to cover the evolution of demand for governmental redistribution for a recent and relatively long period of time with a two-year interval. The SOEP in turn allows us to control the time trend for a large set of factors notably through the sample panel. Furthermore, the two bases cover different aspects of the demand for state intervention in redistribution.

### European Social Survey

*Description.* The European Social Survey (ESS) is a cross-sectional data set carried out every two years since 2002 on a set of European countries. The data are representative of the populations. These surveys provide one of the best-quality cross-national data in Europe on social and political attitudes.<sup>5</sup> We are using all the available data on Germany from 2002 to 2018 (9 waves).

*Dependent variable.* The question used to measure the individual's attitude towards government intervention regarding the reduction of inequality is the following: *Please say to what extent you agree or disagree with each of the following statement: "The government should take measures to reduce differences in income levels" 1. Agree strongly 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Disagree strongly 7. Refusal 8. Don't know 9. No answer.* For ease of interpretation, we recode this question to a binary variable equals to 1 if the individual agree strongly or agree with the statement, and 0 otherwise. Whose refuse, or do not know or have no answer are less than 2% of the total interviewed individuals.

### German Socio Economic Panel

*Description* The German Socio-Economic Panel (SOEP) is a representative longitudinal survey of private households in Germany. The target population is the German adult

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<sup>5</sup>Compared to European Values Survey (EVS) and International Social Survey Programme (ISSP).

population of 1997, 2005 and 2017.

**Panel data.** Even if the SOEP is considered as a Panel data, not all individuals who answered in 2002 are present in the 2017 survey.<sup>6</sup> Among the 23,500 individuals interviewed in 2002, 6881 are interviewed in 2017 (29.2%). This is our target population for the regression analysis. We assume that the panel attrition is randomly happening regarding our dependent variables.<sup>7</sup> However, it is known that the probability of drop-out is correlated with certain determinants of the demand for redistribution like the level of income. Therefore, we use the whole sample to draw our descriptive statistics and we ensure in our regression analysis to control for the appropriate factors.

**Dependant variables.** The questions we are interested in address the attitudes towards the role of the state and the private forces in some financial security areas. The support for intervention state concerning financial security can be considered as one of the important facets of the well-known research issue commonly called the *preferences for redistribution*. The question asked is: “*At present, a multitude of social services are provided not only by the state but also by private free market enterprises, organizations, associations, or private citizens. What is your opinion on this? Who should be responsible for the following areas? 1. Only the State 2. Mostly the state 3. State And private forces 4. Mostly private forces 5. Only private forces*”. There are several available areas but we focus only on the ones related to the financial security system following [Alesina and Fuchs-Schündeln \(2007\)](#). The fields selected are: “financial security of families”, “financial security in case of unemployment”, “financial security in case of illness”, “financial security for old-age” and “financial security when requiring care”.

The amount of missing values is low (around 2%). We recode the questions to binary variables equal to 1 if the individual thinks that is only the state or mostly the state who is responsible for the specified financial security area and 0 if he/she thinks otherwise.

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<sup>6</sup>The reasons for these drop-outs (panel attrition) are well-known in this kind of surveys. The death, the decline to reply, moving abroad are the principal reasons.

<sup>7</sup>We suppose in our analysis that the missing data process is *missing at random*, since it is rather unlikely that the redistributive attitudes are correlated with the probability of non-response.

## 2.4 Descriptive statistics

As shown in the previous section, we have 6 questions referring to individual preferences for government intervention in redistribution. The question provided by the ESS data deals with the reduction of differences between rich and poor, while the five SOEP questions concern several branches of financial security. The two sets of data together cover the period 1997-2018. We intersect the evolution of all these attitudes to come out with a general analysis of the timeline regarding the evolution of preferences for redistribution. The dummy variables used in this part are adopted for more straightforward analysis. We apply the available weights in the computation of all statistics concerning the share of individuals who support or oppose government intervention.

*Description SOEP.* As we can see in the Table 2.1 the support for government intervention in the five areas of financial security has increased significantly between 2002 and 2017: this rise is in the order of 4.17% for the financial security regarding the unemployment, 7.9% regarding the illness system, 11.94% regarding care services, 14,72% regarding the old-age system and 16% regarding families aids. For the period 1997-2002, no trend emerges. Regarding the financial security of families and the elderly, less Germans think that this is the responsibility of the government in 2002 compared to 1997, while the opposite is true for financial security related to health and care, for the financial security related to unemployment the share has remained the same.

*Description ESS.* In Figure 2.2 presented in the introduction, we present the evolution of the German attitudes towards the government intervention in income differences reduction. Between 2002 and 2004, we see a rather stable level of preferences (54.22% and 55.76%), after 2004, the percentage of Germans in favor of redistribution explodes at a steady pace, as we can see in the graph, rising to 73.4% in 2012. After 2012, preferences stabilize around this percentage until 2018.

*Combining the evolutions* If we combine the evolution of preferences concerning the role of the state in redistribution based on the two bases ESS and SOEP, we can iden-

**Table 2.1:** Evolution of attitudes towards the state role regarding the financial security between 1997 and 2017: whole sample (Weighted)

	% Favorable to the state role regarding			
	1997	2002	2017	Evolution [02-07]
Financial security of families	37.34	34.93	40.42	16%
Financial security when unemployed	66.61	66.63	69.41	4.17%
Financial security when sick	39.97	42.76	46.14	7.90%
Financial security for old-age	43.98	40.42	46.37	14.72%
Financial security when requiring care	45.11	47.14	52.77	11.94%

Note: The differences between the proportions are all significant at 1% according to the "Two-sample test of proportions" using the `prtest` Stata command. The target populations are all individuals of the 2002 and 2017 samples. The number of respondents is about 22000 at each wave. All statistics are weighted.

tify three stages. The first stage is the period 1997-2004 with a rather stable level of support for government intervention. The second phase is the period 2004-2012, with an important and stable increase of the share of individuals favorable for government redistribution. The period 2012-2018 constitutes the third phase, with a stabilization of the level of support for redistribution.

**First conclusion.** In figure 2.1 presented in the Introduction, we draw up the evolution of inequalities based on the difference between the top 10% share of national income and the share of the bottom 50%. This then allows us to compare simultaneously the trends of inequalities and demand for redistribution. As can be seen in figures 2.1 and 2.2, the trends are very similar. The sharp increase in inequality began between 2003 and 2004 and ended in 2009, and the substantial rise in support for government intervention – according to the ESS– emerged between 2004 and 2006 and ended in 2012. This is a first evidence on the relationship between inequality and the demand for redistribution. Before this critical period of evolution of inequalities, we notice an ambiguous evolution of the preferences for redistribution in accordance with the weak increase of inequalities. After that, since 2012, we see how the increasing trend of demand for redistribution stabilized, 3 years after the stabilization of inequalities.

Consequently, in this respect, the periods before and after can be considered as control

periods (placebo test). We can clearly define a population reaction time regarding their preferences for redistribution of 2 years for the increase of inequalities, and 3 years for the stabilization of inequalities. The next sections will be devoted to show how robust this relationship is, by controlling for the relevant control variables and conducting the appropriate tests. In fact, rise of inequalities can be accompanied by many changes at the individual level that are also directly related to the individual attitudes towards redistribution and government intervention (like the personal financial situation, the share of low paid wages...). We are interested in separating the direct effects of inequality (as a macro phenomenon) from its indirect effects (through the individual changes).

## 2.5 Empirical strategy

Our empirical analysis proceeds in two principal steps. First, we examine the evolution of demand for redistribution over time, while extensively controlling for a wide range of factors. Second, we test if the evolution of preferences over time is heterogeneous depending on 1) the individual region of residence before 1989 unification (west or east Germany) and 2) the individual financial situation. For ease of interpretation, the dependent variables are all binary variables (1 if the individual is favorable to government intervention and 0 otherwise).

Concerning the first part, we specify an empirical model for each of the two databases, ESS and SOEP. For the ESS data, the baseline specification is a linear probability model (LPM) using robust standard errors to remedy against the heteroscedastic error terms of the following form:<sup>8</sup>

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<sup>8</sup>[Andreß et al. \(2013\)](#) provide explanations and examples when using linear models leads the same results compared to using non-linear models. They argue that it is the case when the distribution of the dependent variable is not too skewed (as are our variables of interest) and when where we are interested on the average marginal effects. We run the same regressions using logit and probit regressions models, and we find systematically that there is almost no difference, neither concerning the width of the effect nor concerning the significance of the effect. The important advantage of using the linear probability model is the easier interpretation of coefficients compared to the logit and probit models. To a more detailed discussion on the "Pooled Linear Probability Model" see the section 5.1.1.1 in [Andreß et al. \(2013\)](#).

$$Govr_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Y + \epsilon_{it} \quad (2.1)$$

where  $Govr_{it}$  corresponds to the demand for government redistribution of individual  $i$  in year  $t$ .  $X_{it}$  is the vector of control variables including age, gender, level of education, the financial situation, the political position and the region of residence.  $Y$  refers to years from 2002 to 2018.

For SOEP data, we specify the following linear probability model accounting for random effects (RE-LPM) using robust standard errors, and using the clustering at the family level (according to the family id) to remedy against the serially correlated error terms.<sup>9</sup>

$$Govf_{it} = \gamma_0 + \gamma_1 C_{it} + \gamma_2 \cdot Y17 + \gamma_3 \cdot N_{it} + a_i + \epsilon_{it} \quad (2.2)$$

Where  $Govf_{it}$  corresponds to the demand for government intervention in financial security areas (Family|Unemployment|Health|Old|Care services) for individual  $i$  year  $t$ .  $C_{it}$  is the vector of control variables including age, gender, level of education, level of income, supported political party and type of employment.  $Y17$  is a dummy variable equals to 1 if individual lives in 2017, and 0 if he/she lives in 2002.  $N_{it}$  denotes a set of under-exploited factors regarding these effects of preferences for redistribution including the level of wealth (measured by the ownership of house and the ownership of financial assets), the level of satisfaction with the social security system, level of satisfaction with social security system, the assessment of own level of financial security and the prospect of own situation regarding unemployment and health.

The second part investigates first if the evolution of preferences for redistribution has followed the same pattern regarding the individual's region of living before 1989 (east or west Germany) relying on SOEP. We specify the following empirical model (RE-LPM):

$$Govf_{it} = \delta_0 + \delta_1 C'_{it} + \delta_2 \cdot Y17 + \delta_3 \cdot EastGer89_i + \delta_4 \cdot Y17 * EastGer89_i + a_i + \epsilon_{it} \quad (2.3)$$

Where  $C'_{it}$  includes all control variables of  $C_{it}$  in equation 2.2 excluding the region of living.  $EastGer89$  is a dummy variable equals to 1 if the individual was living in East

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<sup>9</sup>For an application of this model see [Heineck and Süßmuth \(2013\)](#). We cluster at the family level since there is a considerable part of the respondents who belonging to the same family.

Germany before 1989 and equals to 0 if he/she was living in West Germany before 1989. The interaction term  $Y17 * EastGer89_i$  allows us to measure the convergence of demand for redistribution over time between East and West Germans.

Second, we examine if there is divergence of demand for government redistribution between the most and less affluent across time by estimating the following model (LPM):

$$Govr_{it} = \alpha_0 + \alpha_1 X'_{it} + \alpha_2 Y1218 + \alpha_3 F_{it} + \alpha_4 Y1218 * F_{it} + \epsilon_{it} \quad (2.4)$$

Where  $X'_{it}$  includes all control variables of  $X_{it}$  in equation 2.1 excluding the financial situation.  $Y1218$  is a dummy variable equals to 1 if the individual lives in 2012-2018 and equals to 0 if he/she lives in 2012-2014.  $F_{it}$  denotes the individual financial situation. The interaction term  $Y1218 * F_{it}$  allows us to test if there is any heterogeneous effect of the increased inequality on demand for redistribution over the individual financial situation.

## 2.6 Basic results

After presenting in the section 2.4 the increasing trend of support for government intervention in redistribution in Germany, we conduct a regression analysis in order to 1) control this trend for the most prominent factors, 2) revealing some mediators factors for the impact of inequality and 3) testing the effect of some unexplored variables on the demand for redistribution. For this purpose, we rely first on the ESS samples, and second on the SOEP panel sub-sample (2002-2017).

The control factors of most interest concern the individual level changes occurred during this period that considered as potential determinants of the demand for redistribution evolution. As mentioned in the subsection 2.2.2 on the drivers of inequality, there have been many changes in the German economic situation after 2000: lower unemployment rates, more low-paid jobs, different tax and transfers systems, some demographic changes (smaller families, older population...) and the 2009 financial crisis. Therefore, in our analysis for the time trend, we control for the variables representing the demographic, financial, ideological and occupational individual characteristics.

## European social survey

*Review of determinants.* In Table 2.2, the dependent variable is a dummy variable equals to 1 if the individual agree strongly or agree that the government should take measures to reduce differences in income levels (favorable to redistribution) and 0 if otherwise. In column (1) the only independent variables are the years dummies with the 2002 wave as the reference group. As can be seen, the likelihood of supporting government intervention increases year after year until 2012 (compared to 2002). In column (2) we add the most relevant control variables available : the group of age, the gender, the level of education, the perceived financial situation, the ideological political position (left-right) and the region of residence (East and West Germany). We find, according to literature (see Alesina and La Ferrara, 2005, Fong, 2001, Alesina et al., 2018b), that older, woman, less educated, the poor, leftists, those living in East Germany are more favorable for redistribution compared to their counterparts..

*Time coefficients and evolution* Now we turn to our variables of interest which are the time coefficients. If we take a close look at the magnitude of these coefficients in the column (2) compared to column (1) some insights appear: first the 2006 wave coefficient is smaller after adding the control variables, second the 2008-2018 waves coefficients are slightly higher, what prompts us to look at the factors underpinning these changes. Through a detailed variable-by-variable analysis (not reported), we find out the following: 33% of the increase in support for redistribution in 2006 compared to 2002 can be explained by the more negative perception of the financial situation and the fact that more people are declaring themselves to be politically left-wing. Regarding the changes of 2008, 2010 and 2012 time coefficients values, the improvement of the perceived financial situation seems to have contributed to a slight decline in demand for the redistribution.<sup>10</sup> Beside these minor changes, it can be seen clearly that the time coefficients are still positive, significant and large. We conclude that the increasing trend reported in section 2.4 (between 2006 and 2012) seems to be weakly affected by changes at the individual level.

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<sup>10</sup>In fact, the data show a net degradation of the perceived financial situation in 2006 compared to 2002, and a slight improvement in the perceived financial situation of Germans in the years after 2006 compared to 2002.

**Table 2.2:** Analysis of demand for government redistribution (ESS)

	(1)	(2)	(3)	(4)
<b>Years</b>				
2004	0.0118	0.00857		
2006	0.0625***	0.0454***		
2008	0.104***	0.110***		
2010	0.131***	0.137***		
2012	0.189***	0.201***		
2014	0.171***	0.190***		
2016	0.178***	0.206***	0.0938***	0.0597***
2018	0.202***	0.217***		
<b>Age (Reference: 15-29)</b>				
30-49		-0.00606	0.0365*	0.0456**
50-64		0.0107	0.0221	0.0188
>64		0.0567***	0.0714***	0.0698***
Woman		0.0325***	0.00766	-0.00644
<b>Education</b>				
Secondary		0.00199	0.0249	0.0319
First tertiary		-0.0561***	-0.0454*	-0.0334
Second tertiary		-0.0908***	-0.0586**	-0.0585**
<b>Conditions living</b>				
Average		-0.0587***	-0.0168	-0.0180
Good		-0.116***	-0.0923**	-0.0781**
Very Good		-0.201***	-0.162***	-0.132***
<b>Political position</b>				
Center		-0.109***	-0.113***	-0.0651***
Right		-0.189***	-0.228***	-0.154***
Living in East Germany		0.157***	0.136***	0.121***
<b>Attitudes to diff in incomes</b>				
				0
Not acceptable				-0.0477**
Neither				-0.177***
Acceptable				-0.289***
Very acceptable				-0.479***
Constant	0.537***	0.728***	0.791***	0.972***
Observations	23590	23485	5216	5198
$R^2$	0.023	0.089	0.068	0.133

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

The dependent variable refers to the attitudes towards government intervention in reducing inequalities. The reference category for the categorical variables included in the table are respectively: 2002 year for columns 1 and 2, and the 2008 year for columns 3 and 4; those between the ages of 15 and 29; men; the less educated; the less affluent; leftist, whose living in West Germany; the most averse to large differences in incomes.

## **Aversion to large incomes differences as mediator of the effect of levels of inequality on demand for redistribution**

The relationship between the levels of inequality and the individual position towards the government intervention in redistribution can pass through several mediating factors. One of them is the inequality aversion (as an ideological position): higher inequality level can lead to a change of the principles of justice at the individual level (see [Sachweh and Sthamer, 2019](#)). In ESS questionnaires, the following question is asked in 2008 and 2016 covering a dimension of the inequality aversion: "*Please say how much you agree or disagree with the following statement: Large differences in people's incomes are acceptable to properly reward differences in talents and efforts. 1.Agree strongly 2.Agree 3.Neither agree nor disagree 4.Disagree 5.Disagree strongly 7.Refusal 8.Don't know 9.No answer.*"<sup>11</sup>

We see in column (3) of the Table [2.2](#) –controlling for the basic factors– that individual living in 2016 is 9.38% more likely to support government intervention in redistribution compared to an individual living in 2008. In column (4) of the Table [2.2](#), we add the inequality aversion variable: as expected being averse to large differences in income is strongly correlated –more than any other variable– to the attitudes towards government intervention. Most importantly is the net decrease of the time coefficient (from 9.38% to 5.97%): 36.35% of the evolution of preferences for redistribution in Germany between 2008 and 2016 is explained by a greater aversion to large income differences. In fact, while in 2008, 60% of Germans tolerated large differences in income, this proportion fell to 50% in 2016.

## **German Socio Economic Panel**

*Review of determinants.* Based on the 2002-2017 panel sub-sample as presented in the Data section, we regress the five dependent variables regarding the attitudes towards the government responsibility in the five financial security areas on a chosen set of control variables. The control variables cover some individual potential factors that could lead to the evolution of preferences between 2002 and 2017. In *Part\_A* of table [2.3](#), we only

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<sup>11</sup>The question of the acceptable levels of income difference has been an important topic of discussion during this period in Europe (see [Piketty, 2019](#)).

**Table 2.3:** Evolution of preferences with basic controls

	(1) Family	(2) Unemployment	(3) Health	(4) Old	(5) Care
<i>Basic controls</i>			<i>Part_A</i>		
2017	0.0673***	0.0534***	0.0795***	0.103***	0.0849***
Constant	0.416***	0.720***	0.481***	0.516***	0.599***
Controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	12923	12942	12968	12977	12977
R <sup>2</sup>	0.0321	0.0228	0.0422	0.0465	0.0314
<i>Additional controls</i>			<i>Part_B</i>		
2017	0.0745***	0.0590***	0.0815***	0.0994***	0.0900***
House owners	-0.00697	-0.0134	-0.00324	-0.0295***	-0.0188*
<b>Ownership of financial assets</b>					
Low value fin assets	0.00660	0.0400***	0.00338	-0.00206	0.0166
High value fin assets	-0.0522***	-0.0119	-0.0418***	-0.0543***	-0.0515***
<b>Type of employment</b>					
Part time	0.00909	0.0326***	-0.000986	0.00207	-0.0197
Not working	0.0469***	0.0285	0.0203	0.0235*	0.0195
<b>Satisfaction with social security system</b>					
Satisfied	-0.00193	-0.00201	-0.0292*	-0.00683	0.0250
Moderately Satisfied	0.0124	-0.00687	-0.0150	0.00836	0.0402**
Not satisfied	0.0519***	0.0246	0.0189	0.0454**	0.0809***
Not satisfied at all	0.0783***	-0.00366	0.0121	0.0593**	0.0904***
<b>Assessment of financial security regarding unemployment</b>					
Fair		0.0180			
Bad/very bad		0.0486***			
<b>Worrying about job security</b>					
Somewhat concerned		-0.0423**			
Very concerned		-0.0565***			
<b>Assessment of financial security regarding illness</b>					
Fair			0.0242**		
Bad/Very bad			0.0509***		
<b>Worrying about own health</b>					
Somewhat concerned			0.0221**		
Very concerned			0.0532***		
<b>Assessment of financial security regarding old age</b>					
Somewhat concerned				0.0530***	
Very concerned				0.128***	
<b>Assessment of financial security regarding care services</b>					
Somewhat concerned					0.0312**
Very concerned					0.0892***
Constant	0.359***	0.703***	0.444***	0.376***	0.473***
Controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	12835	12136	12801	12810	12798
R <sup>2</sup>	0.0396	0.0294	0.0486	0.0662	0.0449

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

In column (1) the dependent variable refers to the attitudes towards government intervention in financial security regarding families. In column (2) the dependent variable refers to the attitudes towards government intervention in financial security regarding unemployment. In column (3) the dependent variable refers to the attitudes towards government intervention in financial security regarding illness. In column (4) the dependent variable refers to the attitudes towards government intervention in financial security regarding old-age. In column (5) the dependent variable refers to the attitudes towards government intervention in financial security regarding care services. The set of controls include: region of residence (East or West Germany); age; gender; level of education; level of income (income quintile) and the supported political party.

include the basic control variables (as discussed in equation 2.2). In *Part\_B* of table 2.3, we add a set of under-explored factors in order to estimate their effects of preferences for redistribution.<sup>12</sup> As we can see in *Part\_B* of Table 2.3, those who own high-value financial assets are less likely to support government implication on four of the five financial security areas compared to their counterparts.

We test also the effects of the perception of the social security system and the assessment of own financial security. Respondents are asked about the degree of satisfaction with the social security system and about the assessment of their owns financial security regarding unemployment, sickness, old-age and the care services (Very good-Good-Fair-Poor-Bad). The Table shows a positive relationship between being dissatisfied with the social security system and being favorable to the government implication in financial security. We find also that being financially insecure regarding unemployment enhance the probability to support state intervention regarding financial security in unemployment area, the same goes for the correlation between the perception of the financial security regarding sickness, old age, and care services and the attitudes towards state implication in financial security on these respective areas. Whose assessing financial security regarding unemployment, health, old age and care services as bad or very bad are respectively 5.62%, 6.73%, 10.4% and 10.3% more likely to support state intervention compared to whose considering it as Good or Very Good. We find also as expected that those worried about job security and own health are more likely to believe that it is the government responsibility to provide the financial security services compared to their counterparts. This result is in line with the studies exploring the link between income mobility and preferences for redistribution [Alesina et al. \(2018b\)](#).

***Time coefficients and evolution.*** We focus now on the time coefficients values in *Part\_A* and *Part\_B* of the table 2.3. We find clearly that time coefficients remain essentially the same, positive and strongly significant, which means that the demand for

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<sup>12</sup>*Rule of decision:* since all five variables revolve around government intervention in people's financial security, we establish a rule of decision to define if the factor studied can be considered as determinant of support for state redistribution or not: if the effect of the factor is significant on 3 of the 5 dependent variables, then it is defined as determinant.

**Table 2.4:** Convergence between East and West (89 (SOEP))

	(1) Family	(2) Unemployment	(3) Health	(4) Old	(5) Care
Living in East Germany in 1989	0.125***	0.110***	0.138***	0.0974***	0.0873***
Living in 2017 (2002 as ref)	0.0643***	0.0656***	0.0861***	0.0999***	0.0867***
East_89*Living in 2017	-0.00692	-0.0476***	-0.0364*	-0.00372	-0.0216
Observations	12656	12677	12704	12710	12713

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

All regressions are controlled for the same variables as *Part\_A* of the table 2.3.

government intervention has increased between 2002 and 2017 in Germany and that the largest part of this evolution is not explained by the factors we control for. These factors allow us particularly to control for the evolution of people economic expectations and the changes occurred to the transfer and social security systems in this period (from the citizens' perspective).

## 2.7 Heterogeneous analysis

In this section we run a differential analysis of preferences evolution over the individual location in 1989 following [Alesina and Fuchs-Schündeln \(2007\)](#) study and over the income groups.

### 2.7.1 Alesina's Prediction on the convergence of preferences between East and West Germany

*Review of [Alesina and Fuchs-Schündeln \(2007\)](#) results.* [Alesina and Fuchs-Schündeln \(2007\)](#) found that in 1997 and 2002, East Germans are more likely to support state intervention in financial security areas than West Germans. They explain this difference by the fact that East Germany was under communist rule for 30 years, which impacted people's preferences. However, they found that over time (between 1997 and 2002) this difference become smaller since the interaction term of lived in 1989 in East German and the time variable is significantly negative. Taking into account that the evolution of support for role state in East German is negative, they describe this trend as

a convergence for the East German's preferences towards those of West Germans. They suppose that this convergence will continue until complete uniformity since the two parts of Germany are under the same political and economic institutions. According to their calculations, a full uniformity of views will occur in 11 years for the attitudes towards the state implication regarding the care policies and 35 years regarding health policies and between these two periods for the three others.

*Method.* We test this empirical prediction 15 years after by computing the same interaction term (Year\*Living in East Germany before 1989) using our panel sub-sample for the two years 2002 and 2017 applied the same configurations presented in equation 2.3. We run also robustness checks using exactly the same specifications and the same control variables as [Alesina and Fuchs-Schündeln \(2007\)](#).

*Our results.* At first sight, as we can see in Table 2.4, the interaction terms regarding the evolution of preferences over the region of residence in 1989 display negative signs. But if we look at the significance of the coefficients, we find that three of the five interaction terms are not statistically significant, only the interaction term regarding the financial security of unemployment is strongly significant. This means that the difference between East and West Germany regarding the support for governmental redistribution did not increase for three of the five attitudes between 2002 and 2017.<sup>13</sup> Using the same model specifications used in [Alesina and Fuchs-Schündeln \(2007\)](#), we have qualitatively the same results (see Tables 2.7 and 2.8).<sup>14</sup>

Now we turn to the size of the coefficients, to compare [Alesina and Fuchs-Schündeln \(2007\)](#)'s empirical predictions with what actually happened between 2002 and 2017. We find that the predictions of Alesina are very far from what we obtain concerning the

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<sup>13</sup>We obtain similar results using the actual region for residence instead of the place of living in 1989 (since they are very highly correlated).

<sup>14</sup>In [Alesina and Fuchs-Schündeln \(2007\)](#) sample, only individuals belonging to the sub-sample 1 (original West German sample) and the sub-sample 3 (first East German sample) are kept. The control variables are age, education level, gender, number of children number of adults, the marital status, the log of income and the occupational position.

period 2002-2017. As an example, [Alesina and Fuchs-Schündeln \(2007\)](#) predicted full convergence between East and West in 11 years regarding the like-hood of supporting support for state involvement in care policies, while our results indicate –15 years after– nearly no convergence at all. Except for the attitudes towards role state on unemployment policies where there is a relatively high level of convergence in 15 years (66.38%), the levels of convergences for the four others are very low compared to the ones computed on the basis of the period 1997-2002 by [Alesina and Fuchs-Schündeln \(2007\)](#). According to our calculations, based in what happened between 2002 and 2017, full convergence of the 5 items will be reached (from 2017) respectively in 91, 22, 70, 63 and 141 years <sup>15</sup>.

The second important observation is that between 2002 and 2017, in contrast to what happened between 1997 and 2002 when the level of demand for state intervention decreased in East Germany, the support for state implication on financial security policies increased greatly in both East and West Germanies (except for the financial security regarding unemployment in East Germany where the level almost did not change<sup>16</sup>). We conclude that the path of convergence presented by [Alesina and Fuchs-Schündeln \(2007\)](#) does not occur as expected (15 years after), and that other path of evolution of preferences took place.

## 2.7.2 Convergence of preferences of most affluent towards those of the less affluent

In this part, we study the heterogeneity of evolution of preferences for government intervention in redistribution depending on the individual economic situation. In ESS data, two variables measure the individual’s financial situation: the first one describes the financial situation perceived by the individual, and the second informs us about the income decile the individual belongs to. The last variable it is only available from 2008 onwards. We start with the perceived financial situation (Table 2.5), running three separate regressions according to the individual’s living conditions (if the person is living with great

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<sup>15</sup>The path of convergence is even –much– slower for the sub-sample used in [Alesina and Fuchs-Schündeln \(2007\)](#).

<sup>16</sup>Probably because the already high level of support of 75%.

financial difficulties), or correctly, or is comfortable with his or her current income). The controls variables are the same as the ones used in column 2 of Table 2.2 except of the time coefficient, which is reduced to a binary variable (equals to 0 if the individual is living in 2002-2004 and 1 if he is living in 2012-2018). In Table 2.6, we proceed in the same way but this time according to income deciles (whether the individual belongs to the bottom 50%, the top 20% or between these two groups) and focusing on the evolution occurred between 2008 and 2012-2018 period. The results reported in Tables 2.5 and 2.6 show an heterogeneous evolution of preferences: the increasing support for redistribution is stronger among the affluent (top incomes) compared to the others.<sup>17</sup>

**Table 2.5:** Evolution of preferences over financial situation groups (ESS)

	(1) Less fortunate	(2) Middle	(3) Affluent
Reference: 2002-2004			
2012-2018	0.158***	0.190***	0.214***
Observations	1892	7915	5905
$R^2$	0.064	0.085	0.089

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

All regressions are controlled for the same variables as the column 2 of the Table 2.2.

**Table 2.6:** Evolution of preferences over incomes groups (ESS)

	(1) Bottom 50%	(2) Deciles 6-7-8	(3) Top 20%
Reference: 2008			
2012-2018	0.0671***	0.130***	0.161***
Observations	5658	3696	2295
$R^2$	0.039	0.051	0.068

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

All regressions are controlled for the same variables as the column 2 of the Table 2.2.

<sup>17</sup>The interaction terms as presented in equation 2.4 are statistically significant. Similar results are found using the SOEP data (not reported).

## 2.8 Conclusion

As [Saez and Zucman \(2019\)](#) and [Piketty \(2019\)](#) documented in their latest books, recent years have been characterized by a rise in hyper-capitalism and the retreat of the social democratic model, especially in Western countries, with lower and lower tax rates on the richer, and a market system that favors wage inequalities. Reforms that have contributed to a further widening of the gap between rich and poor. Germany, through its recent economic events, can be considered a representative example of these developments.

The principal finding is that the demand for state intervention redistribution moves upwards as inequality increases, and also stabilizes as inequality stabilizes. An evolution of preferences due in part to a change in the principles of justice, namely a greater aversion to large income differences. This finding We find also that this evolution of support for state intervention in redistribution happens with the same intensity in East and West Germany, despite the fact that the East Germans lived under communist institutions for several decades.

Among our results, one finding stands out from the rest, disagreeing with the predictions of most theoretical models on the relationship between inequality and the preferred level of redistribution. In fact, [Meltzer and Richard \(1981\)](#), [Fehr and Schmidt \(1999\)](#), and [Alesina and Angeletos \(2005\)](#) state, regarding the nature of the impact of levels of inequality on demand for redistribution, that there is a positive interaction between the individual's financial situation and the level of inequality. This implies that in response to higher levels of inequality, the demand for redistribution increases most strongly among the less affluent.

Our results suggest the opposite: the positive impact of rising inequality on support for redistribution is stronger among the rich compared to their counterparts.<sup>18</sup> This result is in accordance with the "income-dependent altruism" model of [Dimick et al. \(2014\)](#),

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<sup>18</sup>See [Dimick et al. \(2018\)](#) for a discussion about the theoretical implications of [Meltzer and Richard \(1981\)](#), [Fehr and Schmidt \(1999\)](#), [Alesina and Angeletos \(2005\)](#) and [Dimick et al. \(2014\)](#) models of demand for redistribution assuming a direct impact of inequality on these preferences.

incorporating the altruism as a motivation concerning the formation of preferences for redistributing.<sup>19</sup> Their model implies that a that rising of inequalities have a positive effect on the preferred level of redistribution, an impact that increases with individual income. Therefore, the other-regarding motivation appear as a potential explanation for convergences of preferences in Germany following the evolution of inequalities.

All these results –based on a longitudinal approach– highlight (again) the relationship between the level of inequality and the demand for redistribution, but with different explanations from those presented in the literature. The channel of financial interest seems to be the least relevant, leaving room for other factors such as altruism. This paper thus challenges us in future research to dig deeper into the mechanisms behind this relationship so much debated in the literature.

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<sup>19</sup>They also provide empirical evidence in USA showing that the rich are more favorable for redistribution in USA states where inequality is higher.

# Appendix

**Table 2.7:** Basic regressions Alesina Original Specification OLS

	(1)	(2)	(3)	(4)	(5)
	ppr_family_2	ppr_unemp_2	ppr_sick_2	ppr_old_2	ppr_care_2
1.East_89	0.125***	0.107***	0.109***	0.110***	0.0847***
Living in 2017 (2002 as ref)	0.0733***	0.0715***	0.0903***	0.116***	0.120***
1.East_89*Living in 2017 (2002 as ref)	-0.00636	-0.0434**	-0.00991	-0.00797	-0.0245
ager	-0.000423	-0.00716	0.0128*	-0.000229	-0.00140
ager2	0.0000121	0.000165	-0.000223*	0.0000306	-0.000000654
ager3	-0.000000188	-0.00000123*	0.00000111	-0.000000327	-1.90e - 08
2.Education_level	-0.00942	-0.0156	-0.0171	-0.0275*	-0.0238*
3.Education_level	0.00195	-0.0412***	-0.0604***	-0.0646***	-0.0346**
1.Woman	-0.00989	0.00746	0.0148	-0.0129	-0.0143
Num_Children	0.0261***	0.0123*	0.00973	0.0149**	0.00725
Num_adults	0.00527	0.00593	0.0334***	0.0305***	0.0188**
2.Marital_status	-0.00328	-0.0239	-0.0293*	-0.0180	-0.0343**
3.Marital_status	-0.00916	-0.0191	-0.0156	-0.0137	-0.00988
log_HH_income	-0.0633***	-0.0630***	-0.102***	-0.108***	-0.0757***
2.Occu_position_4	0.0462***	0.0262*	0.00122	-0.0193	0.00164
3.Occu_position_4	0.0395**	0.0206	0.00357	-0.0149	-0.000261
4.Occu_position_4	-0.0802***	-0.0812***	-0.0717***	-0.0986***	-0.0672***
Constant	0.967***	1.406***	1.193***	1.442***	1.285***
Observations	11809	11821	11829	11844	11847
Pseudo R <sup>2</sup>					

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

**Table 2.8:** Basic regressions Alesina Original Specification Probit

	(1)	(2)	(3)	(4)	(5)
	ppr_family_2	ppr_unemp_2	ppr_sick_2	ppr_old_2	ppr_care_2
main					
Living in 2017 (2002 as ref)	0.202***	0.202***	0.236***	0.307***	0.305***
1.East_89	0.331***	0.318***	0.280***	0.286***	0.214***
Living in 2017 (2002 as ref)*1.East_89	-0.0274	-0.122**	-0.0285	-0.0277	-0.0610
ager	-0.000672	-0.0214	0.0331*	-0.000338	-0.00329
ager2	0.0000212	0.000493	-0.000579*	0.0000733	-0.00000677
ager3	-0.000000429	-0.00000368*	0.00000290	-0.000000806	-1.95e - 08
2.Education_level	-0.0256	-0.0456	-0.0432	-0.0705*	-0.0602*
3.Education_level	0.00546	-0.120***	-0.156***	-0.169***	-0.0874**
1.Woman	-0.0264	0.0200	0.0392	-0.0330	-0.0364
Num_Children	0.0701***	0.0360*	0.0254	0.0395**	0.0184
Num_adults	0.0150	0.0166	0.0879***	0.0821***	0.0484**
2.Marital_status	-0.00922	-0.0688	-0.0772*	-0.0470	-0.0871**
3.Marital_status	-0.0260	-0.0557	-0.0413	-0.0364	-0.0252
log_HH_income	-0.172***	-0.184***	-0.267***	-0.288***	-0.194***
2.Occu_position_4	0.120***	0.0828*	0.00166	-0.0530	0.00399
3.Occu_position_4	0.105**	0.0614	0.00813	-0.0414	-0.000617
4.Occu_position_4	-0.232***	-0.218***	-0.195***	-0.278***	-0.173***
Constant	1.284***	2.598***	1.826***	2.506***	2.010***
Observations	11809	11821	11829	11844	11847
Pseudo R <sup>2</sup>	0.023	0.021	0.023	0.027	0.015

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

## Chapter 3

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

### Résumé en Français<sup>1</sup>

Cet article examine l'effet de la révolution qui a eu lieu en janvier 2011 en Égypte sur la demande pour la redistribution dans ce pays, qui a considérablement augmenté depuis cette période. Ce choc a été un événement important, renforçant les libertés et la structure politique. Dans un premier temps, en tenant compte des principaux déterminants des préférences pour la redistribution dans la littérature, nos résultats diffèrent, montrant un impact positif de la religion et un impact négatif des attitudes altruistes. Dans un deuxième temps, nous nous appuyons sur une approche de diff-in-diff pour évaluer l'effet de la révolution en utilisant trois pays similaires comme groupe de contrôle. Nous constatons que les Égyptiens sont devenus beaucoup plus favorables à la redistribution après le printemps arabe. De plus, l'effet de la révolution est plus fort chez les plus pauvres et ceux qui s'intéressent à la politique.

### English Abstract

This paper investigates the effect of the revolution that occurred in January 2011 in Egypt on the demand for redistribution in that country, which has drastically increased since that period. This shock has been an important event, enhancing freedom and the

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<sup>1</sup>This chapter was published in "*Review of income and wealth*" (2019) with A.Volle.

political structure. In a first step, taking into account the main determinants of preferences for redistribution in the literature, our results differ, showing a positive impact of religion and a negative impact of altruistic attitudes. In a second step, we rely on a difference-in-differences approach to estimate the effect of the revolution using three similar countries as a control group. 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.

### 3.1 Introduction

The attitude towards differences in incomes – like a large set of preferences – has always encompassed an important political dimension. The usual practice in explaining the different levels of support for redistribution across countries and over time is to look principally for economic indicators. Nevertheless, several papers stress the importance of political institutions in shaping a large set of citizen preferences: [Schl pfer et al. \(2008\)](#) showed how political institutions participate in shaping citizen preferences for public goods, while [Druckman and Lupia \(2000\)](#) in turn described the literature clarifying how parties and campaigns affect political preferences. [Madestam and Yanagizawa-Drott \(2012\)](#) showed how a political and social event like the Fourth of July celebrations in the United States impacted individual political preferences. On the side of preferences for redistribution, there is little empirical evidence exploring the relationship between the political context and formation of support for redistribution.<sup>2</sup>

This paper explores the reasons for the considerable shift in individual attitudes towards redistribution in Egypt following the 2011 Egyptian Revolution, when – in a very short period of time – major changes to the political and freedom scenes occurred. We rely on World Values Survey data to track the demand for redistribution, and to capture the impact of the revolution by controlling the effect of time for the appropriate factors. We see in [Figure 3.1](#) that the distribution of the variable presenting the demand

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<sup>2</sup>For example, [Alesina and Fuchs-Sch ndeln \(2007\)](#) have examined the impact of the political regime on preferences for redistribution by exploiting the effect of living under the communist regime in East Germany.

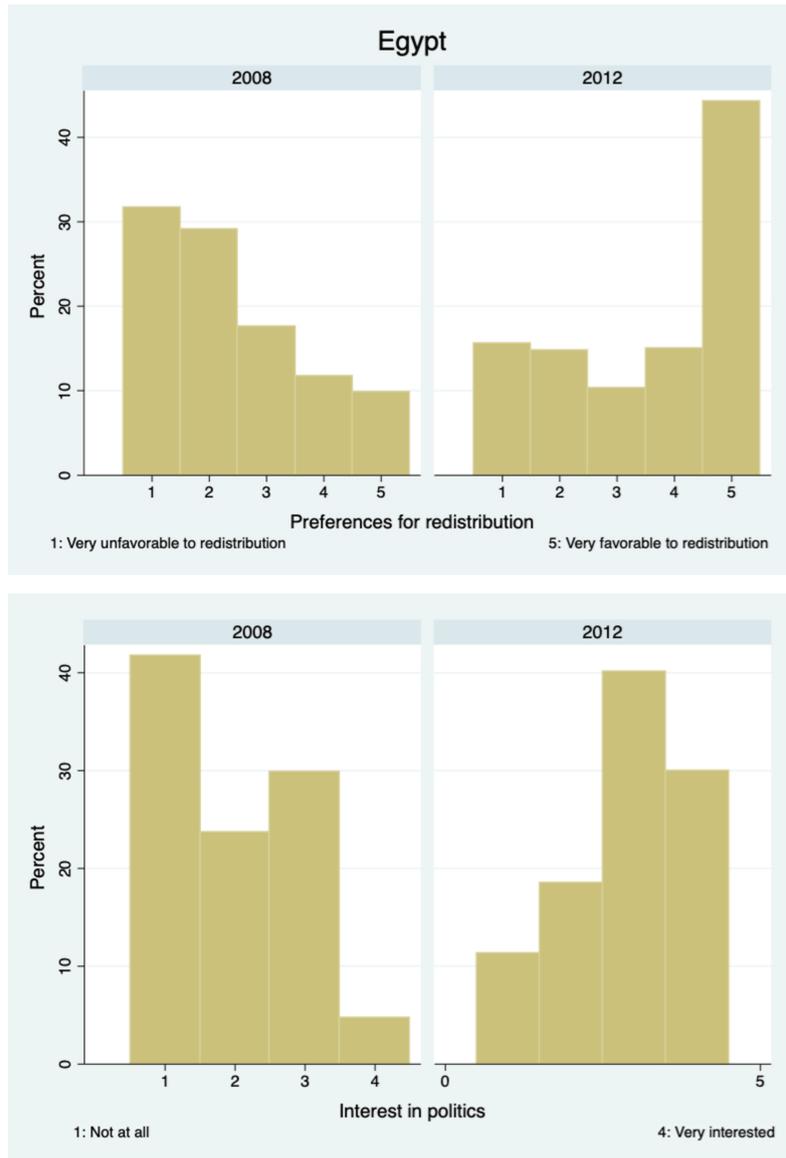
for redistribution changed drastically between the two periods. Based on World Values Survey (WVS) data, 22% of the Egyptian population was in favor of redistribution in 2008; this percentage rose to 59 % in 2012. The 25 January revolution was part of the Arab Spring, a revolutionary wave bearing several democratic ideas that started on 17 December 2010 in Tunisia and spread in different forms to many Arab countries, among them Egypt, Yemen, Libya, Morocco, Jordan and Lebanon. In Egypt, where the most popular slogan was “Bread, freedom, social justice”, the revolution succeeded, the political regime changed, and many shifts occurred at the freedom and political levels.

Along with studying the change in redistributive attitudes following the revolution, we examine – in a holistic way – the structure of the determinants of these attitudes in Egypt and in some other Arab countries, especially compared to the Occident. While the comparison between Europe and the United States was the prevailing one until recently (Alesina and Angeletos, 2005; Alesina et al., 2001) , few studies take into account the specificities of other regions in the world (see Iida (2015) for a comparison of China and Japan). This paper is the first, to the best of our knowledge, to explore the subject of demand for redistribution within the Middle East and North Africa (MENA) region. The Arab world has some characteristics differentiating it from the developed countries usually studied. In the first place, regarding the political situation, Arab countries are considered to this day the most repressive regimes in the world, always having the worst rankings in all freedom components (Elbadawi and Makdisi, 2010).<sup>3</sup> In the second place, the whole structure of Arab culture has many specificities, notably in aspects like the particular place of religion, the relation between citizens and government, and the vital role of charitable organizations – all of which could contribute to shaping social preferences differently from other well-studied developed countries (Teti et al., 2017).

Our keys findings are as follows. The increasing Egyptian support for redistribution one year and half after the revolution is not explained by any of the classical determinants we control for, which asserts the role of the political landscape and the freedom situation on the formation of preferences for redistribution. Through a diff-in-diff approach taking into account 3 countries sharing important characteristics with Egypt, we show that this

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<sup>3</sup>See also the Freedom House 2018 report [https://freedomhouse.org/sites/default/files/FH\\_FITW\\_Report\\_2018\\_Final\\_SinglePage.pdf](https://freedomhouse.org/sites/default/files/FH_FITW_Report_2018_Final_SinglePage.pdf) [accessed July 15 2019]



**Figure 3.1:** Evolution of support for redistribution and the interest in politics in Egypt between 2008 and 2012

enhancement is not explained by an “Arab trend”. Through a heterogeneous analysis we show that the influence of the revolution appears to be stronger only for better-off individuals and for those most interested in politics; elsewhere the effect of the revolution seems to be largely homogeneous. The other important principal finding is about the structure of determinants of demand for redistribution in Egypt and the MENA Region. For Egypt, we obtain considerable similarities with the findings in the literature, especially concerning the self-interest factors; for example, a better financial situation decreases support for redistribution. However, we also uncover some particularities, like the positive effect of religion and the negative effect of being altruistic on preferences for redistribution. These results differ between the Arab countries, indicating the presence of disparities even inside this region regarding the formation of attitudes towards redistribution.

This study joins the growing literature on what shapes and develops preferences for redistribution. As shown in the World Inequality Report (W.I.R), 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., 2018b). Understanding the formation and evolution of *preferences for redistribution* is a key topic in the fight against these inequalities. At the micro level, we consider a large set of factors, such as socio-economic position, ideological spectrum, psychological profile, and many others (Alesina and Giuliano, 2009; Corneo and Grüner, 2002; Fong, 2001). At the macro level, scholars have examined the role of some important economic indicators in explaining differences between countries and over time regarding support for redistribution. As examples we count experiences of economic crises (Kroeger, 2014; Margalit, 2013; Olivera, 2014), levels of inequality (Kerr, 2014; Roth and Wohlfart, 2016), levels of social mobility (Alesina et al., 2018a) , and immigration waves (Alesina et al., 2018a; Dahlberg et al., 2012). Our contribution to this research is twofold. First, we shed light on the important role of political institutions and the freedom situation through the shock that happened in Egypt. Second, we provide an analysis of the determinants of preferences for redistribution for some MENA countries.

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 chosen to obtain the results we are looking for. Section 5 presents all results concerning the determinants of demand for redistribution in Egypt, the effect of revolution controlling for these factors, the effect of revolution controlling for the Arab trend, and the differential effect of revolution. In Section 6, we discuss the nature of the shock that occurred in Egypt and the most prevalent related criticisms. Finally, Section 7 concludes.

## 3.2 Context: The Egyptian Revolution in 2011

**Events and claims.** January 25, 2011, can be considered the effective start date of the Egyptian revolution. During the six months before, several events had triggered the popular uprising. On June 6, 2010, the death of Khaled Saïd in police custody received broad press coverage, sparking a rising clamor of indignation in society. Then, the Egyptian parliamentary elections that took place at the end of 2010 were described by human rights groups as the “most fraudulent poll ever” in Egypt’s history. Indeed, 91% of seats were won by Mubarak’s National Democratic Party (NDP). On January 1, one of the most prestigious Coptic churches was the target of a violent bombing (the so-called Alexandria Bombing). On January 6, another story of death by torture in the buildings of the State Security Investigations Services (the highest national internal security authority in Egypt) renewed the anger that had followed Khaled Saïd’s tragic death.

The success of the Tunisian revolution in January 14 was one of the trigger components of the Egyptian revolution, which gave Egyptians a hope for change. Four days after, four individuals self-immolated, imitating what happened in Tunisia at the start of the Tunisian revolution. This chain of events led to a very sharp decrease in the life satisfaction indicator among Egyptians during this period [Devarajan and Ianchovichina \(2018\)](#), which was the breeding ground of the revolution.

On January 25, 2011, opposition groups – among them the “April 6 youth movement” – called for a “Day of Anger” protest. The Facebook page entitled “We are all Khaled Saïd” was a flagship of these protest groups. Demonstrations were held in different cities, drawing Egyptians from all social spheres ([Bishara, 2009](#); [Costello et al., 2015](#)). The major claims were to restore human dignity and to reverse restrictions on civil liberties

(Dabashi, 2012; Telhami, 2013). The quick mushrooming of this movement in Egypt, compared to other Arab countries, can be explained by the violent way the Egyptian government responded to these demonstrations (Costello et al., 2015), illustrated by a high number of imprisoned persons and deaths during the first days. After 16 days of demonstrations, Hosni Mubarak resigned as president.

This revolution coincided 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, such as Morocco and Jordan, similar demonstrations have been held with very close demands and motivations, but without a real change in the political landscape. The success of the Egyptian revolution was the beginning of a series of changes regarding the social and political life of Egyptian citizens.

**An improving economic situation in the early 2000s.** Contrary to what might be expected, most economic indicators were improving from 2000 to 2011 (Giesing and Musić, 2019). From 2004 to the eve of the Egyptian revolution, the growth rate was always positive and quite high (between 4.09% and 7.15%). Equivalently, income inequality slightly decreased between 2004 and 2010 (Gini index<sup>4</sup> from 31.9 to 31.5) and the Human Development Index<sup>5</sup> slightly increased (from 0.63 in 2005 to 0.68 in 2010).

Nevertheless, the demographic shock – between 1966 and 2011, the population jumped from 30 million inhabitants to 80 million – has created an important burden for the government to finance the social security system (Giesing and Musić, 2019). Due to its communist past, this system is fairly well developed, as the state subsidies, for instance, food and fuel and covers a large part of health insurance. The quality of these services has somewhat deteriorated as a consequence of the demographic shock, as well as the high level of corruption.

Notice also that, in the few months after the revolution, the economic situation was damaged but showed no significant impact on individuals’ perceptions of their own financial situations (Abdou et al., 2013). In our data, the percentage of individuals unsatisfied

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<sup>4</sup>World Bank 2018: <https://datacatalog.worldbank.org/dataset/world-development-indicators> [accessed July 15 2019]

<sup>5</sup>United Nation Development Programme: <http://hdr.undp.org/en/countries/profiles/EGY> [accessed July 15 2019]

(or very unsatisfied) with their financial situation remained stable (from 42% in 2008 to 44% in 2012).

**Determinants of the protests.** The determinants of the popular uprising in the Arab world in the 2010s have been investigated by many scholars. There is a consensus that, in the case of Egypt compared to other Arab countries, economic factors and inequalities played a very limited role. [Devarajan and Ianchovichina \(2018\)](#) even discussed an “Arab inequality puzzle” when describing this phenomenon and put forward the notion of a broken social contract in Egypt, related to a sharp decrease in overall satisfaction. [Costello et al. \(2015\)](#) found limited support of the “bread” explanations and claimed that the strongest predictor was political terror.

**Profound changes in the political landscape and in the interest in politics.** Before the uprising only one political party – authoritarian and centrist – really existed: the National Democratic Party (NDP), presented as a single party ([El-Mikawy, 1999](#)). As an example of authoritarianism, the emergency law was maintained during the entire duration of the Mubarak presidency.

A few months after the revolution, many political parties were created with different economic and ideological programs. These new parties succeeded very well in the legislative elections at the end of 2011 and in early 2012, collecting more than 80% of the votes cast. Moreover, the electoral turnout rate was very high (62%) compared to the 2010 legislative election (at 27.47%). In 2012, for the first time in the history in Egypt, a presidential election that met current international standards was held, again with a very high turnout (51.85% in 2012, compared to 22.95% in 2005). In addition, there was one referendum as well as consultative council elections. In just two years (2011 and 2012), Egyptian citizens were involved in 3 democratic events, and 2012 saw the end of the 30-year state of emergency.

The high electoral turnout illustrates the deep change in voting behavior in this country. This pattern is corroborated in our data by the change in the reported “interest in politics” over time, as presented in [Figure 3.1](#) for years before and after the revolution.

**Expansion of rights and freedom.** On the eve of the Arab Spring, Arab countries such as Egypt were considered to have the most repressive governments in the world. Amnesty

International<sup>6</sup> criticized the Mubarak administration (the ex-general was president from 1981 to 2011) several times for restrictions related to freedom of expression and assembly, and for political censorship.<sup>7</sup> To establish the improvement of the freedom situation after the revolution, we provide in Table 3.1 the Human Freedom Index (HFI) from 2008 to 2012. Freedom of association and demonstration increased from 2.5/10 to 7.5/10 (0 means no freedom at all; 10, the best freedom situation) and freedom of assembly, or freedom to establish organisations, has also rocketed.

**Table 3.1:** Some components of the freedom situation in Egypt between 2008 and 2012

<i>Freedom in Egypt</i>	<i>2008</i>	<i>2009</i>	<i>2011</i>	<i>2012</i>
<b>1. Association, Assembly &amp; Civil Society</b>	<b>3.6</b>	<b>3.6</b>	<b>5.8</b>	<b>5.8</b>
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
<b>2. Expression &amp; Information</b>	<b>5.6</b>	<b>5.6</b>	<b>6.3</b>	<b>6.3</b>
i. Press killings	10.0	10.0	7.5	8.8
ii. Laws and regulations 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) for Egypt (2016 report).

In the same vain, Freedom House, an NGO, increased the rating of Egypt’s political rights in 2012 from “Not Free” to “Partly Free” (Vasquez and Porcnik, 2016). Freedom of information and public communication is also concerned. As an example, Vasquez and Porcnik (2016)’s report established that state control over Internet access has become much less influential, with the indicator moving from 3.3/10 to 7.5/10. This report also mentioned the increase in the number of independent television stations and the number

<sup>6</sup>In 2010, Amnesty International called on the government to lift the state of emergency and guarantee freedom of expression, association and assembly: <https://www.amnesty.org/en/documents/mde12/024/2010/en/> [accessed July 15 2019]

<sup>7</sup>See also the Freedom House 2010 report at <https://freedomhouse.org/report-types/freedom-world> [accessed July 15 2019]

of newspapers, and improved academic freedom.

Social networks were also used by citizens as a means for self-expression, and the new political parties based their communication on these important platforms. As an illustration, the number of Facebook and Twitter users rose very sharply in the two years after the revolution (Mourtada and Salem, 2011) and “Facebook” became the most popular search query in Egypt (Wolfsfeld et al., 2013). Many authors have also showed the positive effect of social networks in organizing demonstrations and discussing news before the revolution (Lotan et al., 2011; Stepanova, 2011). This effect remained persistent after the revolution and played an essential role in shaping political debates and promoting democratic values (Howard et al., 2011).

On the other hand, as we can see in Table 3.1, traditional media did not benefit from the freedom improvement. The political pressures and controls on content did not change, which explains why citizens have turned to social networks and Internet newspapers (Dabashi, 2012; Howard et al., 2011).

### 3.3 Data and descriptive statistics

**Data set.** To the best of our knowledge, no previous paper has investigated the determinants of preferences for redistribution in the Arab countries or the possible impact on those preferences of the Arab Spring, a major political shock over the whole region. To that end, we use 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 change due to revolutions, we limit our interest to the waves before and after the Arab Spring, that is, wave 5 (2005-2009) and wave 6 (2010-2014). For Egypt, wave 5 was conducted between 15 March 2008 and 05 April 2008, and wave 6 was between 01 March 2012 and 30 April 2012. Even though it is not an Arab country, we also add Turkey because of the religious, geographical and historical similarities. We have data simultaneity before and after Arab revolutions for only five countries: Egypt, Iraq, Jordan, Morocco, and Turkey.

Despite the WVS data having been used in several papers for studying redistribution

preferences, we have to be aware of some limitations in this data set (Alesina and Angeletos, 2005; Klor and Shayo, 2010; Shayo, 2009). One of them is the difference in size of the samples across countries, notably for the last wave, where the range varies between 825 observations (Morocco) and 1477 (Egypt). The principal reason is that some variables suffer from a high number of missing values or are even not asked, which is the case for the ideological position variable in the Jordan and Morocco data; fortunately, we do not experience this problem for Egypt’s variables. Another problem is that a chosen participant in each country collects the WVS data and the survey schedule is not unified.<sup>8</sup> If we look to waves 5 and 6, we see that it was conducted in a relatively large range of years (2005-2009 and 2011-2014 respectively). We take into consideration – as far as possible – these limitations in our analysis.

**Outcome variable.** We focus now on our explained variable, namely, the one indicating individual preference for redistribution. We rely on the following question from 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 being very favorable to the statement “Incomes should be made more equal” (i.e., more favorable to redistribution). This variable has been used many times to measure support for redistribution (Klor and Shayo, 2010; Murthi and Tiongson, 2008; Shayo, 2009). As we can see in Figure 3.1, the individuals’ distribution in choices concerning 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 in Table 3.2 at the evolution of this percentage in Morocco and Turkey, we found that there was a slight increase, especially if we look at the means of this variable in these

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<sup>8</sup>In the political context before the revolution and the turmoil thereafter, these limitations are particularly important. Therefore, we examined the documents discussing the sampling and methodological issues, and found nothing alarming. We also checked ourselves the original questionnaire and the adopted translation.

two countries. In Jordan, mean demand for redistribution decreased very slightly in 2014, even if the number of individuals declaring support for redistribution decreased strongly (from 25% to 12%).

**Table 3.2:** 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%

**Summary statistics.** In Appendix B, we present some information on the main characteristics of the individuals as well as the financial situation and the attitudinal variables in the sample before and after January 2011 for Egypt, Jordan, Turkey, and Morocco. Table B.1 in the Appendix, the first three columns refer to the period before the revolution for Egypt (at the beginning of 2008), and the last three columns refer to the period after the revolution for Egypt (14 months after the revolution). The last column in Table B.1 in the Appendix refers to the maximum value of the corresponding variable; for binary variables the minimum value is always 1. The same design is done for Jordan, Morocco, and Turkey with different fieldwork periods.

The size of the samples is between 1000 and 1500, except the 2008 sample for Egypt, which includes approximately 3000 individuals. Some variables that will be taken into account in our analysis are missing in some samples. Concerning the individual characteristics variables across countries before 2011, they have relatively close means except for the number of women, which is quite high in Egypt.

Our summary statistics suggest that the individual characteristics remain relatively stable between periods, except for those 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 on average more ideologically rightwing, a little less religious, more risk averse, more believing that they have control over their lives, and much more interested in politics. In Jordan, individuals became on average less risk averse and less trustful in society. In Turkey, individuals became on average more politically rightwing, slightly more risk averse, more trustful in society, and more interested in politics. In Morocco, individuals became on average more trustful in society, less believing that they have control over their lives, and a little more interested in politics. We can draw from these changes that Egypt experienced more changes than the other countries, especially in the level of degree of interest in politics. The number of individuals interested in politics in Egypt increased enormously. The different trajectories concerning the evolution of these variables over time show the need to control for these variables through an econometric approach.

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 waves 5 and 6. We also test the effects of these factors on demand for redistribution in other Arab countries in order to help us 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 rely on the data collected for Egypt, Morocco, Jordan, and Turkey for the same period.

### 3.4 Empirical strategy

We start by investigating the usual variables known in the empirical literature to have a possible impact on preferences for redistribution – most of them presented in Section 3.3 – by emphasizing that this literature is focused on developed countries. The latent variable  $y_{it}^*$  corresponds to the demand for redistribution of individual  $i$  at year  $t$ . We assume a linear specification, as follows:

$$y_{it}^* = \beta_1 \cdot I_{it} + \beta_2 \cdot S_{it} + \beta_3 \cdot A_{it} + \beta_4 \cdot W + \varepsilon_{it}, \quad (1)$$

where  $I_{it}$  is a vector of variables related to the individual financial situation,  $S_{it}$  is the

vector of individual characteristics,  $A_{it}$  is a vector of social attitudes,  $W$  is a wave dummy and  $\varepsilon_{it}$  is an error term logistically distributed. Each  $\beta_i$  is a parameters vector.

We do not observe  $y_{it}^*$  but a variable  $y_{it}$  defined on an ordered categorical scale, taking values from 1 to 5 reflecting an increasing demand for redistribution. To this end, we estimate an ordered logit model (standard errors corrected for heteroskedasticity) such that:

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

where  $\alpha_0$  to  $\alpha_4$  are thresholds that have to be estimated. Such a model, estimated by maximum likelihood methods, is used to investigate the main determinants of the preferences for redistribution. The results are provided in the subsection 3.5.1.

The second estimation phase deals with studying the revolution's effect. We propose two steps to fulfil this objective. First, the wave dummy  $W$  from 2008 and 2012 can be interpreted as a way to capture this revolution effect, as regards the magnitude of this event during the period in Egypt. This strategy is implemented in the first part of the subsection 3.5.2. Even if the revolution is by far the most significant modification in the economic and social situation from 2008 and 2012, it is difficult to associate a dummy variable reflecting the effect of time as a perfect substitute for an unobservable revolution variable.

Hence, in a second step, we include a control group of countries not affected by the revolution, and then we implement a difference-in-difference estimation. Specifically, we use the last two data waves for four countries, comparable aside from revolution (Egypt, Turkey, Jordan and Morocco) and we estimate the following model:

$$y_{ict}^* = \beta_1 \cdot I_{ict} + \beta_2 \cdot S_{ict} + \beta_3 \cdot A_{ict} + \beta_4 \cdot W + \beta_5 \cdot E + \beta_6 \cdot W \cdot E + \varepsilon_{ict}. \quad (2)$$

The latent variable  $y_{ict}^*$  is the demand for redistribution of individual  $i$  living in country  $c$  in period  $t$ . The  $E$  is a country dummy, equal to 1 if the individual lives in Egypt and 0 otherwise. It follows that  $W \cdot E$  represents the interaction between  $W$  and  $E$ , with  $\beta_6$  as the difference-in-difference estimator. We also conduct robustness checks using two waves for Egypt before the revolution instead of only one. The result are provided in the second part of subsection 3.5.2.

Finally, in the last part of subsection 3.5.2, we estimate the differential effect of the revolution by socio-economic and attitudinal groups in Egypt, by introducing interactions between these groups and the period dummy  $W$ . Hence, we estimate the following model:

$$y_{it}^* = \beta_1 \cdot I_{it} + \beta_2 \cdot S_{it} + \beta_3 \cdot A_{it} + \beta_4 \cdot W + \beta_5 \cdot W \cdot I_{it} + \beta_6 \cdot W \cdot S_{it} + \beta_7 \cdot W \cdot A_{it} + \varepsilon_{it}, \quad (3)$$

where  $\beta_5$ ,  $\beta_6$  and  $\beta_7$  are parameters for interaction groups.

## 3.5 Empirical results

### 3.5.1 Determinants of preferences for redistribution

#### Literature review

Before we present our results on the micro-level determinants of preferences for redistribution in Egypt, it is important to do a brief literature review covering the most interesting determinants. As we stressed above, the overwhelming majority of studies in this field were carried out for the occidental countries, and thus the MENA perspective is relatively new.

In this literature, self-interest factors are the most influential for an individual's redistribution preferences. A large body of empirical evidence shows that the actual financial situation is one of the most important determinants. The wealthier 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 harms demand for redistribution (Alesina and La Ferrara, 2005; Benabou and Ok, 2001). Concerning the personal perception of mobility, there is also the perception of the role of the effort and chance of determining success in life. In the literature, the more the respondent believes effort is important to success, the more he is against redistribution compared to the respondent who believes luck is more important. Two explanations can be provided. The first one is related to expected personal income: the more we think effort determines success, the higher are our expectations. The second explanation is a "justice" explanation: if effort is what determines our success

in life, there is no need anymore for incomes to be equal (i.e., if the individual is in a bad situation, then that is the result of what he sowed) (Fong, 2001; Piketty, 1995; Ravallion and Lokshin, 2000).

After economic factors come the ideological and social attitudes and psychological factors. The literature showed that many of these attitudes are correlated with personal demand for redistribution. At the ideological level, we count political and religious convictions. Busemeyer (2013) and Pittau et al. (2016) showed that being politically leftist enhances demand for redistribution compared to those declaring themselves on the right. For the religion attitude, Neustadt (2011) found that being religious reduces the support for redistribution compared to an individual who is not religious (Luttmer and Singhal, 2011) . Social attitudes are also important: Fong (2001) and Fatica (2011) explain how trusting others pushes individuals to be more favorable to redistribution compared to those who do not trust the people around them. Another social attitude is the perception of altruism: as explored by Alesina and La Ferrara (2005), being altruistic has a positive effect on demand for redistribution. Finally, in the family of psychological attitudes, scholars have studied the effect of risk aversion; Beck (1994) ran an experimental study and found that risk aversion can make the individual more favorable to redistribution based on an “insurance motive”. Rehm (2009) explains through an empirical study how risk of job loss (where the percentage of unemployment is high) has a positive effect on the demand for redistribution. Alesina and Giuliano (2009) find that the self-employed workers are relatively less favorable to redistribution and according to Guillaud (2013) public employed people are more inclined to support redistribution.<sup>9</sup>

To all of this is added some individual characteristics like age, gender, and education level. Although these characteristics are usually used as control variables, their effects were studied by many scholars. The older the individual, 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: demand for redistribution

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<sup>9</sup>Alesina and Giuliano (2009) and Guillaud (2013) use the employment status as a proxy for risk aversion. They respectively suppose that self-employed workers are more prone to take risks and public employed are more risk averse compared to their counterparts.

declines in advanced stages of the life-cycle. Women are more inclined than men to have a positive redistribution attitude [Alesina and Giuliano \(2009\)](#). A high level of education decreases demand for redistribution ([Fong, 2001](#)).

### **Determinant of preferences for redistribution in Egypt**

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 individual preferences for redistribution in Egypt. Given the very different economic and cultural structures between Occidental and Middle East and North Africa countries, we expect some divergence in the effects of the studied factors. The regressions are spread over three tables: [Table 3.A](#), [Table 3.B](#) and [Table 3.C](#). They show that while a considerable number of these factors have the same effects as in the literature, some diverge.

**Socio-demographic characteristics.** In [Table 3.A](#), we present results from the ordered logit regressions of preference for redistribution on socio-demographic characteristics. The coefficients on these variables are consistent with what can be found in the literature. Women, people who are illiterate or have a low education level, and elderly people, are all significantly more supportive of redistribution than their counterparts. Moreover, having one child or more yields no significant effect once financial situation is controlled for.

**Economic factors and subjective perceptions.** As shown in column 6, individuals who are satisfied or very satisfied with their financial situation are less supportive of redistribution than those who are not satisfied.<sup>10</sup>

In column 1 of [Table 3.B](#), we test the effect of the subjective health situation. We find, as expected, that those in bad health demand more redistribution compared to those in good health. This variable also reflects a part of personal risk exposure: Poor health exposes the individual's future to more risk compared to those with good health.

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<sup>10</sup>We chose the perceived financial situation and not income decile because we have many more missing values for the latter. Moreover, perceived financial situation includes other economic circumstances that are difficult to test.

**Table 3.A:** Determinants of preferences for redistribution and effect of time in Egypt:  
Age, Sex, Education, Children and Financial Situation

	(1)	(2)	(3)	(4)	(5)	(6)
	Preferences for redistribution					
After revolution	1.497***	1.499***	1.491***	1.498***	1.482***	1.535***
Age						
26-39		0.160*	0.167**	0.129	0.168*	0.125
49-59		0.136	0.158*	0.0454	0.0908	0.0682
>59		0.333***	0.362***	0.255**	0.288***	0.281**
Woman			0.147***	0.0946	0.104*	0.143**
Education						
Primary school				-0.260***	-0.262***	-0.222***
Secondary level				-0.211**	-0.210**	-0.191**
University level				-0.300***	-0.306***	-0.184**
Children					-0.0986	-0.103
Financial situation						
Dissatisfied						0.199**
Moderately satisfied						0.0823
Satisfied						-0.492***
Very satisfied						-0.832***
Observations	4465	4465	4465	4305	4305	4304
Pseudo $R^2$	0.044	0.045	0.045	0.046	0.046	0.056

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

In line with the factors having consistent effects in Occidental countries, being leftist enhances the probability of holding favorable positions towards redistribution compared to being rightist. Trusting others – and thus potentially adopting a reciprocal attitude – also has the same positive effect, as we can see in columns 2 and 3 of Table 3.B.

Moreover, trusting others will push the individual to think that others will not take something if it is not their right legally and therefore imply more favorability to redistribution compared to those having the opposite attitude (Fong, 2001, Fatica, 2011).

In column 4, we add an important factor considered as one of the most influential determinants of preferences for redistribution: belief about the role of effort and chance in determining the success in life. In our study, we take the following item as a proxy for this attitude: “How much freedom of choice and control you feel you have over the way your life turns out”. If individuals consider that they have control over their lives, they will be more able to accept their financial situation as a result of their effort, and thus less favorable to redistribution. We find the expected result: the effect is negative, significant and progressive. We find the same result in a considerable number of Arab countries, as we can see in the last row of Table C.1 in the Appendix.

The effects of three factors differ in Egypt from the prevalent literature: religious involvement, altruistic attitude, and risk attitude.

**Table 3.B:** Determinants of preferences for redistribution and Effect of time in Egypt:  
Health, Political Ideology, Trust, Perception of role of effort and Interest in politics

	(1)	(2)	(3)	(4)	(5)
	Preferences for redistribution				
After revolution	1.508***	1.639***	1.535***	1.590***	1.489***
Bad health	0.244***				
Politic ideology					
Centrist		-0.0154			
Rightist		-0.247***			
Trust people			0.454***		
Role of effort					
Partly having control over own life				-0.166**	
Completely having control over own life				-0.533***	
Interest in politics					
Not very interested in politics					0.0152
Somewhat interested in politics					-0.204***
Very interested in politics					0.334***
Control variables	Group B				
Observations	4304	4015	4299	4300	4301
Pseudo $R^2$	0.057	0.062	0.059	0.061	0.058

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

Group B: Age, Woman, Education, Children and Financial situation.

**Table 3.C:** Determinants of preferences for redistribution and effect of time in Egypt:

Attend religious services, Altruism and Risk attitude

	(1)	(2)	(3)	(4)
	Preferences for redistribution	Preferences for redistribution	Preferences for redistribution	Preferences for redistribution
After revolution	1.560***	1.537***	1.489***	1.547***
Religious	0.245***			
Altruism				
Helping others is moderately important		-0.297**		
Helping others is important		-0.481***		
Altruism is an important quality child			-0.183***	
Risk attitude				
Not that important to take risks				-0.0288
Not important to take risks				-0.0373
Control variables	Group B	Group B	Group B	Group B
Observations	4301	4300	4304	4300
Pseudo $R^2$	0.057	0.057	0.057	0.056

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

Group B: Age, Woman, Education, Children and Financial situation.

**Religion.** In column 1 in Table 3.C, we include the variable presenting the individual religious involvement (being an active participant in religious activities). In the literature, religious people are less favorable to the redistribution compared to their counterparts; one explanation is that religious people benefit more from the services provided by religious support networks (Alesina and Giuliano, 2009; Luttmer, 2001; Neustadt, 2011). In our study, attending religious activities has the opposite effect: the coefficient is positive, that is, attending religious services enhances the probability of supporting redistribution. However, regarding the particular role of religious support networks in Egypt, we would expect a strong negative effect compared to what we can find in Western countries. Our explanation for this unexpected result relies on the prevalence of a second important channel, which is Islamic religious education focusing on the importance of charity and social solidarity. Moreover, since individuals attending religious services are more exposed

to this kind of speech, their support for redistribution increases more compared to their counterparts. Another potential explanation is the strong relationship between the state and religion. The individual may consider a contribution to the state as a contribution to his community. One has to underline that we find the same significant positive effect of religion in Iraq and Lebanon.

**Altruism.** To test the effect of altruism, we use a proxy that indicates if the person thinks it is important to help people, and another proxy that indicates if the individual views unselfishness as an important quality for a child. [Alesina and La Ferrara \(2005\)](#) found a positive effect for the same factor for the United States. We find in columns 2 and 3 of Table 3.C that for the two proxies, being altruistic has a negative effect and it is very significant. The explanation we provide is based on the complexity of the social transfers system in Egypt. [Karshenas et al. \(2014\)](#) explain the importance of the residual forms of social transfers in the Arab countries and how they cover needs not met by the social state.<sup>11</sup> Therefore, in this context, thinking that it is important to help people can be considered as a proxy for living in a place where this value is important, which means in more supportive surroundings. In this case, individuals are less dependent on redistributive state transfers and thus support less redistribution. If we look at the effect of these variables in other Arab countries (see Table C.1 in the Appendix), we find that the first proxy coefficient is also negative and significant in Iraq, Lebanon, and Tunisia. We find a positive significant coefficient only in Yemen and Jordan. For the second proxy, we found a positive significant effect of being altruistic only in Tunisia, which indicates that the explanation of this result lies in something specific to the Arab social structure.

**Risk attitudes.** For the risk attitudes factor, we use individual answers to a question that would elicit risk aversion: “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, such that 1 represents risk-averse individuals, and 3 risk-seeking individuals. We see in column 4 in Table 3.C that the coefficients are negative, as expected, but insignificant. We tried to study the effect of the risk attitude by taking the occupation type (if the individual is self-employed or working in the public sector), but only for wave 6 (we do not have this

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<sup>11</sup>Contrary to Western countries, where social transfers are managed almost exclusively by state.

information for wave 5): the effect still insignificant (regression not reported). We explain this insignificant effect by the fact that the labor market structure is very different in Egypt compared to developed countries; being in a public institution may not offer the same insurance offered by such a position in developed countries and the conditions concerning the self-employment are quite different.<sup>12</sup> If we look at Table C.1 in the Appendix, only in Turkey and Iran do we have a significant negative coefficient for the risk aversion question.

### 3.5.2 Effect of the Revolution on preferences for redistribution

As we stated in the third Section, the distribution of respondents for the demand for redistribution has changed drastically. To estimate and quantify the effect of the revolution, we control first for the classical determinants of demand for redistribution among Egyptians, and second for the effect of time that concerns the Arab world generally. We are also interested in seeing if we have a differential revolution effect by groups we choose.

#### Revolution as a time effect

To estimate the effect of revolution, we estimate the effect of time, meaning 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 equal to 1 if the respondent was questioned in wave 6 and 0 if the respondent was questioned in wave 5.

Tables 3.A, 3.B, and 3.C 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 0.232 increase in the probability of being identified as very favorable to redistribution and a 0.269 decrease in the probability of being identified as very unfavorable compared with an individual living in 2008.<sup>13</sup> This effect is still significant and powerful and has 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 able to explain the shift in the

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<sup>12</sup>For example, in Egypt, a large part of the population still lives in rural areas where most jobs are considered as self-employment (or more generally as part of the informal sector).

<sup>13</sup>Marginal effects available upon request.

preferences for redistribution after the revolution.

### **Comparison with other Arab countries: A difference-in-difference analysis**

Is the effect of time specific to Egypt, implying 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 for Egypt, Jordan, Morocco, and Turkey. These countries are quite close in their political and economic level, which provide us with a good control group. We find that political institutions in Jordan and Morocco share important characteristics with Egypt such as the weak role of political parties, oligarchic regime, long rule of governors, freedom situation... At the economic level, all four countries are considered middle-income economies. Moreover, for the period between 2001 and 2008, there was an increasing trend for the average of the preferences for redistribution in these four countries; we even have a nearly perfect parallel trend in terms of the percentage of individuals in favour of redistribution if we compare the Moroccan and Jordan trends to the Egyptian trend for this period.

In the first place, we run the regression following the equation 1 for each of these four countries, and we calculate the marginal effects (see Table 3.6).

We find that the effect of time in 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 2012 compared to 2008 is 26.8% higher, while only 4.5% higher in Jordan, 4.3% in Morocco and 5.5% in Turkey. These positive coefficients of the 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, openness to the international world increased due to development in the level of education and access to the Internet, and thus better information on the situation of inequality became available.

To obtain the effect of time while controlling for the Arab trend, we calculate the diff-in-diff estimator representing the effect of time concerning Egypt based on the estimation of (2). The diff-in-diff estimator is obtained by the interaction between the dummy

**Table 3.6:** Effect of time in Egypt, Jordan, Morocco, and Turkey

	(1) Egypt	(2) Jordan	(3) Morocco	(4) Turkey
Pref for redistribution				
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

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

Marginal effects of After revolution					
	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

All regressions include the variables of the group A. Group A: Age, Woman, Education (only for Egypt and Jordan), Children (Except for Morocco), Financial situation, Bad health, Political ideology (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, Child altruism, Interest in politics, Altruism (only for Egypt) and Role of effort.

variable equal to 1 if the individual lives in Egypt and 0 otherwise. The results are reported in Table 3.7.

**Table 3.7:** Effects of the interactions between the time variable and the country of residence

	(1) Egy*Jordan	(2) Egy*Morrocco	(3) Egy*Turkey	(4) Egy*All
Pref for redistribution				
After revolution=1 × Egypt=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), Financial situation, Bad health, Political ideology (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, Child altruism, Interest in politics, Altruism (only for Egypt) and Role of effort. Group C: Age, Woman, Children, Financial situation, Bad health, trust people, Child altruism, Interest in politics 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.

The wave numbers are displayed in the first 3 columns. We are looking for the diff-in-diff estimators by comparing Egypt with one of the countries alone in each column. Even if the magnitude of the coefficient became smaller, the diff-in-diff estimator is very significant. The marginal effects remain large in any case. In 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 remains very significant. We conclude that even if part of the effect of time is unspecific to Egypt, the effect of the revolution remains very strong.

In the second place, we run a placebo test that consists of comparing the effect of time on the waves before the Arab Spring. Between 2001 and 2008, when there was no revolution, the expected result for the effect of time is to have a marginal effect small enough to be compared with that of the period of the revolution. We run the same regression following equation 1 for the period 2001-2008. Even if the effect of time between 2008 and 2001 is positive and very significant, the marginal effects are 3 times smaller than the ones for the period 2012-2008 (see Table 3.8). This indicates that even if

there was a prior trend in Egypt regarding the evolution of preferences, its effect remains incomparable to what we find for the revolution period.

**Table 3.8:** Effect of time for the periods 2001-2008 and 2008-2012 in Egypt

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

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

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

Controls include: Group of variables B except Political ideology and Importance of help for the period 2001-2008.

### Heterogeneous impact on economic and social groups

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 find that the heterogeneous effect exists across financial situation groups, health situation groups, and degree of interest in politics groups. We start by presenting the effect of revolution on support for redistribution for the financial situation groups. In Table 3.9 we use the estimation (3), where the financial situation index interacts with wave dummy. The analysis indicates, relative to the lowest financial situation group, that the effect of the revolution becomes smaller and smaller for each group whose financial situation is better.

To obtain the marginal effects for every financial situation group, we re-estimate the equation (1) separately for each group. Table 3.10 shows that the heterogeneity of the effect goes in the direction of having a weaker positive effect for the highest financial situation group compared to the middle and the lowest financial situations groups.

**Table 3.9:** Differential Effect: Interactions between revolution and some determinants of preferences for redistribution

	(1)	(2)	(3)	(4)
	Pref for redistribution	Pref for redistribution	Pref for redistribution	Pref for redistribution
Pref for redistribution				
Financial Situation				
After revolution=1 × Dissatisfied	-0.474**			
After revolution=1 × Moderately satisfied	-0.764***			
After revolution=1 × Satisfied	-0.976***			
After revolution=1 × Very Satisfied	-1.375***			
After revolution=1 × Bad Health		0.489***		
Interest in Politics				
After revolution=1 × Not very interested			-0.0260	
After revolution=1 × Somewhat interested			0.0685	
After revolution=1 × Very interested			0.706***	
Age Group				
After revolution=1 × 26-39				0.431**
After revolution=1 × 39-59				0.340*
After revolution=1 × >59				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 3.10:** Effect of revolution in Egypt over the Financial Situation groups

	(1)	(2)	(3)	(4)
	All	Difficult Financial Situation	Average fin sit	Very good fin sit
Pref for redistribution				
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.

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

The probability of being very favorable increases after the revolution by 0.349 for the low financial situation, 0.301 for the average financial situation, and 0.237 for the high financial situation.<sup>14</sup> In turn, it suggests that the revolution increased the gap in demand for redistribution across wealth groups. One potential explanation for these heterogeneous effects could be that the changes following the revolution were more addressed to the low and medium category than the high category, such as the spreading of ideas about inequalities and social justice. In the last section, we discuss what kind of factors could generate these heterogeneous effects.

In column 2 of Table 3.9, we include the interaction between wave number and health situation. We conclude that the effect of the revolution differs significantly between individuals having good health and those having poor health: the positive effect of the revolution on demand for redistribution appears much stronger for people in poor health than those in good health. Insofar as health status is one of the components of well-being in addition to financial situation, this result joins the previous one.

In the same table, we include in column 3 the interaction between wave number and the categorical variable indicating the individual's degree of interest in politics. We find that the individuals who are very interested in politics were impacted much more positively by the revolution in their preferences for redistribution than individuals not interested at all in politics. This result shows that part of the positive effect of the revolution lies in the considerable change in the new political landscape after the revolution discussed in Section 3.2. We add in column 4 the interaction with the individual age group. The youngest category seems to be the group least affected by the positive effect of the revolution on demand for redistribution, even if these coefficients are weakly significant.

After this regression analysis, we can conclude that the 25 January revolution had an enormous effect on demand for redistribution in Egypt and that this effect was heterogeneous over some economic and social groups. We discuss in the following section how this revolution could have such an impact on the evolution of preferences for redistribution in Egypt.

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<sup>14</sup>Marginal effects available upon request.

## 3.6 Discussion and robustness checks

**The nature of the shock that has affected demand for redistribution.** We have established that demand for redistribution drastically changed during the period of the Revolution and, through a diff-in-diff analysis, that this modification in demand cannot be dissociated from the Revolution by taking the situation of comparable countries as controls. Nevertheless, the nature of the shock that has affected demand for redistribution is not fully identified through our data. We argue that the change in the political offering and the expansion of rights and freedom are the most important dimensions characterizing the Revolution that have reshaped demand for redistribution.

In Section 3.2, we have established that the economic situation, from the early 2000s and up until the Revolution, followed a slightly upward trend in both the growth rate and income inequality. Hence, the change in demand for redistribution in Egypt cannot be a consequence of an “economic shock”, as has been observed, for instance, in some European countries and the United States after the recent economic crises (Kroeger, 2014; Margalit, 2013; Olivera, 2014). Moreover, we have found, through our regressions, that individual perceptions of the economic situation – which can be biased and thus disconnected from the real economic situation – cannot explain this change.

We have put forward in Section 3.2 that two major social and political changes have affected Egyptian society during the period. The first one is an improvement in freedom of information, largely through the influence of the Internet and high flow of news that became accessible. The other major change is an enlargement of the political offering through the emergence of a new and diversified political class, which was followed, in the elections held immediately after, by very high participation rates. Schläpfer et al. (2008) establish how citizen preferences can be influenced by political institutions and especially by party programs. In the same vein, Ford (2016) explains how moral narratives adopted by political and media elites can manipulate individual perceptions about welfare. What we see in Egypt is that people became very interested in politics after the revolution, and that they face a new political discourse, inspired by the revolution, with social justice as a central theme.

This political history, with an important shock during the Revolution, implies that

Egypt is in a very different situation compared to most Western countries where preferences for redistribution have been investigated. Indeed, in these studies, it is implicitly assumed that individuals are aware that redistribution from the rich to the poor is among the possible prerogatives of the state. Difficult access to information, a repressive political system, and very concentrated political power for decades – as was the case in many countries in the MENA including Egypt – may place citizens in a position of ignorance of even the most fundamental rights. This situation can imply incomplete preferences, or a bounded rationality, in the sense that the set of choices is limited in comparison with a more democratic society.<sup>15</sup>

One element in our data supporting this point of view is the evolution of the correlation between two important variables, the “preference for redistribution” and the “support for governing intervention”.<sup>16</sup> In many studies dealing with developed countries, scholars take this variable as a proxy for preference for redistribution because there is, in these countries, a very high correlation with our own dependent variable. In Egypt, a strong correlation exists between the answers to these two questions, but only after the Revolution. Indeed, for the 2001 and 2008 waves, the correlation was very weak. Specifically, support for government intervention was nearly the same before and after the Revolution; this is not the case for support for reducing income differences. Our interpretation of this phenomenon is that Egyptians before the Revolution were not thinking of redistribution as an option when asked about state intervention due, among other things, to the lack of information.

**Impact of the perceptions on corruption.** A plausible interpretation of the significant increase in demand for redistribution after the Revolution lies in the fact that the Mubarak regime was very corrupt, so that people might expect, before the Revolution, that the money collected to finance redistribution would be simply stolen. Hence a change in the

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<sup>15</sup>Hong et al. (2015) showed how unfounded beliefs or an erroneous processing of information could generate the “irrationality” of individual social welfare preferences.

<sup>16</sup>This last variable comes from 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”.*

demand for redistribution could be a consequence of the collapse of a corrupt regime, and not a change in preferences. We provide here some arguments contradicting this interpretation.

In a recent paper, [Hauk et al. \(2017\)](#) explain that perceived corruption influences people's preferences for redistribution through two channels moving in opposite directions. On the one hand, corruption undermines trust in government, which reduces people's support for redistribution. On the other hand, more corruption decreases the wealth of below-average-wealth individuals relative to average wealth, leading to a higher demand for redistribution. All in all, however, the authors find that perceiving corruption in the public sector tends to increase people's support for redistribution in Latin America.

The positive effect of trust in government on preferences for redistribution – the first channel described above – is also questionable. As an example, [Edlund \(1999\)](#) did not find any significant relationship between political trust and redistribution. The way demand for redistribution is approximated is also important to investigate this possible effect. With a question on redistribution directly associated with the concept of taxation, [Alesina et al. \(2017\)](#) showed, in a study including five countries, that the worse the view of government, the lower is redistributive support (especially in the US). We emphasize that, in our study, the question used does not mention taxation or costly policies but refers more or less to ideology itself, more in line with preferences for more income equality ([Neher, 2011](#)).

Thanks to the World Value Survey database, we are able to investigate trust in government in Egypt before and after the Arab Spring. We propose here some regressions with the following objectives: (1) to verify the relationship between the trust in the state and the preference for redistribution, and (2) to analyze the evolution of this perception among Egyptians before and after the revolution. The variable used comes from the following question: “*The government (in your nation's capital): could you tell me how much confidence you have in it: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?*”. This variable is missing for the 2008 survey so we compare the 2001 survey, when the Mubarak regime was operating, to the 2012 survey.

According to the estimation in the column (1) of Table D.1 in the Appendix D where we have kept the same control variables as in our final regressions in section 3.5, all coef-

ficients associated with trust towards government have no significant impact, in 2001, on our dependent variable, namely, the preference for redistribution. The same regression in 2012 (column (2) of Table D.1 in the Appendix) shows that the only significant coefficient positively affecting support for redistribution is the one for people who do not trust the government at all. This result contradicts the argument that a negative perception of the government – due to corruption, for instance – negatively impacts the demand for redistribution, as hypothesized in the beginning of this paragraph.

Then, we display in Table D.2 in the Appendix two contingent tables to track the evolution of the variable “trust in government” from 2001 to 2012. It shows that the confidence did not drastically change and even tends to decrease, again a result contradicting the hypothesis raised. To sum up, even if the fact that both perception of corruption and declining trust in government were main drivers of the Arab Spring is clearly established (Giesing and Musić, 2019), (1) the direct impact of these factors on the preference for redistribution is not so clear, or run in the opposite direction as hypothesized above, and (2) trust in government and perception of corruption after the Revolution have not significantly changed or, again, have effects running in the opposite direction as hypothesized above.<sup>17</sup>

**Revolution: a consequence, not a cause?** According to our interpretation, the Revolution has affected the demand for redistribution. However, one can also argue that the causality is reversed, in the sense that the Revolution is just a consequence of an increasing demand for redistribution. First of all, notice that we have not been able to find an appropriate instrumental variable to test the causality of the link between these two dimensions, due to the limited richness of our data and the complexity of the phenomenon. Nevertheless, several elements lead us to believe that the evolution of the demand for redistribution was a consequence and not a cause. The first element, as described in Section 3.2, is the fact the origins of the Revolution are weakly linked to economic reasons.

The second element deals with the homogeneous evolution of the preferences for redistribution among several social groups. It has been established by El-Mallakh et al. (2018)

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<sup>17</sup>According to Transparency International the evolution of the indicator of perception of corruption for the period concerned is as follows: 2008: 2.8; 2009: 2.8; 2010: 3.1; 2011: 2.9; 2012: 3.2.

that a large majority of the participants in the events in Egypt – which led to the successful Revolution – were men (77%), middle-class, with high levels of education (46%). Saying that the evolution of demand for redistribution occurred before the Revolution and that it was one of the Revolution’s drivers implies that the evolution, between 2008 and 2012, of preferences for redistribution among individuals bearing these characteristics is more marked than that of their counterparts. Clearly this is not the case: as we have shown in Section 3.5 (part on the differential effect of time), there is no significant difference between the evolution of men’s preferences compared with those of women, or between the highly educated compared to the less educated, and individuals with average financial status were not the most impacted.

The third argument is based on the results of our diff-in-diff inter-country analysis. Indeed, Egypt was the only country among the four where the Revolution succeeded, but not the only one where demonstrations took place in nearly the same period following the Revolution in Tunisia, such as in Jordan and Morocco (in the latter country, protests began in February 2011 in several cities). The Egyptian and Moroccan situations shared several common aspects at the beginning, from the triggers of these uprisings to the announced demands and slogans raised. Nevertheless, no evolution of preferences comparable to what we have seen in Egypt has been identified in Morocco. This observation tends to confirm the absence of a link between demand for redistribution and violent protests at the beginning of the Revolution.

### 3.7 Conclusion

Our study sheds light on the determinants of preferences for redistribution in Arab countries and more specifically in Egypt. While socio-demographic characteristics, economic factors, and subjective perceptions fit with the common findings, we find some differences between Occidental and MENA countries. Cultural differences and social structure of the society provide another interpretation of this question. We show that the effect of attending religious activities may be reversed. Another surprising result is the negative effect of having an altruistic attitude. In the countries we study, the strong presence of religion and the sustenance of alternative forms of social transfers seem to weigh on the

formation of individual attitudes. Concerning risk attitudes, we provide an explanation of why the proxy of occupation institution to measure risk attitude is not appropriate for the case of Egypt.

The most important result is the effect of the Arab Spring on preferences for redistribution in Egypt. It has been shown that none of the available factors considered as determinants of redistribution preference can explain this time effect. To our view, taking this event as a political and freedom shock explains Egyptians' radical change in attitudes towards redistribution between 2008 and 2012. Removing the Arab trend hypothesis by controlling for the evolution of preferences in analogous Arab countries strengthens the results. We show that this effect is heterogeneous according to the financial and social situation of individuals. We think the effect relates to the enlargement of the set of possibilities through the multiplication of political debates, increase in access to new informative tools and dissemination of the ideas of young educated people deeply implicated in the revolution. This shock has a potentially long-lasting effect and might be a first step to the virtuous circle depicted by [Acemoglu and Robinson \(2012\)](#)): first regarding the logic of pluralistic political institutions, which contrasts with the reign of Mubarak over 30 years, and second regarding the possibility for free media to flourish and provide information to promote inclusive institutions. Nevertheless, it is essential to underline that while the virtuous circle creates a tendency for inclusive institutions to persist, it is neither inevitable nor irreversible.

Our work opens two main doors. First, we emphasize the necessity to enlarge the number of studies on determinants for redistribution from an Oriental perspective. In this paper, we limited our analysis to the essential aspects for this topic, but much more can be done. Second to investigate is the importance of the level of freedom and political context on the formation of individuals' support for redistribution. This theme is gaining in importance given the deterioration of the state of democracy in the world, as mentioned in the report "Democracy in crisis" by [Freedom House \(2018\)](#). The factor of freedom (especially political freedom) has up to this point been considered very little concerning its effect on individual preferences for redistribution.

# Supporting Information

**Appendix A:** Description of variables

**Appendix B:** Summary statistics

**Table B.1:** Summary statistics: Egypt

**Table B.2:** Summary statistics: Jordan, Morocco and Turkey

**Appendix C:** The determinant of the preferences for redistribution for some MENA countries

**Table C.1:** The effects of some factors on preferences for redistribution in the Middle East and the North Africa: a comparison

**Appendix D:** Confidence in the government and Egyptian redistribution preferences

**Table D.1:** The impact of trust towards government on the preferences for redistribution in 2001 and 2012

**Table D.2:** Evolution of the index of the trust towards government between 2001 and 2012

## Appendix A: 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 redistribution: 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 40 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
- Bad health: dummy equal to 1 if the respondent is in a bad or very bad health situation and equal to 0 otherwise.
- Financial situation: 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 people: 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.
- Political ideology: 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 does not like to take risks instead, and the value of 2 if the respondent is in between these 2 positions.
- Social trust: Categorical variable varying on a 5 points scale from 1=the respondent think that the people would take advantage of him (low social trust) to 5=the respondent think that the people try to be fair (high social trust).
- Altruism: 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.
- Altruism for child: 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 politics: 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.

- Trust towards government: Categorical variable presenting 4 categories on how much the respondent has on the government (regarding the nation's capital). This variable is equal to 1 if the respondent thinks that it is a great deal of confidence, 2 if it is a quit a lot of confidence, 3 if it is not very much confidence and 4 it is none a all.
- 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, Financial situation, Bad Health, trust people, Child Altruism, Interest in Poli and role of effort.

## Appendix B: Summary statistics

**Table B.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
<i>Individual characteristics</i>							
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
<i>Current welfare</i>							
Financial situation	2.70	1.248	3027	2.75	1.30	1477	5
<i>Attitudinal variables</i>							
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

**Table B.2:** Summary statistics: Jordan, Morocco and Turkey

	Means						Max
	Jordan		Morocco		Turkey		
	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
<i>Individual characteristics</i>							
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
<i>Current welfare</i>							
Financial situation	3.44	2.93	2.77	3.07	3.25	3.38	5
Health situation							1
<i>Attitudinal variables</i>							
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), Financial situation, Bad Health, Political Ideology (only for Egypt and Turkey), religious (only for Egypt and Turkey), trust people, Child Altruism, Interest in Politics, Altruism (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 C: The determinant of the preferences for redistribution for some MENA countries

**Table C.1:** The effects of some factors on preferences for redistribution in the Middle East and the North Africa: a comparison

Variables	Positive effect & Significant	Negative effect & Significant	Not Significant
Being risk averse (Risk Attitude )	Algeria, Bahrain, Lebanon, Yemen	Iran, Turkey	Egypt, Morocco, Jordan, Libya, Palestine, Tunisia
Being religious (Attend religious services)	Egypt, Iraq, Lebanon	Palestine, Tunisia	Algeria, Iran, Bahrain, Jordan, Libya, Yemen, Turkey
Thinking that unselfishness is an important quality child (Altruism attitude 1)	Jordan, Yemen	Egypt, Iraq, Lebanon, Tunisia	Algeria, Iran, Bahrain, Morocco, Kuwait, Libya, Palestine, Qatar, Turkey
Help others is important (Altruism attitude 2)	Tunisia	Egypt, 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	Egypt, 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.

## Appendix D: Confidence in the government and Egyptian redistribution preferences

**Table D.1:** The impact of trust towards government on the preferences for redistribution in 2001 and 2012

	Egypt Sample	
	(1)	(2)
	Preferences for redistribution	Preferences for redistribution
	Wave 4 (2001)	Wave 6 (2012)
<i>Trust towards government</i>		
Quite a lot of confidence	0.113	0.249
Not very much confidence	0.031	0.153
None at all	0.083	0.436**
Observations	2473	1375
Pseudo $R^2$	0.011	0.030

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

All regressions include the variables of the group B. Group B: Age, Woman, Education, Children and Financial situation. We take the “A great deal of confidence” as the reference group concerning the *trust towards government* variable.

**Table D.2:** Evolution of the index of the trust towards government between 2001 and 2012  
(by %)

Egypt Sample		
	Trust towards government	
	Wave 4 (2001)	Wave 6 (2012)
A great deal of confidence	18.55	11.74
Quite a lot of confidence	42.16	32.43
Not very much confidence	26.23	31.21
None at all	13.06	24.63
Observations	2474	1474

## Chapter 4

# Like Parents Like Child? The Intergenerational Transmission of Preferences for Redistribution

### Résumé en Français

La littérature regorge d'études mettant en évidence l'existence de fortes corrélations intergénérationnelles, dont certaines concernent les préférences. Cet article est le premier à étudier empiriquement la corrélation intergénérationnelle des préférences de redistribution entre les parents et les enfants. Les principaux résultats obtenus à partir des données du SOEP suggèrent une importante transmission intergénérationnelle des préférences de taxation. Outre le fait que les corrélations estimées placent les préférences parentales en tête des déterminants des attitudes individuelles à l'égard de la redistribution, notre analyse de médiation remet en question l'impact de certaines variables considérées comme des déterminants clés dans la littérature. Concernant le mécanisme de transmission de ces préférences, l'environnement social semble jouer un rôle plus important que la socialisation familiale directe. Cette étude montre également que l'absence d'opinion sur ces questions de redistribution peut s'expliquer par l'attitude des parents de l'individu ainsi que par son niveau d'éducation, son genre et son orientation politique.

## English Abstract

The literature abounds with studies highlighting the existence of strong intergenerational correlations, some of which relate to preferences. This paper is the first to investigate empirically the intergenerational correlation of preferences for redistribution between parents and children. The main findings using the SOEP data suggest a substantial intergenerational transmission of preferences for taxation. In addition to the fact that the estimated correlations put parental preferences at the head of the determinants of individual attitudes towards redistribution, our mediation analysis challenges the impact of some variables considered as key determinants in the literature. Regarding the mechanism of transmission of these preferences, the social environment seems to play a more important role than direct family socialization. This study also shows that the absence of opinion on these redistribution issues can be explained by the individual's parents' attitudes as well as by the individual's level of education, gender and political orientation.

### 4.1 Introduction

In the current context of growing inequality accompanied by historically low tax rates for the most affluent, debates on taxation and redistribution policies are once again at the center of attention ([Alvaredo et al., 2018b](#); [Piketty, 2020](#); [Saez and Zucman, 2019](#)). One of the key elements in these debates is the formation and evolution of public attitudes towards redistribution, an issue that has been addressed by many scholars, revealing a considerable number of determinants of these political-economic preferences ([Alesina et al., 2018b](#); [Alt and Iversen, 2017](#); [Clark and D'Ambrosio, 2015](#); [Magdalou, 2020](#)). Nevertheless, one of the under-exploited topics at this level is the sensitivity of these preferences to external factors. In fact, the basic economic assumption stating that preferences are mainly exogenous and independent of external factors has been repeatedly challenged by numerous studies: a wide range of institutions and social factors influence the formation and evolution of economic and political preferences (for a literature review see [Bowles, 1998](#); [Dietrich and List, 2013](#); [Druckman and Lupia, 2000](#)). In this paper, we seek to exploit one aspect of the endogenous nature of preferences for redistribution, namely the contribution of the family, and more generally, social institutions to the formation of such

preferences.

One of the pioneering works on cultural evolution from an economic perspective is the theoretical model of [Bisin and Verdier \(2000a\)](#) in which parents – among other socialization groups – are strongly encouraged to socialize their children to have the same preferences. The incentives for intergenerational transmission are manifold, one of which lies in the parents' implicit desire to increase the chances of maintaining (or changing) a certain distribution of preferences in a given society, particularly when these preferences shape the economic policies. Another reason for parents to pass on their values to their children is the "taste for similarity". In this case, having children who are ideologically more alike helps to satisfy this desire (see [Melindi Ghidi, 2012](#)). Finally, parents socialize their children out of empathy. In order to increase the chances that their offspring will be in the best economic and social conditions, parents socialize their children with the traits and values they see as necessary to achieve this. This empathy can be considered as "perfect empathy" when parents pass on the best traits to their children, or "imperfect empathy" when parents pass on what they have as traits thinking that what is good for them is good for their children (see [Bisin and Verdier \(2001\)](#) for imperfect empathy and [Bulte and Horan \(2011\)](#) for perfect empathy).

**Empirical strategy.** To our knowledge, this study is the first investigation of whether there is an intergenerational transmission of redistributive preferences, through which channels it occurs, which factors foster the transmission and the extent to which it explains the impact of well-known determinants of the demand for redistribution. First, we test the correlation between the attitudes of parents and children on two important redistribution issues: the taxation of the poor and the taxation of the rich. We control this correlation for a large number of confounding variables, focusing on elements that can be transmitted from parents to children as outlined in the literature, and perform various robustness checks. Second, we seek to investigate the nature of this transmission, whether it occurs through direct voluntary or indirect involuntary socialization.<sup>1</sup> For this

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<sup>1</sup>[Bisin and Topa \(2003\)](#) identify two transmission mechanisms for attitudes without a genetic component: direct voluntary family socialization and indirect involuntary socialization of society. Direct

purpose, we examine whether direct socialization (through several proxies) plays a role in the extent of this transmission.<sup>2</sup> The insignificant impact of these proxies implies that involuntary indirect socialization is the predominant mechanism. Third, we conduct a mediation analysis to examine the extent to which parents' preferences for redistribution explain the well-documented correlations between important factors (such as financial status and region of residence) and individuals' preferences for redistribution.

**Summary of results.** First, we find a significant correlation between the redistributive attitudes of parents and those of their children. Compared to the impact of the other well-known determinants of redistributive demand, parental preferences figure as the most prominent. This relationship remains essentially the same regardless of the factors we control for, including the individual's socio-economic factors, the ideological and psychological attitudes, the region of residence and the other-regarding preferences. The impact of parental preferences remains substantial and significant even for children who do not live with their parents. We also find that children whose parents do not have an opinion on the issue of taxation are much more likely to have no specific position. Our results indicates also that people with higher levels of education, those who are risk-averse, centrists, women, and individuals whose parents are poorly educated are more likely to hold no opinion on the taxation issues compared to their counterparts.

Second, our study shows that the socialization exerted by the social environment prevails over the direct voluntary socialization of parents concerning the transmission of redistributive attitudes. The factors used as indicators of the intensity of direct parental socialization (like the nature of relationship between parents and child) shows only a limited differential effect. Only the transmission from fathers to children of attitudes towards the taxation of the poor seems to take place –in part– through direct parental socialization.

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purposeful socialization can be presented by the voluntary socialization decisions made by parents, including activities such as talking with children, participating in cultural groups, reading books, etc. Indirect socialization refers to the influence of society in general, including imitation of extended family, friends, teachers, celebrities...

<sup>2</sup>Bisin and Topa (2003) show the possibility of separating direct and indirect effects if the trait or attitude does not have a genetic component such as religious and ethnic traits.

Third, through the analysis of mediation, we show that parents' redistributive attitudes are important mediators for a set of known determinants such as the financial situation, the prospect of mobility, the region of residence, the education level and the political position. For example, the marginal effects of financial status decrease by between 15% and 31% after the introduction of mothers' and fathers' redistributive attitudes. The marginal effects of the region's average level of redistributive support decrease by between 24% and 39%. These results show the importance of taking into account the preferences of parents when conducting studies on demand for redistribution.

**Link to cultural transmission literature.** This work belongs to the literature of cultural evolution, and more specifically to the literature on intergenerational transmission. The intergenerational transmission of a very broad set of traits, values and preferences has been the subject of numerous empirical studies over the past decade ([Brenøe and Epper, 2018](#); [Bulte and Horan, 2011](#); [Dohmen et al., 2011](#); [Liu et al., 2018](#); [Necker and Voskort, 2014a,1](#)).<sup>3</sup> Intergenerational transmission is a part of the broader phenomenon of cultural transmission. To explain the persistence of heterogeneity regarding certain social values, [Bisin and Verdier \(2000b\)](#) provides a theoretical framework and historical examples, highlighting the central role of socialization in the long term distribution of traits in society.<sup>4</sup> Our work makes an important and new contribution to this literature by exploiting the transmission of attitudes towards redistribution.

**Link to preferences for redistribution literature.** This study is also part of the literature on the demand for redistribution. In the face of growing inequality in the world, interest in what determines people's attitudes to this issue has grown steadily. What drives individuals to be more or less in favour of redistribution depends on many factors (for a review of the literature see [Alesina and Giuliano, 2009](#); [Clark and D'Ambrosio, 2015](#);

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<sup>3</sup>For a literature review covering the period prior to 2011 see [Black and Devereux \(2010\)](#) and [Bisin and Verdier \(2011\)](#).

<sup>4</sup>In this line, we also refer to the psychological and social literature that exploits the role of the childhood period on the formation of values, particularly with regard to egalitarian and fairness traits. See [Fehr et al. \(2008\)](#) for the formation of egalitarian attitudes and [Almås et al. \(2010\)](#) for how social experiences shape children's equity preferences.

Magdalou, 2020). The starting point is the paradigm of rational choice, in which self-interest is what defines the individual level of support for redistribution. In addition to economic factors, some ideological, social and psychological attitudes are also identified as determinants such as political orientation Jæger (2008), inequality aversion Dimick et al. (2018) and risk attitudes Duch and Rueda (2015). In this literature, redistributive preferences were mostly assumed to be exogenous to political and social institutions.<sup>5</sup>

This study is the first to show that individual preferences for redistribution are endogenous to the family institution, that the preferences of parents and children are highly correlated. We also highlight that the effects of some well-known determinants of preferences for redistribution preferences are overestimated, by showing that their marginal effects decline considerably once controlled for by parental preferences. Another contribution to this literature is in showing that a segment of the population may not hold a clear position on taxation issues, pointing out the factors that increase the chances of holding an undecided opinion in this regard.

**Sections.** The document is organized as follows. Section 2 describes the data. Section 3 examines the correlation between the redistributive preferences of parents and children. Section 4 presents some tests on the impact of parents' socialization efforts on the transmission of redistributive attitudes. In Section 5, we present the analysis of mediation involving parental preferences and a set of typical determinants of support for redistribution. Section 6 concludes.

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<sup>5</sup>Welcome exceptions are the study of Alesina and Fuchs-Schündeln (2007) showing the effect of living under communism regime on shaping redistributive preferences, and the study of El Raffi and Volle (2019) on the effect of the political institutions upheaval in Egypt following the 25 January revolution on the attitudes towards redistribution. On the side of social institutions, we mention Piketty (1995) study where he establishes a link – but an indirect one – between the parents' experience of income mobility and the individual attitude towards redistribution. He explains this relationship by the fact that our perception of the role of effort in generation of income (an important determinant of preferences for redistribution) is shaped through a learning process by the income mobility experiences of our entourage.

## 4.2 Data

**Data base.** The German Socio-Economic Panel (SOEP) is a representative longitudinal survey of private households in Germany (Goebel et al., 2019). The SOEP interviewers conduct a separate in-person interview with each member of a household over the age of 17. In each wave, around 21,000 people are interviewed from over 11500 households. Even after leaving the household, SOEP follows the individuals, which allows having the same information for parents and children even after a change in family composition. We organized the data in a way that relates the children and their parents. The number of respondents with both parents participating in the 2005 wave is 3,539, making a total of 10,617 observations examined.

**Dependent variables.** The 2005 wave of the SOEP contains two questions measuring individual preferences for redistribution. These two questions address the individual's support for tax rates imposed on the "poor" and the "rich", respectively. The questions are as follows:

*“In Germany, everyone has to pay taxes in relation to his or her income. Those who earn more have to pay higher taxes (also known as “progressive taxes”).*

- 1. What do you think: Is the amount of taxes paid by an unskilled worker in Germany too much (1) compared to other groups, too little (2), or exactly appropriate (3), or you do not know (4)?*
- 2. And what do you think about the taxes paid by a manager on the board of directors of a large company? Does he or she pay too much (1), too little (2), or an exactly appropriate amount (3) in taxes compared to other groups or you do not know (4)?”.*

Even if respondents are not directly asked about their support for lower or higher taxes for these two categories, it is plausible to assume that considering a certain level of taxes to be "too high" means that the individual supports lower taxes in this case and so on for the other answers. Concerning the professions cited as examples "unskilled worker" and "manager on the board of directors of a large company", it is clear – considering

the previous introductory statement – that these categories are only used as examples to represent the low and high income categories and are not particularly targeted (these variables are also adopted by [Rainer and Siedler \(2008\)](#)).

As can be seen in Table 4.16 in the Appendix B, the share of missing values is very small (around 0.6%). We see also that fewer than 1% claim that the taxes paid by unskilled workers are too low or that the taxes paid by managers are too high.<sup>6</sup> The same table also indicates a high proportion of respondents (around 33% for each of the two questions) reporting no specific position regarding the two questions on taxation answering “Don’t know”. Due to this high proportion of undecided answers, the number of "child-father-mother" combinations in which each expresses a defined position with respect to the taxation of the poor (rich) is limited to 1,306 (1,348).<sup>7</sup>

As a result, two clear-cut positions concerning the taxation can be defined: the respondent either considers that taxes paid by the unskilled worker (the manager) are too high (too low) and then support more taxation on high-income individuals, or the respondent considers that the taxes paid by the unskilled worker (the manager) are reasonable and then do not support more taxation high-income individuals. We recode therefore the two questions as two binary variables  $P-RA$  and  $R-RA$ .<sup>8</sup>  $P-RA$  is a variable equals to 1 if the respondent supports lower taxes on the poor and 0 if the considers that that actual taxation on poor is reasonable.  $R-RA$  is a variable equals to 1 if the respondent support more taxes on the rich and 0 if he or she considers that the actual taxation on rich is reasonable.

***Descriptive statistics.*** Based on the Table 4.1, among those who take a clear stance on taxation issues, 63.55% (63.32%)(64.75%) of children (fathers)(mothers) support lower taxes on the poor and 69.21% (75.89%) (77.60%) of children (fathers)(mothers) support higher taxes on the rich.<sup>9</sup> The poor-redistributive attitudes and the rich-redistributive

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<sup>6</sup>This indicates that almost nobody in Germany support *less* redistribution (more taxes on poor or less taxes on rich).

<sup>7</sup>We examine in the third part 4.3.3 of the subsection 4.3.3 the determinants of the absence of clear attitudes towards these redistributive issues.

<sup>8</sup>P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes

<sup>9</sup>The proportions are very similar regardless of the sub-sample used.

attitudes are –as expected– highly correlated but far from being identical (phi coefficient equals to 0.2767). Therefore we conduct our analysis separately for each of the two variables.

About the age composition of our sub-sample, since the SOEP strategy is to follow children even after they have left their parents’ home, it is possible to use not only pre-adult individuals but also a large proportion of independent children of different ages and different occupational positions. For children whose parents’ answers on preferences for taxation are known, 39.76 % live in different households from both of their parents, 40.89% of children are not working, 53.35% of the children in our sample are older than 23 years of age, and the oldest child is 50.

**Table 4.1:** % Supporting redistribution (P-RA and R-RA)

Support for redistribution						
% supporting less taxes on poor			% supporting more taxes on rich			
Children	Fathers	Mothers	Children	Fathers	Mothers	
63.55	63.32	64.75	69.21	75.89	77.60	
N	1306	1306	1348	1348	1348	

In this table, regarding the taxation imposed on the poor, respondents are categorized into those who are in favor of reducing taxes on the poor and those who are not. Regarding taxation on rich, respondents are categorized into those who are in favor of increasing taxes on the rich and those who are not.

### 4.3 The correlation between the redistributive attitudes of children and parents

We study in this section the impact of the parent’s attitudes on the child’s attitudes regarding the two available redistributive attitudes in two separate subsections. In order to find whether a process of transmission of redistributive attitudes exists as expected by the models of transmission of preferences – and not only generated by the other intergenerational correlations– we control for the appropriate factors step by step.

### 4.3.1 Poor-redistributive attitudes

**Parent-Child Correlation.** We begin with the contingency tables 4.2 and 4.3 where we display the frequency distribution for the poor-redistributive attitudes of children over those of their fathers and mothers without any controls. As we can see the correlation is positive and very strong between the attitudes of children and parents: If we look at fathers as an example, we see that 74% of their children are in favor of lower taxes on the poor if they are too, while this percentage is only 47% among children whose fathers claim to be satisfied with the current levels of taxation on the poor. This correlation is a little bit stronger in the case of mothers.

**Table 4.2:** Poor-redistributive attitudes : Fathers-Children (%)

Less taxes on poor (%)		
	Child : No Favorable	Child : Favorable
Father : No Favorable	53.03	46.97
Father : Favorable	26.84	73.16

N=1306

**Table 4.3:** Poor-redistributive attitudes : Mothers-Children (%)

Less taxes on poor (%)		
	Child : No Favorable	Child : Favorable
Mother : No Favorable	56.79	43.97
Mother : Favorable	25.79	74.21

N=1306

In Table 4.4, we regress children's answers to the P-RA (the redistributive attitudes regarding poor) question on the answers of their respective mothers and fathers. The regression model we use is the linear probability model (LPM), where the binary dependent variable is the child's attitude towards the amount of taxes paid by poor (P-RA).<sup>10</sup>

<sup>10</sup>Marginal effects derived from regressions using logit and probit models yield qualitatively and quantitatively the same results (regressions available upon request). We find systematically that there is almost no difference, neither concerning the width of the effect nor concerning the significance of the effect. In

The key explanatory variables are the same attitude of mothers and fathers. We report robust standard errors, clustered at the family level to correct for possible correlation of the error term across individuals from the same household.

Column (1) of Table 4.4 shows that on average children are more likely to be against taxing poor when parents do. The coefficients for the variables representing mother's and father's preferences are both highly significant and very large indicating a strong relationship between child's and parent's poor-redistributive attitudes. This correlation is stronger between mothers and children than between fathers and children. An individual whose mother (father) is favorable to redistribution to poor have 25.9% (13.6%) more chances to hold this attitude than an individual whose mother (father) is not favorable for redistribution to poor. In the following columns, we examine whether parents' and children's attitudes are still related once we control for a number of factors that are both related to preferences for redistribution and correlated across generations (to get rid of possible spurious correlation).

**Control for socio-economic factors.** In Column (2) of Table 4.4, in order to control for parents-children similarity in socio-economic characteristics, we add a set of socio-economic factors considered as determinants of preferences for redistribution which are the financial situation, the level of education and the prospect of upward mobility (see [Alesina and La Ferrara, 2005](#); [Benabou and Ok, 2001](#); [Clark and D'Ambrosio, 2015](#)).<sup>11</sup> This allows investigating whether parental and child attitudes are still related, once we control for similarity in socio-economics characteristics. In fact, because of the "social reproduction" phenomenon the children of the well-off and highly educated individuals 

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fact, [Andreß et al. \(2013\)](#) show that when the distribution of the dependent variable is not too skewed – which is our case –, the linear models practically leads results very close to those of the no linear models. For a further discussion about the linear probability model see also [Wooldridge \(2010\)](#), and for recent applications using this model see [Brenøe and Epper \(2018\)](#) and [Heineck and Süßmuth \(2013\)](#). The important advantage of using the linear probability model is the easier interpretation of coefficients compared to the logit and probit models.

<sup>11</sup>The prospect of upward mobility is revealed by the question on individual perceptions about own future mobility for which the answers are: Optimistic; More Optimistic Than Pessimistic; More Pessimistic Than Optimistic; Pessimistic.

tend to have higher salaries and levels of education (see [Solon, 2002](#)), which could potentially explain a similarity in the redistributive attitudes. According to column (2), after controlling for the socio-economic characteristics of child, the coefficients of the parents attitudes remain significant and virtually the same as in Column (1). According to literature, the results indicate that well-off and optimistic children are significantly more likely to report that they consider the taxes paid by poor as too big.

**Control for attitudes.** In Column (3) of Table 4.4, we add a set of psychological and ideological characteristics that have been studied in the literature for their impact on support for redistribution. The four attitudes we choose are the perception of the role of luck on success ([Fong, 2006](#); [Lefgren et al., 2016](#); [Piketty, 1995](#); [Tirole, 2006](#)), the attitude towards reciprocity ([Bowles et al., 2000](#); [Fong, 2001](#)), the attitudes towards risk ([Gärtner et al., 2017](#)) and the political orientation ([Alesina et al., 2018b](#)).<sup>12</sup> In fact, some of these preferences are transmitted from parents to children, such as the risk and the political attitudes ([Alford et al., 2005](#); [Dohmen et al., 2011](#)). The results are consistent with previous findings in the literature: individuals counting on luck, showing a positive attitude of reciprocity, risk-averse and leftist are more likely to support lower taxes on the poor than their counterparts. However, only the effect of the perception of the role of effort is statistically significant. More importantly, the positive relationship between the positions of children and both parents regarding the taxation on poor remains virtually the same as in column (2).

**Control for the socio-economic situation of parents.** In Column (4) of Table 4.4, we add the variables related to the socio-economic situation of parents. Indeed, according to [Klor and Shayo \(2010\)](#), [Dimick et al. \(2017\)](#), [Dimick et al. \(2018\)](#) and [Epper et al. \(2020\)](#) the attitudes towards redistribution are impacted by altruistic and egalitarian motivations, thus establishing a relationship between other-regarding preferences and support for redistribution: a worse economic situation of the parents could then increase the chance of supporting lower taxes on the poor. Therefore, we need also to control for

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<sup>12</sup>To a detailed description of the variables, the exact questions and how we code it see the related section in Appendix A.

these confounding factors. The results in Column (4) do not show any statistically significant effect of the parents' socio-economic characteristics on children's attitudes and show that the positive correlation between children's and parents' attitudes towards taxation on poor remains virtually the same as in Column (3).

**Control for fixed effects regions.** We control for the region of residence in Column (5). In fact, as showed by [Alesina et al. \(2019\)](#), there is a great disparity between regions of the same country regarding the public level of demand for redistribution especially in Germany: East German regions show much higher rates of support for redistribution than West German regions.<sup>13</sup> Regarding the poor-redistributive preferences, we see clearly in [Table 4.17](#) that is varying between regions and that the percentage of individuals supporting less taxes on poor in the East Germany regions is higher compared to the West Germany regions (68% vs 58% in average; the lowest percentage is for Hamburg (37%) and the highest is for Saxony-Anhalt (69%)). However, even after controlling for the regional fixed effects in the Column (5), the marginal effects still just as large and the coefficients significant.

**Summary.** In summary, the results show that the attitude of parents towards the taxes paid by poor are substantially reflected in the attitudes of the child and thus provide an evidence on the presence of an intergenerational transmission of redistributive attitudes. In addition to being statistically significant, and robust to the addition of a large set of controls, the strength of intergenerational transmission of attitudes is of considerable magnitude, especially when compared to the effects of the other well-known determinants of redistributive preferences (the highest). For example, the impact of mothers' attitudes is about three times greater than the impact of the financial situation. (0.206 vs 0.07). Having both parents supporting more taxation on poor increase the probability of holding this attitude by 38% compared to ones whose two parents consider taxes paid by rich are reasonable (regression not reported).

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<sup>13</sup>The variable used in ESS to reveal the individual demand for redistribution is on the extent of support carried to reduce income disparities.

**Table 4.4:** Poor-redistributive child's attitude

Child's Poor-redistributive attitude	(1)	(2)	(3)	(4)	(5)
Father's Poor-redistributive attitude	0.162***	0.150***	0.157***	0.160***	0.158***
Mother's Poor-redistributive attitude	0.241***	0.234***	0.224***	0.212***	0.206***
<b>Socio-economic factors</b>					
<i>Financial situation</i>					
Average financial Situation		-0.0452	-0.0560	-0.0461	-0.0484
Good Financial Situation		-0.0930**	-0.0904**	-0.0832*	-0.0824*
<i>Education level</i>					
High School		0.0444	0.0252	0.0248	0.0212
More than High School		-0.0679	-0.0768	-0.0699	-0.0724
In School		-0.0140	-0.0169	-0.0152	-0.0174
Optimistic About Future		-0.0825***	-0.0693**	-0.0648*	-0.0600*
<b>Attitudes</b>					
<i>Role of luck on success</i>					
Luck is Partially Important			0.0493	0.0457	0.0513
Luck is Important			0.113**	0.109**	0.116**
Respect reciprocity			0.00311	-0.000761	0.000357
<i>Risk Aversion</i>					
Moderately risk averse			0.00261	0.0120	0.00607
Risk lover			0.0495	0.0573	0.0479
<i>Political position</i>					
Centrist			-0.0240	-0.0379	-0.0398
Rightist			-0.0352	-0.0439	-0.0514
<b>Socio-economic (Parents)</b>					
Average financial Situation (Father)				-0.0626	-0.0488
Good financial Situation (Father)				0.00340	0.0209
Average financial Situation (Mother)				0.0391	0.0290
Good financial Situation (Mother)				-0.0210	-0.0353
High School (Father)				0.0187	0.0153
More than High School (Father)				0.0162	0.0176
High School (Mother)				-0.0358	-0.0393
More than High School (Mother)				-0.0651	-0.0694
Optimistic About Future (Father)				-0.0475	-0.0447
Optimistic About Future (Mother)				0.0302	0.0372
Constant	0.375***	0.506***	0.472***	0.521***	0.517***
Additional Controls	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Observations	1306	1272	1129	1092	1092
R <sup>2</sup>	0.115	0.138	0.143	0.150	0.158

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

The dependent variable in all columns is the child's redistributive attitude towards taxation on poor. Additional controls include indicator variables for gender and fixed effects for region. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 waves to replace the missing values for the following variables: the financial situation and the level of education. The reference groups for the following variables financial situation, the education level, the role of luck on success, risk aversion, political position are respectively: the less fortunate, the less educated, people who think that luck is a not important factor, risk-averse individuals and the leftist.

### 4.3.2 Rich-redistributive attitudes

**Parent-Child Correlation.** We now turn to the second component of the demand for redistribution which is the attitudes towards the taxes paid by the rich (rich-redistributive attitudes). The tables 4.5 and 4.6 show the strong relationship between the rich-redistributive attitudes of parents and those of the children. Contrary to the poor-redistributive attitudes, the correlation is a slightly stronger in the case of fathers compared to mothers.

**Table 4.5:** Rich-redistributive attitudes : Fathers-Children (%)

More taxes on rich (%)		
	Child : No Favorable	Child : Favorable
Father : No Favorable	56.00	44.00
Father : Favorable	22.78	77.22

N=1348

**Table 4.6:** Rich-redistributive attitudes : Mothers-Children (%)

More taxes on rich (%)		
	Child : No Favorable	Child : Favorable
Mother : No Favorable	52.32	47.68
Mother : Favorable	24.57	75.43

N=1348

In Table 4.7, the dependent variable is the binary variable on the individual's attitude towards tax rates on the rich (R-RA). The two variables of interest are the attitudes of mothers and fathers towards the same issue. We apply the same empirical specifications and controls adopted in the previous subsection. The coefficients are significant and their magnitude are large (similar to the poor-redistributive attitudes ones) indicating the presence of an intergenerational correlation: as was the case with redistributive preferences for the poor, children's attitudes about taxes paid by the rich are strongly related to the attitudes of mothers (12.5% more likely to support more taxes on rich if mother thinks so) and fathers (24.6% more likely to support more taxes on rich if father thinks so) on this issue no matter the factors we control for. An interesting difference, however,

is that the coefficient for father is significantly larger than the coefficient for mother in the case of rich-taxation attitudes (p-value  $<0.0825$ ), contrary to case of attitudes towards taxation on poor (p-value  $<0.2926$ ).<sup>14</sup>

**Determinants are different between P-RA and R-RA.** Regarding the impact of the factors included in Table 4.7 on the preferences for taxation related to the rich, even we notice that the signs of the coefficients do not differ from what we found in the previous section on preferences for redistribution associated with the poor (Table 4.4), the magnitude and significance of some coefficients differ greatly. The variables in question are the level of education, the political orientation and the perception of mobility. Based on Columns (5) of Tables 4.4 and 4.7, we find that the highly educated are 12.8% more likely to support an increase in taxes on the rich compared to the lowly educated, while the difference is about 7.24% regarding the attitude to taxation on the poor (not statistically significant). The same pattern can be drawn regarding the political orientation: right-wing and left-wing people seem to be –slightly– more divided on taxation on the rich than on taxation on the poor. While a person declaring himself to be a leftist is only 5.13% more likely to be in favor of decreasing taxes on the poor than a rightist (not statistically significant), this probability rises to 6.96% when the issue of taxing the rich is raised. Finally, our results (Column 5, Table 4.7) indicate that the correlation between perception of personal mobility and the attitude towards taxing the rich is practically non-existent (coefficient equal to 0.00523), while there is a significant relationship between this perception and the attitude towards taxing the poor (Column 5, Table 4.4): a pessimist about his future is 6% more likely to support less taxation on the poor than an optimist. This difference could indicate that the impact of perception of mobility on preferences for redistribution is essentially explained by an assurance motive.

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<sup>14</sup>We use the *ttest* command in Stata to test on the equality of means (Student t-statistic).

**Table 4.7:** Rich-redistributive child's attitude

Child's Rich-redistributive attitude	(1)	(2)	(3)	(4)	(5)
Father's Rich-redistributive attitude	0.263***	0.262***	0.248***	0.247***	0.246***
Mother's Rich-redistributive attitude	0.142***	0.136***	0.137***	0.140***	0.125***
<b>Socio-economic factors</b>					
<i>Financial situation</i>					
Average financial Situation		-0.0552	-0.0687*	-0.0767*	-0.0806*
Good Financial Situation		-0.0730**	-0.0781**	-0.0868**	-0.0812**
<i>Education level</i>					
High School		-0.0547*	-0.0629*	-0.0470	-0.0440
More than High School		-0.156***	-0.152***	-0.137**	-0.128**
In School		-0.0387	-0.0829*	-0.0685	-0.0656
Optimistic About Future		-0.0143	-0.0118	-0.00360	-0.00523
<b>Attitudes</b>					
<i>Role of luck on success</i>					
Luck is Partially Important			0.0525*	0.0475*	0.0497*
Luck is Important		0.106**	0.0987**	0.108**	
Respect reciprocity			0.0389	0.0349	0.0329
<i>Risk aversion</i>					
Moderately risk averse			-0.00174	0.0146	0.0113
Risk lover			-0.00591	0.00588	0.00914
<i>Political position</i>					
Centrist			-0.0328	-0.0374	-0.0327
Rightist			-0.0765**	-0.0743**	-0.0696*
<b>Socio-economic (Parents)</b>					
Average financial Situation (Father)				0.0101	0.0229
Good financial Situation (Father)				0.0165	0.0301
Average financial Situation (Mother)				0.0355	0.0334
Good financial Situation (Mother)				0.0226	0.0205
High School (Father)				0.000374	-0.0165
More than High School (Father)				-0.0646	-0.0799
High School (Mother)				-0.0739**	-0.0838**
More than High School (Mother)				0.00714	-0.00600
Optimistic About Future (Father)				-0.0264	-0.0210
Optimistic About Future (Mother)				0.0219	0.0323
Constant	0.383***	0.515***	0.507***	0.520***	0.527***
Additional Controls	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Observations	1348	1311	1167	1135	1135
R <sup>2</sup>	0.107	0.117	0.130	0.145	0.157

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

The dependent variable in all columns is the child's redistributive attitude towards taxation on poor. Additional controls include indicator variables for gender and fixed effects for region. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 waves to replace the missing values for the following variables: the financial situation and the level of education. The reference groups for the following variables financial situation, the education level, the role of luck on success, risk aversion, political position are respectively: the less fortunate, the less educated, people who think that luck is a not important factor, risk-averse individuals and the leftist.

### 4.3.3 Additional tests

#### **Correlation between the attitudes of father and mother: to what extent they explain each other regarding their impact on child preferences?**

One important issue is to explore to what extent the impacts of father's and mother's attitude on child one are explained by each other. In fact, [Bisin and Verdier \(2011\)](#) explain how the male and the female – driven by their mating behaviour – look for a partner with whom he (she) shares a maximum of attitudes.<sup>15</sup> One of the implications of such behaviour is the presence of a correlation between the attitudes of fathers and the attitudes of mothers. We test the presumption of "assortative mating" for preferences for redistribution by comparing the coefficients obtained where we regress respondents' preferences on the attitudes of both parents at the same time (as done in [Table 4.4](#) and [4.7](#)) to the coefficients obtained when we regress respondents' attitudes on only one of the parents' attitudes ([Table 4.8](#)).

As can be seen in columns (2) and (3) of [Table 4.8](#), the coefficients of parents' attitudes regarding taxation on poor included alone are larger compared to the column (1) when both parents' attitudes are included at the same time. The coefficient of father's poor-redistributive attitude is about 33% smaller when mother's attitude is included in the regression compared to when mother's attitude is excluded (p-value<0.01). The coefficient of poor-redistributive mother's attitude is about 22.5% smaller when father's attitude is included in the regression compared to when father's attitude is excluded (p-value<0.01). The same result arises with regard to attitudes towards taxation on the rich (columns (4), (5) and (6) in [Table 4.8](#)): the coefficients of the rich-redistributive attitudes of father and mother estimated jointly are respectively 20% and 49,5% lower than those obtained by estimating each of them alone (p-value<0.01). These results indicate a strong correlation between the attitudes of fathers and mothers regarding redistribution, and that including the attitudes of both parents in the regression analysis is necessary in order to identify the distinct influences of mother's and father's attitudes on the child's attitude.

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<sup>15</sup>More assorted parents increases the likelihood of passing on their own attitudes to their offspring.

**Table 4.8:** Effects of mothers and fathers attitudes without control for each other

	Child's P-RA			Child's R-RA		
	(1)	(2)	(3)	(4)	(5)	(6)
	Both Parent's attitudes	Only father's attitudes	Only mother's attitudes	Both Parent's attitudes	Only father's attitudes	Only mother's attitudes
Father's P-RA	0.158***	0.237***				
Mother's P-RA	0.206***		0.266***			
Father's R-RA				0.246***	0.308***	
Mother's R-RA				0.125***		0.248***
Qui-square test (p-value)	ref	0.00	0.00	ref	0.00	0.00
N	1092	1092	1092	1135	1135	1135

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

P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes. All Regressions are controlled in the same way as in the columns (5) of the Table 4.4 and 4.7. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 attitudes to replace the missing values for the following variables: the financial situation and the level of education.

### The multidimensional intergenerational transmission of preferences for redistribution : The independence of the P-RA and R-RA channels

As showed in section 4.2, the individual positions towards taxation on poor and towards taxation on rich are correlated, and that applies to parents as well. Therefore, we wonder if there is a correlation between the transmissions of the two attitudes under study: it is possible that the transmission of one of these two attitudes is explained by the transmission of the other. Such correlation indicates the possibility that one of the factors is a confounding factor for the other, or that there is a third endogenous variable that explains the transmission of both attitudes. To examine this hypothesis we estimate in the Table 4.9 the effect of the rich-redistributive attitudes (poor-redistributive attitudes) of parents on the poor-redistributive attitudes (rich-redistributive attitudes) of child controlling for child's poor-redistributive attitudes (rich-redistributive attitudes) (Columns 2 and 4).

As reported in table 4.9, once we control for the rich-redistributive preferences of the respondent, the parents' attitudes towards taxation on rich have no significant effect

on child's poor-redistributive attitude (Column 2). More importantly the coefficients of mother's and father's poor-redistributive attitudes remain positive and highly significant and similar to those obtained without controlling for rich-redistributive attitudes (Column 1). Same goes for the correlation between the poor-redistributive attitudes of parents and the rich-redistributive attitude of child (Columns 3 and 4).

These results indicate that, although these two attitudes are highly correlated and are part of a more general concept which is the "preferences for redistribution", the channels of transmission – with respect to these two attitudes – from parents to children are independent, meaning that the transmission of redistributive preferences is a fine-tuned and multidimensional process. It is also a form of robustness check: if this relationship between parents' and children's attitudes were due to the presence of a third factor (a confounding factor) that we do not control for, then a strong relationship would exist between the parents' poor redistributive attitudes (rich redistributive attitudes) and children's rich redistributive attitudes (poor redistributive attitudes), which is not the case here. It also shows the importance of studying these two factors separately.

**Table 4.9:** Each transmission process is independent of the other

	(1) Children's P-RA	(2) Children's P-RA	(3) Children's R-RA	(4) Children's R-RA
Father's P-RA	0.158***	0.132***		-0.0546
Mother's P-RA	0.206***	0.193***		0.00403
Children's R-RA		0.283***		
Father's R-RA		-0.00216	0.246***	0.207***
Mothers's R-RA		-0.0744	0.125***	0.133***
Children's P-RA				0.268***
Observations	1092	900	1135	900
$R^2$	0.158	0.225	0.157	0.228

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

P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes. All Regressions are controlled in the same way as in the columns (5) of the Table 4.4 and 4.7. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 attitudes to replace the missing values for the following variables: the financial situation and the level of education.

## **Do not have an opinion in redistribution: the determinants**

We noted in the section 4.2 that there is a very high number of respondents declaring that they "Do not Know" as a response to the questions on taxation (37% of the children; 37% of their mothers and 24% of their fathers concerning the Poor-RA question and similar percentage concerning the Rich-RA question, see Table 4.16 in Appendix B). To date – as far as we know – no study has been done on what factors increase the the probability of simple formation of preferences of redistribution, i.e the likelihood of having a clear and well-defined position on this issue.<sup>16</sup> However, in the real world, the level of awareness of the issue of redistribution is very heterogeneous among people. In this section we try to determine which groups of people are most likely to have a clear attitude towards redistribution while testing whether there is an intergenerational correlation between parents and children at this level.

The dependent variable in the Column (1) of Table 4.10 is a binary variable equals to 1 if the respondent is giving "don't know" as an answer to the taxation question related to poor and 0 if he or she shows a clear attitude. In Column (2), the dependent variable is a binary variable equals to 1 if the respondent is giving "don't know" as an answer to the taxation question related to rich and 0 if he or she shows a clear attitude. Respective variables concerning fathers and mothers are generated and used in the regressions. The Column (1) shows that individuals whose fathers give a "Do not know" answer, whose mothers give a "Do not know" answer, the less educated, those who are still in school, the risk averse, the centrist and women are more likely to do not hold a defined position towards the taxation on poor compared to their counterparts. The financial situation shows no significant effect: the poor are not more likely than the rich to form a clear position on taxation on poor. We obtain qualitatively similar results in the column (2) regarding the taxation on rich.

These results show first of all that not having a clear position towards redistribution is not "random": the formation of redistributive preferences depends on several factors.

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<sup>16</sup>In the vast majority of surveys, the option of answering "I don't know" to questions related to the demand for redistribution is not available.

Second, these results provide further evidence on the correlation between the attitudes of parents and children: the individual whose parents do not have a clear position towards redistribution is more likely to adopt the same position.

**Table 4.10:** "No opinion" on preferences for taxation determinants

	(1) No opinion (P-RA): Child	(2) No opinion (R-RA): Child
No opinion (P-RA) : Father	0.117***	
No opinion (P-RA) : Mother	0.0916***	
No opinion (R-RA) : Father		0.128***
No opinion (R-RA) : Mother		0.121***
<i>Financial situation</i>		
Average financial situation	-0.0178	0.0312
Good financial situation	-0.0345	-0.00175
<i>Educational level</i>		
High school	-0.0819***	-0.0893***
More than High School	-0.144***	-0.183***
In School	0.119***	0.0815**
Optimistic about future	0.00303	0.00495
<i>Role of luck on success</i>		
Luck is partially important	0.00849	0.00873
Luck is very important	0.00447	0.0204
Respect reciprocity	-0.0291	-0.0190
<i>Risk aversion</i>		
Moderately risk averse	-0.0370	-0.0327
Risk averse	-0.0572**	-0.0608**
<i>Political position</i>		
Centrist	0.0767***	0.0811***
Rightist	-0.0261	-0.000193
High school (Father)	0.0679**	0.0387
More than high school (Father)	0.0883**	0.0192
High school (Mother)	0.0428*	0.0444*
More than high school (Mother)	0.0707**	0.0775**
Woman	0.328***	0.337***
Constant	-0.757***	-0.821***
Observations	2770	2758
Pseudo $R^2$	0.080	0.084

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

No opinion (P-RA) is a dummy equals to 1 if the individual has no position towards the taxation on poor, and 0 if he or she has a defined position. No opinion (R-RA) is dummy equals to 1 if the individual has no position towards the taxation on rich, and 0 if he or she has a defined position. We control for the fixed effects regions and for the socio-economic situation of parents. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 attitudes to replace the missing values for the following variables: the financial situation and the level of education.

**Table 4.11:** Heterogeneous effects: Place of living (with parents or not)

	Child's Poor-RA		Child's Rich-RA	
	Live with parent(s) (1)	Live outside (2)	Live with parent(s) (3)	Live outside (4)
Father's Poor-RA	0.186***	0.105**		
Mother's Poor-RA	0.247***	0.203***		
Father's Rich-RA			0.231***	0.264***
Mother's Rich-RA			0.148***	0.124**
N	656	473	674	493

We control for the individual socio-economic situation, the social attitudes, and the region of residence. The risk aversion attitude is obtained from the 2004 wave of the SOEP. We rely on the 2004 and 2006 attitudes to replace the missing values for the following variables: the financial situation and the level of education.

### Does the parent-child correlation on redistributive attitudes depend on whether or not the child lives with his or her parents?

One of the questions that arises is whether this correlation is just due to the fact that parents and children live in the same place or whether this correlation also applies to children who left their parents' house. We test this hypothesis by comparing the effect of the parent's attitudes on the child's attitudes between the respondents living with at least one of their parents and their counterparts (see Table 4.11). We control for the individual socio-economic factors, the personal attitudes and the region of residence.<sup>17</sup>

The results in Table 4.11 show that the correlations between parental and children's preferences regarding taxation on the rich are almost the same between individuals who live with at least one of their parents and those who reside elsewhere (Columns (3) and (4)). For attitudes toward taxation on poor (Columns (1) and (2)), child-mother correlations between those who live and those who do not live with their parents are fairly close. Only the correlation between children's and fathers' attitudes to the taxation of the poor differs considerably depending on whether or not the child lives with his or her

<sup>17</sup>In this sub-sub-section, we divide the 16 regions into 3 groups according to the average level of support for redistribution as shown in to Table 4.17.

parents (0.186 vs 0.105), although it should be noted that this difference is not statistically significant (interaction terms not reported).

## 4.4 Channels of transmission of preferences: direct socialization vs indirect socialization

In the previous section, we established the fact that a strong correlation exists between parents and children regarding preferences for redistribution. In this section, we take a step forward in understanding this process of preferences transmission by trying to figure out which of the two direct or indirect socialization is driving this transmission. The direct socialization refers to the socialization carried out voluntarily by the parents, while indirect socialization refers to influences coming from the social environment. As discussed by [Bisin and Verdier \(2011\)](#) the efficiency of parental voluntary socialization depends on the quality of signal children receive from their parents: a clearer signal, increases the likelihood of passing on attitudes from parents to children through the direct socialization channel.

As showed by the same authors, several factors contribute to the quality of this signal and then to the efficiency of the family socialization: the homogeneous couples (father and mother holding the same attitudes towards taxation), the nature of relationship between parents and children, having siblings or not and the gender. In fact, if parents hold the same attitudes the child will get a clearer signal, increasing the likelihood of passing on attitudes from parents to children. Same goes for the nature of relationship between parents and children, a good relationship (compared to if this relationship is bad) facilitate the parental socialization. The effectiveness of the family socialization depends also on the number of children: since socialization is costly in terms of effort and time, having more children negatively affects transmission efficiency compared to have fewer children. Concerning the gender of the child, it has been observed –within the process of family socialization– that sons are more likely to imitate their fathers, while daughters are more likely to take their mothers as models. Therefore, it can be assumed that a transmission in which these factors play no role in the strength of the intergenerational correlation

indicates a very high probability that direct socialization plays no role in this transmission.

Relying on these factors as proxies for the direct socialization efficiency, we run an heterogeneous analysis examining if the strength of transmission of attitudes depends on these proxies (tables 4.12 and 4.13).<sup>18</sup> If systematic differences in the correlations of parent-child preferences are detected, it can be deduced that a part of the transmission takes place through direct and voluntary family socialization. If it turns out that the intergenerational correlation is independent of these proxies, we conclude then that the parental socialization does not play an important role, and that the other type of socialization –socialization through society– occupies the most prominent place in the transmission process.<sup>19</sup>

#### **4.4.1 The process of transmission of attitudes towards taxation on poor**

As presented in Table 4.12, we compare the father-child correlation regarding the preferences towards taxation on poor when the mother support less taxation on poor (column (1)) to the case when the mother is not favorable to such reduction of taxes on poor (column (2)). We do also the same for the mother-child correlation regarding the preferences towards taxation on poor (columns (3) and (4)). We clearly see that the coefficients of the father and mother preference variables are higher when both parents are in favour of reducing taxes on the poor (columns (1) and (3) compared respectively to (2) and (4)). This difference is of the order of 54% for fathers and 33% for mothers. The impact of the father’s attitude is even statistically insignificant (at the 10% level) when the mother is not in favour of taxing the poor (column 2).

In columns (5), (6) and (7) we test the impacts of parental attitudes separately for children who have had a good relationship with both parents at 15, the children that they

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<sup>18</sup>We control in these two tables only for the determinants having significant effects reported in tables 4.4 and 4.7. The F-test about the jointly significance of the dropped variables justify this choice (p-value=0.338 regarding Poor-RA and p-value=0.200 regarding Rich-RA).

<sup>19</sup>Dohmen et al. (2011) used these proxies following similar strategy to compare the impact of socialization process on the transmission of risk and trust attitudes to the impact of genetics mechanisms.

were in trouble with their father or mother, and children who were in trouble with both parents.<sup>20</sup> For those who had a good relationship with their parents (column (5)), the father-child correlation is particularly strong (0.293), while for children who had fought with their parents as children (column (7)), this correlation drops to 0.046. For the mother-child correlation, the opposite is observed: the mother-child correlation is much stronger in the case where the individual's childhood was characterized by problems with the parents (column (7)) compared to other situations (columns (5) and (6)).

Now we turn to the differential effect of parents' preferences regarding family composition. Comparing columns (8) and (9), we notice an important difference in the effect of the father's preferences on the attitudes of respondents: the effect is larger for the single children compared to children with siblings. No significant difference is detected in this regard concerning the effects of the mother's preferences on the attitudes of respondents: the correlation between child and mother is essentially the same for single children and children with siblings. We also study whether fathers (mothers) have a greater impact on the child if he is a son (daughter) than if she is a daughter (son): columns (10) and (11) supports this hypothesis for the father-child correlation ( $0.186 > 0.082$ ) but not for the mother-child correlation. The son is more likely, relative to the daughter, to have the same attitudes as the father regarding the taxation of the poor.

These results provide a strong support for the hypothesis that a part the transmission process of the attitudes towards taxation on poor from father to child is happening through the direct and voluntary channel (the family socialization). However, for the transmission of poor-redistributive attitudes from mother to child, based on these results, the relevance of direct socialization seems much less important and then giving a considerable role for indirect socialization.

#### **4.4.2 The process of transmission of attitudes towards taxation on rich**

In Table 4.13, we go through the regressions of Table 4.12 again, but this time with rich-redistributive attitudes as the dependent variable. In summary, taking into account

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<sup>20</sup>The question in the survey is: "Did you argue or fight with father(mother) when you were 15?".

all the information provided in the columns of this table, no clear pattern can be drawn regarding the heterogeneity of the parents-child correlation –of attitudes towards taxation on poor– with respect to the factors taken as indicators of the effectiveness of family socialization. The father-child correlation is found to be sometimes stronger for groups of children benefiting from conditions favorable to family socialization (as is the case for children who have had a good relationship with parents at 15) compared to other groups, and sometimes the opposite (as is the case for heterogeneous families). Same goes for the mother-child correlation, the results are only ambiguous. Single children are more impacted by the preferences of mother regarding taxation on rich than the children having siblings, which provide some support for the importance of family socialization channel, but in the other side we notice that the impact of mother’s preferences is almost the same for sons and daughters and that the individuals who were in trouble with their both parents are more impacted by the mother’s preferences compared to their counterparts.

These ambiguous results cast strong doubt on the relevance of direct family socialization as a driver for the transmission of rich-redistributive attitudes. This then puts forward the indirect socialization generated by social interactions as the dominant transmission mechanism regarding rich-redistributive attitudes. By bringing together the results we have for the rich-redistributive and poor-redistributive attitudes, we conclude that indirect socialization is a stronger means of preferences transmission than direct family socialization.

**Table 4.12:** Evidence of mechanisms of socialization (Poor-RA)

Child's Poor-redistributive attitudes											
Dependant variable	Similarity 1		Similarity 2		Relationship			Siblings		Gender	
	Mother favorable (1)	Mother not favor (2)	Father favorable (3)	Father not favor (4)	No Fight (5)	Fight one (6)	Fight both (7)	No (8)	Yes (9)	Male (10)	Female (11)
Father's Poor-RA	0.181***	0.083			0.293***	0.1031	0.046	0.153***	0.035	0.186***	0.082*
Mother's Poor-RA			0.279***	0.178***	0.118	0.153*	0.279***	0.244***	0.2169**	0.226***	0.227***
N	838	437	807	468	231	177	277	1113	141	718	557

P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes. For these regressions, we control for the variables having statistically significant coefficients in the column (3) of the Table 4.4: the gender, the region of residence, the financial situation, the perception of future mobility and the perception of the role of luck and effort in success.

**Table 4.13:** Evidence of mechanisms of socialization (Rich-RA)

Child's Rich-redistributive attitudes											
Dependant variable	Similarity 1		Similarity 2		Relationship			Siblings		Gender	
	Mother favorable (1)	Mother not favor (2)	Father favorable (3)	Father not favor (4)	No Fight (5)	Fight one (6)	Fight both (7)	No (8)	Yes (9)	Male (10)	Female (11)
Father's Rich-RA	0.213***	0.299***			0.343***	0.334***	0.163**	0.251***	0.297**	0.239***	0.263***
Mother's Rich-RA			0.092*	0.181***	0.184**	-0.049	0.251***	0.140***	-0.015	0.125***	0.138**
N	992	289	975	306	242	181	289	1118	148	728	560

P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes. For these regressions, we control for the variables having statistically significant coefficients in the column (3) of the Table 4.7: the gender, the region of residence, the level of education, the perception of the role of luck and effort in success and the political position.

## 4.5 Mediation analysis : Parent’s redistributive attitudes as confounders.

As discussed in the section 4.3, the literature on preferences for redistribution has succeeded in revealing a large number of determinants. Among the most emblematic determinants are the economic status of the individual, the prospect of future mobility, the level of education, the ideological positions and the region residence, variables that have withstood a large range of controls.<sup>21</sup> Another aspect of these variables is that they are intergenerationally correlated: rich parents are more likely to have rich children than poor parents, and the same goes for the other variables (see Brenøe and Epper, 2018; Dohmen et al., 2011; Restuccia and Urrutia, 2004; Solon, 2002). Subsequently, parents’ attitudes towards redistribution can be considered as potential confounding variables, since they are correlated with the dependent variable (preferences for redistribution) and with our explanatory variables of interest (the determinants).

*Empirical strategy.* In this section, we explore this hypothesis by conducting a mediation analysis comparing the correlations between the explanatory variables of interest and children’s attitudes toward taxation on poor (Table 4.14) and on rich (4.15) when controlling for parental preferences versus when not controlling. In the first column of each of the two tables, we regress the redistributive attitude of children on the variables having significant effects on the corresponding attitude.<sup>22</sup> In the second column we add the parent’s redistributive attitudes. The same sample is used in both columns for the comparison. Column 3 presents the difference (by %) between the reduced-model coefficients and the full-model coefficients. These differences represent the indirect effect of the addressed explanatory variables on the dependent variables captured by the preferences of the parents. We investigate whether parents’ redistributive attitudes explain some of the effects of the well-known determinants of redistributive preferences. For example, if

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<sup>21</sup>In this part of the study, regions in Germany were divided into three categories: regions with low rates of demand for redistribution, regions with medium rates, and regions with high rates of demand for redistribution.

<sup>22</sup>We run series of Wald-test to determine –for each of the two dependent variables– which group of variables are jointly insignificant in order to exclude them from the model.

the effect of financial status declines after adding parental redistributive attitudes, then it can be stated that part of the effect of financial status on redistributive attitudes is confounded by the redistributive attitudes of parents.

**Table 4.14:** Controlling for the parent's poor attitudes

Poor-redistributive attitude (P-RA)	(1) Reduced model	(2) Full model	(3) Difference%
<i>Financial situation</i>			
Average financial Situation	-0.043	-0.033	-18%
Good Financial Situation	-0.115***	-0.076*	-31%
Optimistic About Future	-0.113***	-0.080***	-26%
<i>Role of luck on success</i>			
Luck is Partially Important	0.067**	0.057**	13%
Luck is Important	0.172***	0.147***	14%
<i>Region of residence</i>			
Moderate P-RA regions	0.065**	0.038	39%
High P-RA region	0.109***	0.080**	24%
Father's Poor-redistributive attitude		0.140***	
Mother's Poor-redistributive attitude		0.230***	
Observations	1275	1275	
$R^2$	0.044	0.139	

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

Poor-redistributive attitudes: attitudes towards taxation on poor. For these regressions, we control for the variables having statistically significant coefficients in the column (3) of the Table 4.4: the gender, the region of residence, the financial situation, the perception of future mobility and the perception of the role of luck and effort in success. The reference group of the variable *Region of residence*, is the regions with the lowest rate of public support for reducing taxation on poor.

**Regarding the Poor-RA.** With regard to attitudes towards taxing the poor, as can be seen in the Table 4.14, the inclusion of parental attitudes leads to remarkable changes to the factors' coefficients. Some coefficients change slightly (<20%) as for the effect of

**Table 4.15:** Control for the parent's rich attitudes

Rich-redistributive attitudes (R-RA)	(1) Reduced model	(2) Full model	(3) Difference %
<i>Financial situation</i>			
Average financial situation	-0.064	-0.052	-15%
Good financial situation	-0.087**	-0.055	-31%
<i>Education level</i>			
High School	-0.048	-0.048	0%
More than high school	-0.138**	-0.438***	15%
In school	-0.056	-0.035	-31%
<i>Political position</i>			
Centrist	-0.004	-0.012	—
Rightist	-0.078**	-0.056*	-27%
<i>Role of luck on success</i>			
Luck is partially important	0.062**	0.064**	0%
Luck is Important	0.124***	0.122***	0%
<i>Region of residence</i>			
Moderate P-RA regions	0.076**	0.052*	-30%
High P-RA regions	0.153***	0.089**	-38%*
Father's Rich-redistributive attitude		0.246***	
Mother's Rich-redistributive attitude		0.127***	
Observations	1281	1281	
$R^2$	0.0380	0.1259	

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

Rich-redistributive attitudes: attitudes towards taxation on rich. For these regressions, we control for the variables having statistically significant coefficients in the column (3) of the Table 4.7: the gender, the region of residence, the level of education, the perception of the role of luck and effort in success and the political position. The reference group of the variable *Region of residence*, is the regions with the lowest rate of public support for reducing taxation on rich.

being in an average financial situation (compared to a bad financial situation), and for the perception of the role of luck and work in success. The difference in the probability of being favourable to redistribution between those who are in a comfortable financial situation and those who are in difficulty decreases by 31%. The coefficient related to the prospect of future mobility also decreases by 26%. Finally, the most important change relates to the effect of region of residence: by controlling for parental attitudes, the impact of this factor decreases sharply, the coefficients in question shrink by 34% and 24%. These changes do not remain without implications on the significance levels of these variables: for example the effect of living in regions where the level of support taxation on poor is moderate (compared to regions where it is low) becomes no significant after adding the parent's attitudes.

**Regarding the Rich-RA.** Concerning the attitudes towards taxation on rich, similar patterns emerge. As showed in Table 4.15, some of variables impacts change considerably after adding parents' attitudes. The coefficients of individual financial situation, level of education, ideological position and region of residence decrease respectively by 31%, 31%, 27%, and 38%. We also note that the financial situation coefficient loses its statistical significance. These results confirm our hypothesis about the confounding nature of parental preference variables in this regard. This indicates that a considerable part of the effects of these variables can be explained by the intergenerational correlation of preferences highlighted in this study. This also shows that important coefficients studied largely in the literature are partially biased without adding the preferences of parents.<sup>23</sup>

## 4.6 Conclusion

This study is the first attempt in literature to explore the transmission of preferences for redistribution from parents to children. We document an important correlation between the children's attitudes towards taxation on poor and rich and those of their fathers and mothers. The formation the attitudes towards taxation depends strongly on the parents'

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<sup>23</sup>Which means that if we don't control for parent's attitudes we will assign a "spurious" effect to these variables.

preferences. This relation is robust to controlling for a wide range of social, economic and ideological factors and homogeneous over the individual's age group. Concerning the process of transmission, the direct socialization of parents appears to be less important than the society influence.

Our findings show that with respect to the literature on the determinants of preferences for redistribution, the preferences of parents are the most influential factor, even ahead the economic factors. In adding of that, through a mediation analysis, we also show that the effects of many well-known determinants are overestimated, that a portion of these effects is hidden in this intergenerational correlation of preferences. Another important and new finding is that some segments of the population are less inclined to form any attitudes toward taxation, such as the less educated, those whose parents are the less educated, the women, the centrists, and those whose parents don't have an opinion on taxation.

Our results revealing a new determinant of preferences for redistribution allow us to better understand the formation of these preferences and thus a posteriori the different levels of redistribution observed across countries. By shedding light on this phenomenon of intergenerational transmission, we are more able to explain for example how the impact of a shock affecting the preferences of a single generation can persist over several generations. A paradox such as the low level of demand for redistribution in the United States compared to Europe while the levels of inequality are higher in the former, can be explained by the different historical events that have occurred in each of the countries over the past two centuries.<sup>24</sup>

These findings suggest a number of important directions for future research. First, extend this study to other populations to see if there are cross-country differences regarding the intensity of correlation and transmission channels. Second, we can also study the intergenerational transmission of attitudes towards inequalities and redistribution over

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<sup>24</sup>See [Piketty \(2020\)](#) for a comprehensive investigation of the evolution of inequality justification systems and its drivers in United states and Europe.

several generations in order to investigate the role of such a mechanism in the cultural persistence concerning fiscal policies and defining its determinants. Third, further study the indirect transmission channels, especially the social environment, the school, the media platforms and others in order to quantify the role of each of these factors and thus be able to provide explanations for this phenomenon.<sup>25</sup>

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<sup>25</sup>A good starting point will be the review of [Costa-Font and Cowell \(2015\)](#) on the place of social identity in the formation of preferences for redistribution.

## Appendix A

The following is the list of the variables used in this study. The original variables are from SOEP data.

- Poor redistributive attitudes (P-RA): dummy equals to 1 if the individual is favorable to less taxation on poor, and 0 otherwise (i.e favorable to maintain the actual level of taxation on poor or favorable to more taxation on poor).
- Rich redistributive attitudes (R-RA): dummy equals to 1 if the individual is favorable to more taxation on rich, and 0 otherwise (i.e favorable to maintain the actual level of taxation on rich or favorable to less taxation on rich).
- No opinion (P-RA): dummy equals to 1 if the individual has no position towards the taxation on poor, and 0 if he or she has a defined position.
- No opinion (R-RA): dummy equals to 1 if the individual has no position towards the taxation on rich, and 0 if he or she has a defined position.
- Financial situation: Categorical variable presenting 3 categories, equals to 1 if individual household's financial situation is bad, to 2 if it is average, and to 3 if it is good. The original SOEP survey question is about the degree of satisfaction with household income (scale from 0 to 10). A degree of satisfaction between 0 and 3 is considered to be indicative of a bad financial situation, indicative of an average financial situation if the answer is between 4 and 6, and of good financial situation if the answer is between 7 and 10.
- Level of Education: Categorical variable presenting 4 categories of educational levels equals to 1 if the respondent's level of education is less than high school , 2 if the respondent has a high school education level, 3 if the respondent's level of education is more than high school, and 4 if the respondent is still in school.
- Optimistic about future: dummy equals to 1 if the respondent is optimistic or more optimistic than pessimistic about own future, and 0 otherwise.

- Role of luck: categorical variable presenting 3 categories regarding the perception of role of luck on success. The original SOEP survey question is on how strongly the respondent believes that his success depends on luck. of satisfaction with household income (scale from 1 to 7). This coded variable equals to 1 if the respondent does not believe that achievement depends on luck (1-2), equals to 3 if he or she believes that it depends strongly on luck (6-7), and equals to 2 otherwise (3-5).
- Respect reciprocity : dummy equals to 1 if respondent values reciprocity and 0 if not. The original SOEP survey question asks the respondent if the following sentence "Help those who help me" applies or not or not to his conduct (scale from 1 to 7).
- Risk aversion: categorical variable presenting 3 categories of respondents regarding risk attitude. The original SOEP survey question is on the personal willingness to take risks (scale from 0 to 10). This variable is taking the value of 1 if the respondent is strongly risk averse (0-3), the value of 2 if he or she is moderately risk averse and the value of 3 if he or she is risk lover.
- Political position: categorical variable presenting 3 categories of respondents regarding the political position. The variable is equal to 1 if the individual takes a left-wing political stance, 3 if he or she or she takes a right-wing stance, and 2 if he or she or she takes a centrist stance. The original SOEP survey question asks the individual to position themselves on a scale of 1 to 10 (1 completely left, 10 completely right).

## Appendix B

**Table 4.16:** Descriptive statistics on support for taxation in Germany

	Share of respondents					
	level of taxation on poor			level of taxation on rich		
	Children	Fathers	Mothers	Children	Fathers	Mothers
No Answer	0.68	0.48	0.31	0.82	0.54	0.71
Too much	37.64	46.40	40.32	5.37	3.70	2.94
Too little	0.73	0.71	0.57	41.68	54.85	47.44
Appropriate	21.90	28.45	21.81	14.58	15.60	12.40
Don't know	39.05	23.96	36.99	37.55	25.32	36.51
N	3,539	3,539	3,539	3,539	3,539	3,539

**Table 4.17:** % Support for redistribution across Germany regions

Region	P-PA	R-RA	N
<i>West Germany</i>			
Schleswig-Holstein	58	74	661
Hamburg	37	57	299
Lower Saxony	55	67	185
Bremen	65	72	151
North-Rhine-Westfalia	58	71	4443
Hessen	58	72	1408
Rheinland-Pfalz	60	68	990
Baden-Wuerttemberg	61	67	2561
Bavaria	61	74	2956
Saarland	57	69	273
<i>East Germany</i>			
Berlin	61	70	774
Brandenburg	68	80	895
Mecklenburg-Vorpommern	68	77	507
Saxony	65	80	154
Saxony-Anhalt	69	81	899
Thuringia	65	82	898

P-RA: Poor-redistributive attitudes. R-RA : Rich-redistributive attitudes. Source: SOEP 2005 wave.

# Chapter 5

## Conclusion

This research aimed to put into the light the dynamic nature of preferences for redistribution and identifying some of the exogenous determinants of evolution of these preferences. Based on an empirical analysis of several facets of the preferences for redistribution spread out over three chapters, it can be concluded that beyond the individual factors, many exogenous factors play an important role on the formation of the attitudes towards inequalities and redistribution. The results indicate that public demand for redistribution flourishes when political institutions become more inclusive and when income disparities become more pronounced. The results indicate also that attitudes towards taxation respond to the mechanism of intergenerational transmission, one of the most influential mechanisms behind the persistence of the distribution of preferences over time.

This thesis is a major step towards a better understanding of how people's preferences are formed on the issues of inequalities, the role of the state, and taxation. In fact, many lessons and implications can be draw, we cite three.

1. **Individuals factors are overrated.** As mentioned in the Introduction, the principal focus in the theoretical, experimental and empirical studies dealing with support for redistribution is on the individual characteristics. In fact, as showed in this thesis, individuals preferences are rather more sensitive to what is happening around them. In addition, a considerable part of the impact of individual factors on redistributive attitudes can be explained by these institutional factors. Consequently, successful redistribution policies must also be adapted to the context changes in

adding of the individual changes.

2. **Considerable inter-country differences exist.** Countries not differ only regarding the level of support for redistribution, but also regarding the preferred type of of redistribution and the structure of determinants of these preferences. What drive individuals in France to be favorable for a change of the redistributive politics are not necessarily what drive Germans or Arabs or Americans. This calls on the states, especially the states of developing countries, to elaborate their appropriate redistribution policies, in accordance with the expectations and preferences of their citizens.
3. **A historical perspective is more important than ever.** Once we know that the formation of demand for redistribution is subject to exogenous shocks and that this attitude is also transmitted between generations, we can no longer be satisfied with a static analysis of preferences for redistribution. This is even more true when we carry out inter-country analyses. In fact, considering our results, we can state that today's preferences for redistribution (but also for everything related to inequality and the role of state) have been shaped over several decades (see [Piketty, 2020](#), for a historical analysis of the evolution of fairness principles). A fair comparison between regions and countries should take history into consideration. This study provides some elements to include in this kind of analysis.

All that having been said, this thesis could be extended in several directions. Here are some future research topics that may arise from this thesis.

1. **Updating theoretical models.** A literature review of theoretical research on redistributive preferences shows a notable lack of integration of factors other than micro-individual factors [Alesina and La Ferrara \(2005\)](#); [Meltzer and Richard \(1981\)](#). The development of an intergenerational model of redistributive preferences - for example - could be an important avenue of research (see [Bisin and Verdier, 2011](#)).
2. **Extend the study of support for redistribution to other regions of the world.** As mentioned in Chapter 3, the vast majority of studies are conducted on the United States and Europe, in a context very different from that of many other

regions of the world. The flourishing databases make it easier to explore the way people reason about redistribution in the under-explored regions, thus allowing for a better understanding of the mechanism by which inequality and redistribution evolve.

3. **Conduct in depth panel analysis.** Given the large (and growing) number of factors that contribute to the formation of redistributive preferences, an in-depth panel analysis of all facets of these preferences will allow to control for a considerable share of unobservable determinants to be controlled for, and can then lead to more robust results. Self-interest factors appear to be the first factors to be examined in this regard, given the importance of the spurious effect they contain regarding their correlation with the attitudes for redistribution. A "new generation" of surveys (see [Stantcheva, 2020](#)) is needed to develop our reflections on all the issues related to redistribution and more specifically on the underlying mechanisms.

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