When Instability Becomes Permanent: Uncertainty in the Labor Market as a Determinant of Redistribution Preferences

Clàudia Serra Sala

Universitat de Barcelona — UB School of Economics

Advisor: Pilar Sorribas Navarro

Universitat de Barcelona

June 2018

Abstract

Although existing research reveals interesting relations explaining redistribution demand, little is known about the impact of the contract type and the macroeconomic context in shaping redistribution preferences of individuals. We analyze the Spanish dual labor market to provide causal evidence of the effect of temporal contracts in determining preferences for redistribution. To do so, exact matching is applied to Spanish data from the European Social Survey for the period 2002-2014. Furthermore, we analyze the heterogeneous effect of the contract type by studying the impact of the economic crisis starting in 2008. Our results give causal support to the insurance theory by showing that the fact of holding a temporal contract increases preferences for redistribution. Nevertheless, this effect disappears when the effect of the adverse macroeconomic context is considered. The riskier economic context makes risk perception of individuals holding permanent contracts increase, which results in stronger demand for redistribution. This macroeconomic effect determining preferences for redistribution appears to be stronger than the individual determinant of holding a specific contract type.

Keywords: Temporal, Redistribution, Preferences, Dual Labor Market, Individual, Macroeconomic, Crisis, Determinants, Matching.

1 Introduction

Individuals facing higher risk in the labor market have stronger incentives to support government redistribution (Iversen and Soskice, 2001). But, are individual characteristics the main determinant of redistribution preferences? Existing research reveals interesting relationships explaining redistribution demand but little is known about the impact of the macroeconomic context in determining redistribution preferences. Basic theory of preferences for redistribution states that when inequality increases, redistribution demand should also increase (Meltzer and Richard, 1981). While the Gini coefficient in United States is 38.5 and 29.1 in Europe, redistributive policies are more extensive in Europe, where the overall size of the government is about 50 percent larger and the tax structure is more progressive (Alesina and Angeletos, 2005). Furthermore, redistributive policies are found to be more generous in countries with a relatively egalitarian pre-tax distribution of income (Moene and Wallerstein, 2003). During the last decades, income inequality in the developed world has been increasing fostering the attention devoted to determinants of redistributive polices (Roser, 2016).

An extended body of literature has looked at the determinants of preferences for redistribution both at a macroeconomic and individual level. One of the main theories explaining demand for redistribution focuses on the role that income redistribution has as a type of public insurance, while looking at individual risk as a main determinant of redistribution preferences (Moene and Wallerstein, 2001; Iversen and Soskcie, 2001; Cusack et al., 2006). Alesina and Angeletos (2005) use the different beliefs in societies about how individual effort determines income to explain why economies had not been reacting to the expansion of income inequality and the notorious differences in redistribution across countries. Furthermore, racial and ethnic heterogeneity undermines redistribution demand as people are more altruistic toward those who resemble themselves (Alesina and Glaeser, 2004; Lupu and Pontusson, 2011). Individual characteristics such as the level of education, income, age, gender, the fact of belonging to a labor union or living in a rural area are found to be important determinants in shaping redistribution preferences (e.g. Ravallion and Lokshin, 2000; Iversen and Soskice, 2001; Finseraas, 2009). One important individual characteristic determining demand for redistribution is the probability of losing a job and becoming unemployed. When looking at segmented labor markets, factors influencing redistribution demand mentioned above play a different role. While in non-segmented labor markets, lower levels of education and income are associated with stronger preferences for redistribution, this association becomes weaker when the labor market is dual (Fernández-Albertos and Manzanos, 2016). In addition, Berens (2015) uses data from Latin American Countries to show that in dual labor markets, formal and informal workers have similar redistributive preferences, but are influenced differently by individual characteristics such as the level of education or left-right ideology.

In order to complement previous literature on the determinants of redistribution, this study provides causal evidence supporting the insurance theory. According to this approach, individuals have stronger redistribution preferences since it is seen as a public insurance against potential income losses. Using data from the European Social Survey for the period 2002-2014 in Spain, we find causal evidence that temporal contracts have a positive effect in determining redistribution preferences. The Spanish labor market is characterized to be a dual labor market since 30 percent of the workers are subject to temporal contracts, implying low employment protection, while the rest enjoy much more protected and stable positions derived from permanent contracts. In this dual context, the fact of holding a temporal contract increases support for redistribution since the probability of being unemployed is higher and it derives in a stronger demand for social insurance against potential income loses. Therefore, the first hypothesis we test is whether individuals holding a temporal contract, and thus a riskier situation in the labor market, have stronger redistribution preferences than those holding permanent contracts. Exact matching is used to obtain a matched sample of individuals that are identical in those characteristics determining both the fact of holding a temporal contract and redistribution preferences.

As in the matched sample, the contract type an individual hold is determined randomly, we are able to disentangle the causal effect of temporal contracts on preferences for redistribution. Furthermore, the period analyzed encompasses two very different macroeconomic contexts derived from the economic crisis starting in 2008. This fact allows us to study the heterogeneous effect of temporal contracts in redistribution preferences depending on the macroeconomic context considered. Thus, the second hypothesis we test is whether macroeconomic rather individual characteristics play a more important role in defining redistribution preferences.

Our results give support to the insurance theory since suggest that when risk perception in the labor market is high, preference for redistribution become stronger. In favorable economic contexts, the fact of holding a temporal contract increases the probability to strongly support redistribution by 12.13 percent. This effect disappears when the adverse macroeconomic context is considered. In the crisis period, individuals holding permanent contracts become 37.1 percent more likely to strongly support redistribution because of the perception of a riskier environment. This macroeconomic effect determining preferences for redistribution appears to be stronger than the individual determinant of holding a specific contract type.

The rest of the study is structured as follows. Section two provides a theoretical discussion of the previous work done on the determinants for redistribution preferences. Section three presents the institutional setting in which the study will be developed. Section four introduces the empirical strategy used to determine the effect of temporal contracts. Section five presents the results. Finally, section six concludes.

2   Theoretical Discussion

This section provides a theoretical discussion about mechanisms and individual characteristics determining preferences for redistribution. In order to provide an easy understanding of the different bodies of literature, this discussion is divided into five parts. First, basic theory on redistribution preferences developed by Meltzer and Richard (1981) as well as the relationship between income inequality and redistribution is discussed. Second, redistribution can also be seen as a social insurance. Therefore, the link between risk and redistribution demand is presented. The third part presents different macroeconomic theories explaining potential mechanisms behind redistribution preferences as well as the effect of ethnic and religious heterogeneity in determining the size of the welfare system. Fourth, individual characteristics driving different degrees of preferences for redistribution are discussed. Finally, the role of the labor market in defining redistribution demand is considered.

2.1   Income Inequality and Redistribution

Basic theory of preferences for redistribution builds upon Meltzer and Richard (1981) general equilibrium model and states that when inequality increases, redistribution demand should also increase. Nevertheless, empirical research has found that such prediction is not always satisfied and often more egalitarian countries are the ones linked to higher social spending (Moene and Wallerstein, 2003). Meltzer and Richard (1981) general equilibrium model explains the size of government through voter's demand for redistribution. In their model, where voters are fully informed about the government's size, a more skewed pre-tax income distribution, and therefore lower ratios of the median to the mean income before taxes, brings increases in the government size due to a higher level of welfare desired by a majority of voters. While Finseraas (2009) shows for a cross-section sample of 22 European regions that the level of inequality is positively linked with demand for redistribution, Moene and Wallerstein (2003)[1] and Iversen and Soskice

---

[1]Moene and Wallerstein (2003) use data from the OECD on spending in social-insurance programs as a share of GDP and wage inequality for eighteen countries for the years 1985, 1990 and 1995.

(2001),[2] among others, find the opposite relation.

In order to test Meltzer and Richard's (1981) theory, several studies have analyzed the relationship between inequality and income redistribution in different sets of countries and contexts. In a diverse sample of 26 countries, Lübker (2006) shows the lack of significant bivariate relationship between the Gini-Index of the income distribution and the aggregate demand for redistribution. Furthermore, he attributes the influence of social justice norms, differing between groups of culturally similar countries, to the different levels of redistribution observed. Not only the demand for redistribution, but also the relationship between inequality and social-insurance spending, such as pension or health care, as a share of the GDP in advanced industrial societies is found to be uncorrelated with wages and salary inequalities. Policies that constitute a large share of the welfare benefit from unemployment insurance, active labor-market policies or occupational illness and injury are found to be significantly more generous in countries with a relatively egalitarian pre-tax distribution of wages and salaries (Moene and Wallerstein, 2003). In advanced democracies, Iversen and Soskice (2001) demonstrate, through differences in skill composition, why income equality is linked to higher social spending in cross-national comparisons. According to their model, workers who have made heavy investments in asset-specific skills have stronger incentives to support policies and institutions that protect their jobs and income since they stand a greater risk of losing a substantial portion of their income than do workers who have portable skills. Therefore, national educational systems heavily based in vocational training are strongly positively related both to skill specificity and pretax equality. This tendency can help explain the cross-national variance in social protection.

2.2   The Social Insurance Approach: Risk and Redistribution

Redistribution can be viewed as a social insurance and therefore, its demand may be explained from a self-interest or insurance approach. Moene and Wallerstein (2001) suggest that voters have both redistributive and insurance motives to support welfare spending. These authors claim that the effect of inequality will depend on who is targeted for redistribution policies. When pretax income inequality is greater, support for policies targeted to people who have lost their market income is lower than for policies targeted to working individuals. Therefore, the link between increasing inequality and lower support for redistribution can be explained by the fact that policies constituting a significant share of the welfare budget are targeted to non-worker individuals. Iversen and Soskice (2001) use the insurance component of redistribution to present a theory that emphasizes people's skills composition in a model where portability of skills is inversely related with risk. According to them, individuals with specific skills that are not easily portable across jobs, firms or industries, have a greater risk of losing a substantial portion of their income and, therefore, have stronger incentives to support policies and institutions protecting their jobs and incomes than workers with portable skills. Even though the own position in the income distribution affects individual's social spending preferences, at any level of income, workers with specific skills are more inclined to support higher levels of protection than those with general skills. Even if the relationship between demand for employment benefits and personal unemployment risk is positive, the homogeneity of the risk pool, and therefore the amount of people who net benefits, will determine general preferences (Rehm, 2011). Thus, from the social insurance approach, exposure to labor market risks is highly related to stronger redistribution preferences due to reduced individual income and the demand of insurance against risk of future income loss (Cusack, et al. 2006).

---

[2]Iversen and Soskice (2001) use data from 11 advanced democracies from two sets of national mass surveys conducted under the International Social Survey Program, one in 1996 and the other in 1997 (ISSP 1999, 2000).

2.3 Macroeconomic Determinants, Heterogeneity and the Welfare-State Size

Alesina and Angeletos (2005) provide an explanation to the empirical evidence contradicting Meltzer and Richard's (1981) model through a theory of fairness and social competition. They explain that not only economies had not been reacting to the expansion of income inequality, but differences across countries are also notorious. According to their theory, societies believing that individual effort determines income will be more likely to choose low levels of redistribution and taxes compared to societies believing in luck, connections or determinants of wealth away from the individual control, which will levy higher taxes and redistributive policies. Furthermore, Cusack et al. (2006) propose a model that captures both the redistributive and insurance aspects of public spending, where the response of the government to economic shocks will depend on the electoral system. According to their model, proportional representation systems bring stronger redistribution, since they tend to advantage the center-left as well as make longer term commitments, while majoritarian systems tend to do the opposite. Moreover, distrust in the government might inhibit respondents from translating their concerns for inequality into support for redistribution while policy preferences might respond more to emotional than factual appeals (Kuziemko et al., 2015). If this is the case, inequality and poverty might be seen as a serious problem but have no effect on policy outcomes.

Another body of literature attempts to give an answer to the different levels of redistribution observed among countries. On one hand, social affinity theory uses non-economic factors to state that rising inequality undermines the sense of social affinity between the middle class and the poor. Alesina and Glaeser (2004) show evidence that racial and ethnic heterogeneity undermines preferences for redistribution as people are more likely to be altruistic toward those who resemble themselves; phenomena that is magnified when minorities are overrepresented among the poor. What matters at the time of shaping preferences for redistribution, is the structure, rather than the level, of inequality. Lupu and Pontusson (2011) complement the literature on racial and ethnic heterogeneity by introducing a factor controlling for social distance. They show that voters will be inclined to ally with low-income individuals and support redistributive policies when the distance between the poor and the middle class is small relative to the distance between the middle and the rich. Using data from Swedish municipalities, Dahlberg et al. (2012) find that an increase in the share of immigrants led to lower preferred levels of social benefits. Since immigrants are generally characterized to be net-beneficiaries of social polices, the negative effect of migration on redistribution is especially pronounced for individuals in the upper tail of the income and wealth distributions. Similarly, the aggregate increase in immigrant density during the 1998-2006 period in Spain caused municipal social services spending to fall (Jofre-Montseny et al., 2016). Therefore, when racial or ethnic minorities comprise a significant proportion of the poor or lower-skilled, social distance increases and the median voter is less likely to support redistributive policies either due to an increase in ethnic heterogeneity or due to an increase in the cost of redistribution.

Complementary explanations to the heterogeneity, social distance and insurance theories are given by Corneo and Grüner (2002) who show that the conventional economic motivation, taking solely income into account, is only one of the factors determining preferences for redistribution. From their analysis, both public values and concerns for their own social standing appear to be significant factors shaping individual attitudes toward the government's attempt to reduce economic inequality. On one hand, the public values effect follows the same logic than the theory of fairness and social competition of Alesina and Angeletos (2005) and implies that the demand for redistribution is negatively related to stronger perceptions of the individual's responsibility at the time of generating income. On the other hand, the social rivalry effect arises when preferences for redistribution are driven by the consideration that governmental redistribution affects the quality of the individual's social environment. Therefore, it implies that individual concerns for their own social standing is a determinant of redistribution demand. Similarly, the tunnel effect, according to which is the prospect of future wealth what determines today's redistribution

preferences, might be used to explain why rising inequality is tolerated in rapidly developing countries. Therefore, individuals in a rising trajectory may oppose redistribution, even if they are in a more disadvantaged position, and those in a downward trajectory, even if being well-off, may favor it (Ravallion and Lokshin, 2000). Estimating a random-effects probit for Russian survey data from 1992 to 1996, Ravallion and Lokshin (2000) obtain results suggesting that support for redistribution is stronger among those who fear that their welfare will fall. Among individuals who expect things to get better, support for redistribution is weaker. Moreover, a pronounced current income effect attenuating the desire for redistribution appears. In European countries, support for redistribution is higher when the level of poverty is disproportionally high but this fact is not due to inequality-aversion of the rich (Finseraas, 2012). Nevertheless, the differences in redistribution support between the rich and the middle class are larger in regions where the proportion of ethnic minorities among the poor is high. In this case, rich respondents are less likely to support redistribution due to a smaller fear of downward income mobility (Finseraas, 2012).

2.4 Individual Characteristics

Besides macro-level redistribution theories, a broad body on individual determinants of redistribution demand has been developed. It is an individual's occupation, especially the risk exposure related to its occupation that helps shaping redistribution preferences. Rehm (2009) claims the risk exposure at the occupational level, measured through occupational unemployment, rather than at the industry level, as suggested by traditional accounts, to be the determining fact shaping individual's risk perception and therefore redistribution demand. Due to the fact that preferences for insurance decrease with income when controlling for risk, macro theories should consider the joint distribution of income and risk exposure (Rehm, 2009 and 2011; Ravallion and Lokshin, 2000). As the redistribution as insurance approach suggests, individual risk exposure is one of the main determinants of preferences for redistribution (Cusack et al., 2006; Rehm, 2009).

There has been extensive research into the individual-level factors determining redistribution preferences done by and Ravallion and Lokshin (2000), Iversen and Soskice (2001), Cusack et al. (2006), Finseraas (2009) and Rehm (2009, 2011) among others.[3] According to this line of research, age is found to be positively related with redistribution demand. Older workers are more disadvantaged in the labor market because their ability to find new employment is likely to be more limited than for younger workers. Furthermore, their time to retirement is shorter and preferences for redistribution are, therefore, stronger. Women are more supportive of redistribution than men, since they tend to be the primary care-giver in the family. This places women at a disadvantaged position in the labor market compared to men, as they need to not only leave but also return to the labor market. Education is found to be negatively related with redistribution support. Typically, higher levels of education provide a good insurance against adverse labor market dynamics, since they are related with more marketable skills and thus lower probability of income loss due to unemployment. Furthermore, as more educated people expect to be upwardly mobile, they believe they are less likely to benefit from welfare redistributive policies (Fernández-Albertos and Manzano, 2016). Finally, left-right wing individual position is found to be negatively related with redistribution demand, since supporters of rightist parties express less support for social spending than supporters of leftish parties.

Further socioeconomic determinants are also considered. Ravallion and Lokshin (2000) find

---

[3]Ravallion and Lokshin (2000) use data across the Russian Federation from the Russian Longitudinal Monitoring Survey for the period 1992-1996; Iversen and Soskice (2001) use data from 11 advanced democracies; Cusack et al. (2006) exploit data from the International Social Survey Programme; Finseraas (2009) uses data of 22 European countries for the year 2001; Rehm(2009) uses a new comprehensive dataset on economic dynamics in occupations and industries across countries in the European Union married with public opinion data from the European Social Survey; Rehm (2011) uses data from the 2006 International Social Survey Programme.

the number of pensioners in the family, being married and the fact of living in a rural area to enhance preferences for redistribution. Since the decision of joining a labor union is likely to arise because an individual is concerned about the security of his/her job, and a union function consists to insure their members against labor market risks, such members are more likely to highly support redistribution (Cusack et al., 2006; Iversen and Soskice, 2001). Finseraas (2009) shows that large households with low incomes, individuals belonging to a minority group and people who rarely go to church are more likely to support redistribution. Cusack et al. (2006) considers the occupation of the individual to be related with redistribution preferences for three reasons. First, public employees are, in general, more supportive of larger governments than private sector employees. Secondly, the retired are beneficiaries of redistributive policies, and therefore should support redistribution. And third, the self-employed depend on flexible markets and frequently rely on hiring relatively low-paid labor. Iversen and Soskice (2001) demonstrate that the self-employed are more likely to oppose social spending while part time employees and those outside the labor market do not differ from the attitudes of others.

2.5   Redistribution Demand and the Labor Market Structure

Special attention should be paid to preferences for redistribution in dual labor markets. Alt and Iversen (2017) complement Rehm's (2011) analysis by introducing the connection between risk and labor market segmentation. They complement previous literature by combining a model of altruism and heterogeneity, according to which individuals become less altruistic toward the poor when minorities are over-represented in this segment of the population, with a model based on self-interest and insurance. By doing so, they show that labor market segmentation (previously omitted in the literature) has more consistent effects on redistribution demand than social distance. From this approach, higher segmentation of the labor market, into secure and insecure segments, might reduce or maintain support for distribution while needs might be sharply rising, not because the middle class supports the poor less, but because they perceive less risk to be poor themselves.

Evidence of the dynamics described previously in dual labor markets is provided by Fernández-Albertos and Manzanos (2016) as well as by Berens (2015). Fernández-Albertos and Manzanos (2015) provide evidence that dualism in the labor market weakens the association between socioeconomic status and welfare state preferences. Using individual data for 22 countries from the European Social Survey, they show that in dual labor markets the relation between low levels of income, low levels of education and precarious labor market positions are dramatically less associated with greater welfare support. European social security systems provide benefits as a function of previous contributions. In dual markets, this implies that the system tends to disproportionally protect workers under standard permanent contracts. Since individuals with low levels of income and education tend to be overrepresented among outsiders, dual labor markets make those individuals holding non-standard contracts and the unemployed less supportive of welfare state expansion bringing systems to redistribute less from the rich to the poor. Following the same line, Berens (2015) uses data from the Latin American Public Opinion Project which is conducted in 24 Latin American and Caribbean countries in 2008 and 2010, to show that formal and informal sector workers have similar redistributive preferences. While formal wage earners are influenced by common theories such as economic self-interest and left-right ideology, what matters for informal wage earners is different. For individuals belonging to the informal market, education is positively related with preferences for redistribution, due to an interest of insurance against higher education costs, because of their vulnerable status in the economy. Furthermore, left-right ideology positively influences redistributive preferences of the formally employed and does not affect informal workers, religiosity has a robust negative effect on social policy preferences of informal workers.

Hypothesis to be tested

Up to this point the literature has found how individual characteristics can affect perceptions of risk and therefore preferences for redistribution. Even though dual labor markets had been analyzed, little attention has been paid to further contextual characteristics. A model developed by Iversen and Soskice (2001) points to unanticipated shocks to the occupational structure as an important source of cross-time variance in support for social protection. When workers invest heavily in skills that are not fully transferable, an increase in the risk of having to move across a skill boundary in the economy raises the level of demand for social insurance. Although theory implies that people discount cyclical unemployment, national unemployment may still affect individual-level social preferences. According to Berens (2015) an economically risky environment, reflected by a high unemployment rate, does not significantly influence redistributive preferences of informal workers but presents no evidence about formal workers.

Although existing research reveals interesting relations explaining redistribution demand, as Dahlber et al. (2012) notice, large part of the evidence is best described as descriptive rather than causal. Little attention has been devoted to the link between contextual characteristics effecting the labor market, such as the effect of expansion or recession periods, and redistribution preferences. The literature widely states that the risk faced by an individual is a major factor determining redistribution preferences. Moreover, the fact of being subject to a temporal contract, and therefore to more unstable employment and worse labor outcomes (García-Pérez et al., 2016) might increase the risk perception of temporary workers.

The aim of this project is to provide causal evidence on the insurance theory. The first hypothesis we will test is whether the fact of holding a temporal contract has a positive impact on redistribution preferences. To do so, we study the Spanish dual labor market by applying exact matching at individual level data from the European Social Survey for the period 2002-2014. The period considered contains two very different economic contexts divided by the economic crisis starting in 2008. Exploiting this variation, the second hypothesis to be tested is whether the macroeconomic context matters at the time of shaping redistribution demand. Finally, we test whether temporal contracts have a heterogeneous effect in determining redistribution preferences depending on the macroeconomic context considered. Our results complement existing literature by providing causal evidence supporting the insurance theory. Furthermore, we provide insight on individual determinants of redistribution by showing that temporal contracts and adverse macroeconomic contexts have a positive effect in redistribution demand. Even though the effect of temporal contracts is positive, when the economic situation is adverse, macroeconomic characteristics are the ones that have a stronger effect.

# 3 Institutional Setting

3.1 The Spanish Labor Market

A dual labor market can be characterized as a market with large differences between workers subjected to different labor regulations. While a share of workers, known as insiders, are subjected to a stricter set of labor regulations and, therefore, highly protected, a substantial share of workers, known as outsiders, are subjected to lax regulations and, thus, lower protection and facing higher risks. With almost one third of the working population holding temporal contracts under lax regulation and two thirds of the population benefiting from the rigid protection attached to permanent contracts, the Spanish labor market provides an example of a dual labor market. Before 1975, the Spanish labor market was heavily regulated with most of contracts being permanent and protected by strong labor regulations and stringent judicial protection. After the death of the dictator Francisco Franco, the Worker's Statute, which established the main labor market institutions of the new democratic regime and introduced collective bargaining, was approved in 1980. Nevertheless, the first and most important reform promoted to relax

labor market regulation was the liberalization of free labor unions in 1977.

Contracts were generally assumed to be open-ended since temporal contracts[4] could only be used for jobs, such as substitution of permanent workers or seasonal jobs, whose nature was temporary. Besides restrictions in the use of temporal contracts, employment protection regulation was very different for both contract types. While in case of dismissal, temporal contracts were subject to payments of eight days per year of seniority, permanent workers would receive payments of 20 days of salary per year of job tenure, with a maximum of one year of salary, or 45 days per year of job tenure with a maximum of 42 months of wages, depending on the fairness or unfairness of the dismissal. The stringent judicial protection that was still characterizing the Spanish labor market, implied that workers who disagreed with the dismissal could sue the firm. In this legal process the firm had to pay the judicial costs, at any case, and the lost salaries, in case of being solved in favor of the worker, which was the most common case. Therefore, often the costs that this process was implying for the firm were higher than the payments associated to the fair dismissal (García-Pérez et al., 2016).

During the first half of 1980s, unemployment rate in Spain experienced a rapid growth going from the 3.8 percent in 1976 to over 20 percent in 1984. The modernization of the of the labor market as well as the economic context of high unemployment prompted the Spanish Government to liberalize the use of temporary contracts. To do so, the labor market reform of 1984 triggered the dual approach of the Spanish labor market by removing the temporary nature requirement for temporal contracts. While temporal contracts could have a duration between six months and three years with severance payments of 12 days per year of service and be used for any type of job, conditions for permanent contracts remained unchanged. In practice, it implied a large gap between employment protection of workers subject to temporal and permanent contracts.

Figure 1. Total Number of Temporary Contracts and Total Number of Employees in Non-Agricultural Private Sectors
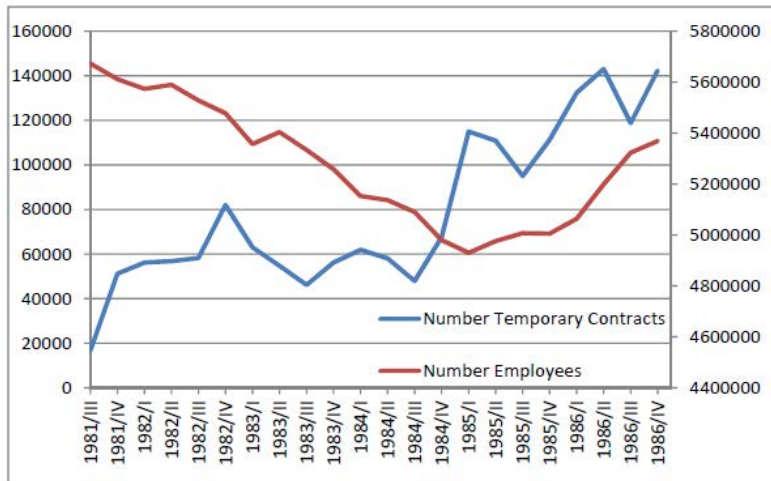
Source: García-Pérez et al. (2016)

After the introduction of the reform, the Spanish labor market had gradually evolved towards a dual structure. With two thirds of employees retaining a permanent status and the rest working in a highly mobile market, Spain became the European country using temporal contracts more intensively (García-Pérez et al., 2016). During the late 1980s, more than 90 percent of new contracts were created under the temporal form implying a large gross job creation. At the same time a general conversion rate of temporal to permanent contracts below 10 percent implied little creation of permanent employment (Güell and Petrongolo, 2007). As Figure 1 shows, temporal

---

[4]On what follows, we refer to temporal contracts as opposed to the standard permanent contracts of Spanish permanent workers.

contracts sharply increased after the introduction of the 1984 labor market reform, representing more than 30 percent of all employees in the early 1990s. Therefore, the main concern after the liberalization of temporal contracts in 1984 was the generation of a segmented labor market between unstable low-payed and stable high-payed jobs without a reduction of unemployment. In fact, the 1984 reform affected the welfare of low-skilled working men by persistently reducing their long-term employment and earnings prospects (García et al., 2016).

The precarious situation of temporal workers is further worsened by the role of labor unions. In Spain, union membership is almost entirely composed by insiders and only those with stable employment tend to participate in workers council elections (Rueda, 2007). Even though labor unionism in Spain is rather low, over 80 percent of the workers are affected by union negotiations (Amuedo-Dorantes, 2000; Rueda, 2007) due to the fact that once an agreement is signed it is automatically extended to all companies within its functional level irrespective of their participation in collective bargaining. Since such agreements tend to focus on insider needs, the gap in labor protection between outsiders and insiders becomes even wider (Amuedo-Dorantes, 2000).

Since 1994, several reforms have taken place attempting to reduce the broad labor market dualism, through reducing the incidence of temporal contracts. To some extent, all reforms restricted the conditions for the use of temporary contracts by gradually and mildly reducing severance payments for permanent employees. Their effect has been limited since, by the mid-2000's, temporal employment rate still remained very high. While the number of temporary contracts signed was more than 20 times the flow of net employment growth, only 6 percent of them were converted to permanent contracts per annum (Bentolilla et al., 2012). After 2006, and particularly from 2008 onwards, the large employment reaction to the crisis implied the loss of 60 percent of the temporal jobs. Nowadays, the Spanish labor market remains strongly dual, with two clearly identified segments of the population facing very different labor market protection.

3.2   Economic Crisis

The period analyzed encompasses two extremely different economic contexts. The period 2002-2007 can be characterized as strong employment growth. It was promoted by a significant relaxation of credit access and a very large immigration inflow attracted by the specialization of the Spanish economy in low value added and highly labor intense industries such as construction, tourism or personal services (Bentolilla et al., 2012). Yet, in the period from 2008-2014, the unemployment rate went from less than 10 percent in 2008 to 26 percent in 2014. This second period can be characterized as a period of a strong crisis, where Spain became one of the first countries of Europe in terms of unemployment. The economic crisis started to be noticeable in 2007, mainly in the United States and other countries directly affected by the subprime mortgage crisis. At that point, the Spanish economy was accumulating a 14 year-period of continuous growth that helped reduce the unemployment level to 8 percent.

Following the standard definition of a recession regarding GDP variations, the first phase of the crisis goes from the second quarter of 2008 to the end of 2009 and is characterized by a 5 percentage point fall in GDP. According to Bentolilla et al. (2012), initially, the impact of the crisis in Spain was not larger than in other European countries. The tightening of financial conditions and the rise of risk perception resulted in a sharp fall in the value of agent's wealth, mainly represented by housing, tax increases and lower transfers. All of this lead to a reduction in private consumption derived from a fall in household disposable income. The crisis became particularly severe in 2012. A decrease in the real estate activity and employment in the construction sector and industrial branches was accompanied by a more generalized contraction of the internal demand. Due to the lack of competitiveness of the Spanish economy, the retraction of the internal consumption could not be compensated by rising external demand. Combined with a sovereign debt crisis, the facts described above lead to a financing crisis in the balance of payments.

10

Figure 2. Evolution of Unemployment Rate: 2002-2016
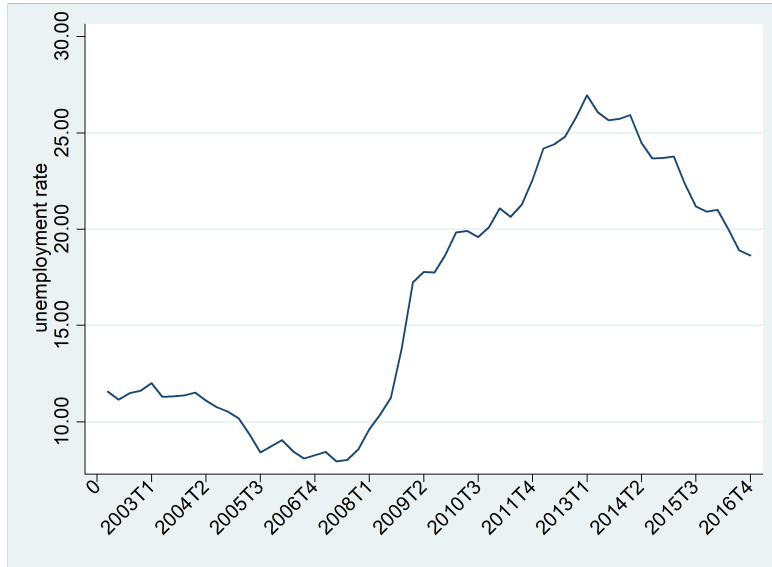
Even though the magnitude of the crisis in terms of the fall in GDP is considerable, the most representative measure of its severity comes from the impact in employment. The unemployment rate in 2013 was over 26 percent, three times higher than the unemployment rate before the crisis. During the first stages of the crisis, the lack of adequacy of labor conditions and lower dismissal costs of temporary employees implied that the adjustment of the labor market mainly occurred through temporal workers. This reduction in temporal employees, accounted for more than 60 percent of the total employee's reduction (Ortega and Peñalosa, 2013), which disproportionately affected young people and the lesser qualified. The lack of over exposition of permanent workers can be represented by the fact that it was in 2011 when permanent employment fell for first time below the 2007 level (Bentolilla et al., 2012). Besides differences in the intensity, all workers have seen their jobs threatened and average time of unemployment has increased for all segments of population. The percentage of unemployment with a duration larger than one year increased from 21 percent before the crisis to 58 percent in 2013. Unemployment duration became especially long for the young, older workers and those with low levels of formation, bringing them in a situation of risk of exclusion from the labor market (Ortega and Peñalosa, 2013).

4   Empirical Analysis

The aim of this study is to analyze whether individuals holding a temporal contract, and therefore facing more disadvantages and higher risk positions in the labor market, have higher preferences for redistribution than those holding permanent contracts. We also analyze whether macroeconomic characteristics matter at the time of determining redistribution preferences as well as the heterogeneous effect of temporal contracts depending on the macroeconomic context. In order to identify the causal effect of holding a specific contract type on preferences for redistribution, exact matching is used to identify treated and control groups. The analysis is divided into two parts. First, the effect of holding a temporary contract is studied for the full period. Second, heterogeneous effects depending on the economic context in which the survey toke place as well as the effect of the macroeconomic environment are analyzed.

4.1 Data

The measure of preferences for redistribution as well as control variables used to perform this analysis come from the European Social Survey (ESS). Data for Spain is available for seven rounds (2002, 2004, 2006, 2008, 2010, 2012, 2014).

4.1.1 Preferences for Redistribution

The dependent variable used to identify preferences for income redistribution corresponds to the question:

"Please say to what extent you agree or disagree with each of the following statements: The government should take measures to reduce differences in income levels."

Interviewees could respond by selecting one of the following five alternatives:[5]

(1) *"Disagree Strongly"*

(2) *"Disagree"*

(3) *"Neither Agree nor Disagree"*

(4) *"Agree"*

(5) *"Strongly Agree"*

Using this question as a dependent variable can engage in a debate about the formulation and implications derived from the fact that redistribution can be implemented through two different channels, namely taxation and spending. From the taxation side, redistribution implies that those who are in a better-off position support higher taxes that will be transferred to the worse-off. Therefore, the survey question considered leaves open the key idea that the rich would be the donors (Ravallion and Lokshin, 2000) and do not remind people of higher taxes in case of higher redistribution (Rehm, 2009). From the spending approach, in order to redistribute, social expenditure, either through income transfers or increasing the welfare state, must be targeted to the being worse-off. Thus, this question does not inform about the specific type of policy used to achieve such a goal (Rehm, 2009). Despite this, multiple studies[6] use this specific question to approach redistribution preferences. What matters for this study are the individual preferences for government redistribution as is seen as a social insurance against potential shocks the individual may face. Therefore, it seems sufficient to approach individual preferences for redistribution.

Another important aspect that should be considered is the distribution of the variable among the different alternatives. As Figure 3 shows, more than 80 percent of the observations correspond to categories 4 "Agree" and 5 "Strongly Agree". Therefore, in general, respondents are leaning toward support for redistribution and most of the variation we will observe will be among the intensity of such a support.

---

[5]The original question is coded (1) Agree strongly (2) Agree (3) Neither Agree nor Disagree (4) Disagree (5) Disagree Strongly (7) Refusal (8) Don't know (9) No answer. To make the results easier to interpret, this variable has been recoded in a way such as (5) corresponds to higher preferences for redistribution, (1) lower preferences for redistribution and (7), (8) and (9) are treated as missed values.

[6]See Fernández-Albertos and Manzano (2016), Finseras (2009, 2012), Rehm (2009). For approximately the same question from the International Social Survey Programme (ISSP), see Alt and Iversen (2017), Cusack et al. (2006) or Corneo and Grüner (2002).

Figure 3. Distribution of Preferences for Redistribution
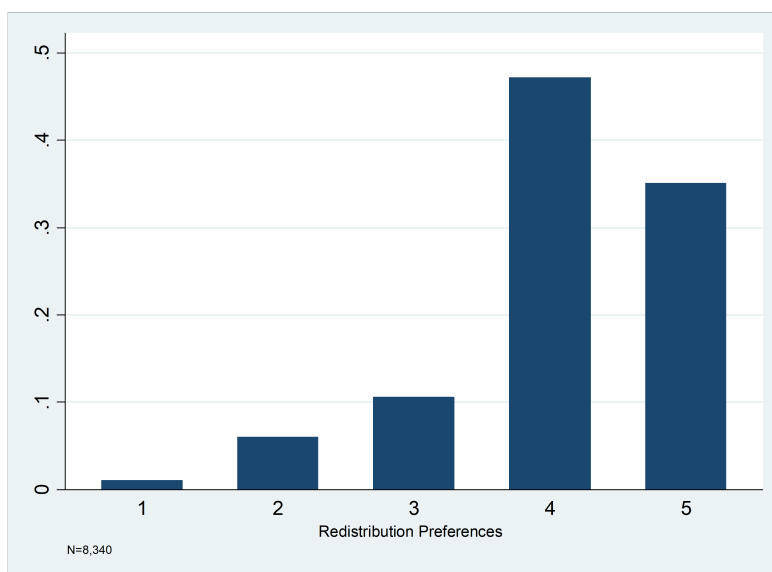
Note: Non-matched sample

4.1.2 Contract Type

The hypothesis underlying this analysis is that individuals holding temporal contracts are more exposed to risk than those with permanent contracts and, consequently, will have higher demands for government redistribution. The main independent variable used to identify the effect of temporal contracts corresponds to the question:

"Do/did you have a work contract. . . "

where the possible alternatives[7] respondents could answer are:

(0) *"Unlimited"*

(1) *"Fixed-termm"*

Individuals not holding a labor contract are dropped from the sample bringing the total number of observations considered to 8,492. The part of the sample considered as treated are individuals holding a temporal contract and, as control, individuals holding an permanent contract. The dualism of the Spanish labor market implies around 30 percent of the observations in our sample are subject to contracts under a much laxer regulation and higher insecure working conditions due to the fact of holding temporal contract.

4.1.3 Crisis

As stated before, the period of time that is being analyzed encompasses two very different economic environments. The economic crisis that showed its firsts symptoms in Spain during the third and fourth quarter of 2008 brought the unemployment rate from below 10 percent in 2008 to 26 percent in 2014, placing Spain in one of the first positions in Europe in terms of unemployment.

---

[7]The original question is coded (1) "Unlimited", (2) "Limited", (3) "No contract", (6) "Not applicable", (7) "Refusal", (8) "Don't know", (9) No answer. To facilitate the interpretation of the analysis, the variable has been recoded to (1) "Temporal" which corresponds to "Limited", (0)"Permanent" which corresponds to "Unlimited", (3), (6), (7), (8) and (9) are considered as missed observations.

In order to construct a variable accounting for the fact of being interviewed during the crisis period or before, we look at the average unemployment of the period 2002-2014 for each region as well as at the national level. Then, we compare the unemployment rate of the survey year with the average unemployment of the region to see if it was above or below. In all cases, the unemployment rate rises above the average unemployment from 2009. Therefore, a dummy variable, namely crisis, that equals one for survey rounds after 2008 is constructed to account for the period of higher unemployment.

4.2 Identification and Estimation

The main concern at the time of the empirical analysis comes from the fact that individuals holding a temporal contract have different characteristics than those holding permanent contracts. Some of the characteristics determining the fact of holding a temporal contract, such as lower levels of education, being a female or belonging to a minority group (Morris and Vekker, 2001; Amuedo-Dorantes, 2000) are considered as individual determinants for redistribution preferences. In order to deal with the problem of endogeneity, exact matching is employed. The matching procedure selects individuals that, even though holding different contract types, are equal in those observable characteristics determining both the fact of holding a temporal contract and redistributive preferences. Therefore, the fact of holding a specific contract type is considered as random and it allows us to identify the effect of temporal contracts on redistribution preferences.

4.2.1 Matching

The empirical strategy is that of selection on observables. The database is restricted to individuals holding a contract (either temporal or permanent) bringing the number of observation from 13,549 down to 8,449. In order to identify characteristics determining the contract type hold and therefore used for the matching procedure, a Probit[8] model is been estimated using as dependent variable a dummy equal to one if the individual holds a temporal contract and zero if a permanent contract is held. After carrying out Coarsened Exact Matching (CEM), the analysis is performed on a matched sample of individuals that are equal in observed characteristics and only differ in holding a temporal or permanent contract.

Since covariates used to perform the matching correspond to categorical variables[9], exact matching rather than a propensity score matching is used. Exact matching allows to choose ex-ante the variables that should be balanced. In order to match treated and control observations, it coarsens each variable into substantially meaningful groups (Blackwell et al., 2009). Variables affecting both the probability of having a temporal contract and individual preferences for redistribution must be used at the time of implementing matching. Once variables are defined, matching generates strata of individuals with the same covariates and therefore, only differing in the fact of being treated (if they hold a temporal contract) or control (if they hold a permanent contract). In other words, exact matching divides the sample into strata in a way such that all individuals inside of the same strata have exactly the same characteristics and only differ in the type of contract hold. The fact of holding a specific contract is considered as random and the causal effect of temporal contracts on preferences for redistribution can be estimated. The underlying trade-off results from the number of strata and bins used to match individuals. Larger bins will result in fewer strata, and fewer strata will result in more diverse observations and, therefore, higher imbalance (Blackwell et al., 2009). Once matching is performed, the L1 statistic indicates the remaining global imbalance. The L1 statistic is a comprehensive measure of global imbalance that takes a value equal to zero when complete balance exists and equal to

---

[8]Probit regression results are displayed in Table A.2. of the Appendix.

[9]Age is the only continuous variable used in the matching procedure. CEM is allowed to automatically coarsen the variable based on an automatic coarsening algorithm that divides the variable in 14 intervals.

one when the sample is completely imbalanced. This is an important fact, since the balance, both in means and in the distribution, between control and treated group is what will allow for the identification of temporal contract effect on preferences for redistribution.

Matching is a nonparametric method of controlling for confounding influence of pretreatment control variables in observational data. This methodology allows us to estimate the sample average treatment effect on the treated (SATT) without much model dependence (Iacus et al., 2012). In order to satisfy the no omitted variable bias assumption, the treatment variable must be independent of the potential outcomes conditional on covariates. If the covariates determining the treatment, which in this case is the fact of holding a temporal contract, are used in the matching procedure the treatment assignment becomes a random fact and the causal effect can be estimated. Furthermore, exact matching restricts the matched data to areas of common empirical support and meets the *congruence principle*, which states that the data space and analysis space should be the same (Blackwell et al., 2009; Iacus et al., 2012).

The choice of variables is determined by a literature search focused on determinants of temporal contracts and preferences for redistribution as well as by data availability. According to Morris and Vekker (2001),[10] temporal workers are less educated, more likely to belong to a minority group and be females than their permanent contracts counterpart. Furthermore, those individuals who have been temporarily unemployed, those working in the construction or agriculture sectors and the young are more likely to hold a temporal contract (Amuedo-Dorantes, 2000).[11] Moreover, as discussed previously, these variable are also found to be individual determinants of redistribution preferences (Finseraas, 2012; Cusack et al., 2006; Rehm, 2009, 2011; Ravallion and Lokshin, 2000).

According to García-Pérez et al. (2016), the fact of entering the labor market after the 1984 reform, increased the probability of holding a temporal labor contract. Therefore, *Reform84*, a dummy variable that equals one if the individual became 16 years old[12] after 1984, and 0 otherwise, accounts for it. Individuals are matched within each year of the survey in order to control for unobserved heterogeneity at the year level. It should also be noticed that specific regional variation cannot be eliminated by matching on regions due to the sample size.[13] *Gender*, a dummy variable that equals one if the respondent is a female; *Education*, a variable that equals one if the highest level of education is lower than secondary education, two if it is secondary education but lower than tertiary education and three if the highest level of education corresponds to tertiary education; and *Minority*, a dummy variable that equals one if the respondent belongs to a minority ethnic group in Spain, accounts for the fact that temporal workers are more likely to be women, less educated and belong to a minority group (Morris and Vekker, 2000) as well as support higher redistribution (Finseraas, 2012; Rehm, 2009, among others). Furthermore, the young and those who had been temporally unemployed are more likely to support redistribution (Rehm, 2009 and 2011) as well as hold a temporal contract (Amuedo-Dorantes, 2000). Therefore, *Age* a variable equal to the years of the respondent, and *Unemployed12*, a dummy variable taking a value of 1 if the individual has been unemployed and looking for a job for a period of 12 months or more, account for the previous factors. Last, Ravallion and Lokshin (2000) find that those living in a rural area have stronger preferences for redistribution. Thus, *Domicile*, a dummy variable that equals to one if the respondent lives in a big city or suburbs, town or small city accounts for it.

---

[10]Morris and Vekker (2001) use data from the Current Population Survey (CPS) in USA for the years 1995 and 1997.

[11]Amuedo-Dorantes (2000) uses data from the Spanish Labor Force Survey carried on in 1995 and 1996.

[12]The legal age to enter the labor market in Spain is established to be 16 years.

[13]The greatest share of the welfare spending in Spain is decentralized at the regional level through education, health and social protection. Thus, there are significant differences among regions, both in population characteristics and redistributive policies, that we need to control for. The ideal matching would be within regions but since the sample size is not large enough this is not possible. We take into account this possible source of variation in the empirical analysis by including regional fixed effects in every model specification.

Table 1. Differences in Means Between Treated and Control Groups: Variables Used in the Matching Procedure

	Mean		t-test (p-value)
	Treated	Control	
Unmatched Sample			
Gender	0.532	0.423	-9.213 (0.000)
Education	1.898	1.990	5.440 (0.000)
Reform84	0.648	0.354	-25.584 (0.000)
Age	38.232	49.012	28.307 (0.000)
Unemployed12m	0.323	0.152	-17.962 (0.000)
Domicile	0.534	0.627	7.870 (0.000)
Minority	0.043	0.018	-6.356 (0.000)
Matched Sample			
Gender	0.523	0.523	0.00 (1.000)
Education	1.937	1.937	-0.00 (1.000)
Reform84	0.637	0.637	-0.00 (1.000)
Age	38.186	39.171	-0.87 (0.385)
Unemployed12m	0.261	0.261	0.00 (1.000)
Domicile	0.559	0.559	-0.00 (1.000)
Minority	0.005	0.005	-0.00 (1.000)

Note: Treated group corresponds to individuals holding a temporal contract. Control corresponds to individuals holding permanent contract.)

Therefore, the individual level variables used in the matching procedure correspond to *Gender*, *Education*, *Reform84*, *Age Unemployed12m*, *Domicile*, *Year* and *Minority*.[14] Results of the Probit estimation are displayed in Table A.2 of the Appendix, which shows that all variables included in the matching have coefficients as expected and a statistically significant effect on the probability of holding a temporal contract.

In order to identify the effect of temporal contracts, control and treated groups must be balanced in observable characteristics. Table 1 shows that in the unmatched sample this condition is not satisfied. In the original sample, all variables described above are significantly different in the treated and control groups. Therefore, the effect of temporal contracts cannot be studied since it would be biased by other variables influencing redistribution preferences. Thus, exact matching is needed in order to balance the covariates between individuals holding a temporal and a permanent contract. In order to determine whether or not a good matching is achieved, a comparison of means and distributions between treated and control individuals in the matched and unmatched sample is done. In the Appendix, Table A.3 shows that once the sample is matched none of the differences between treated and control groups are statistically significant, neither in their mean values or distributions. Furthermore, L1 statistic informs of the overall variance reduction as well as the individual variance remaining. The L1 multivariate distance is reduced from 0.608 before the matching to 0.363 once the matching is done and the only variable that is not perfectly balanced is age.[15]

In order to ensure that the distribution of the dependent variable has not been altered by the matching procedure, Figure 4 displays the distribution of preferences for redistribution of the matched sample. We can observe that, as showed previously, more than 80 percent of the variation occurs in the highest levels of preferences. Furthermore, the distribution shows that the share of individuals in category five, is higher for individuals holding temporal rather than permanent contract. This relation is the opposite in all other levels.

---

[14]Table A.1 of the Appendix shows the descriptive statistics of the variables used in the analysis for the pre and post matched samples.

[15]See Table A.3 in the Appendix.

Figure 4. Distribution of Preferences for Redistribution by Contract Type
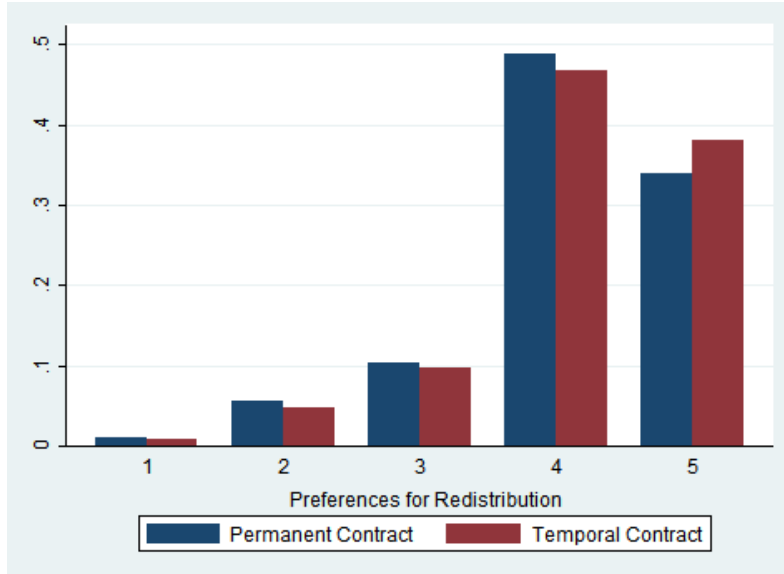
Note: Marched sample.

Finally, since the matched sample is balanced in the characteristics determining both the fact of holding a temporal labor contract and preferences for redistribution, we are comparing very similar individuals, interviewed in the same period of time. By estimating an Ordered Logit model that accounts for the categorical characteristic of the dependent variable, we are able to identify the causal effect of holding a temporal contract on preferences for redistribution.

4.2.2 Estimation

When the matching procedure is exact, a simple difference in means is enough to obtain the treatment effect (Blackwell et al., 2009). In this case, some minor imbalance remains in the matched sample and therefore a parametric model controlling for the variables used in the matching procedure is estimated (Iacus et al., 2012). The use of a parametric frameworks allows to choose the most appropriate estimation model. In this case, due to the categorical characteristic of the dependent variable, a series of Ordered Logit models are estimated based on the following specification:

$$Preferences Redistribution_{i,t} = \alpha + \beta Temporal_{i,t} + \gamma X_{i,t} + \epsilon_{i,t} \tag{1}$$

where $Preferences Redistribution$ is the dependent variable and corresponds to preferences for redistribution of individual i interviewed in year t. $Temporal$ is the main variable of interest and equals to one if individual i holds a temporal contract and zero if individual i holds an permanent contract. The vector of control variables is denoted as X. The residuals, ϵ, are assumed to be identical and independently distributed.

The first hypothesis to be tested states that holding a temporal contract increases the risk perceived by an individual and therefore has a positively influence in redistribution preferences. Therefore, the β coefficient of $Temporal$ is expected to be positive and statistically significant. If this is the case, it would provide causal evidence in support of the insurance theory. In order to account for the observation importance, estimators require weighting observations according to the size of their strata (Blackwell et al., 2009; Iacus et al., 2012). Therefore, in all regressions, iweights are applied. First, preferences for redistribution are estimated as a function of temporal contracts. Second, we include regional dummies to control for omitted variables that can determine both redistribution preferences and the contract type hold. Since Spain is made

up of 17 regions, with different levels of wealth as well as individual characteristics, including regional fixed effects controls for regional variation that could not be eliminated through the matching procedure. Third, we include temporal fixed effects. Even though matching is performed based on the survey year, controlling for temporal fixed effects eliminates the remaining variation derived from yearly specific factors. Fourth, as a robustness check, the variables used in the matching procedure are included as controls. Including the matching variables helps control for such variance and provide a more accurate estimator. This specification is the preferred specification.

Furthermore, as a robustness check, extra controls are included that can effect preferences for redistribution. Even though left-right wing is a factor influencing redistribution preferences (Cusack et al., 2006; Berens, 2015; Fernández-Albertos and Manzano, 2016) it is not included in the matching procedure to avoid an increase in strata that would bring a substantial reduction in the matched sample. In addition, it is not clear which one is the best division of the ten points scale used to codify the variable. Adding left-right wing alignment as a control, allows to check that the effect being attributed to temporal contracts does not belong to ideological factors. Next, including crisis as a control allows to assess if the adverse macroeconomic situation had an effect by itself in determining preferences for redistribution. While keeping the coefficient of temporal contracts stable, ensures that the effect found does not belong to the period of time considered. In addition, the fact of belonging to a labor union is positively related with redistribution preferences (Ravallion and Lokshin, 2000; Cusack et al., 2006). At the same time, in the Spanish case, are mainly permanent workers the ones that belong to a labor union or company's committees (Rueda, 2007). In our sample, the $Labor - Union$ variable is not available for the 2012 survey. Therefore, in order to keep data from the 2012 survey in the sample, the variable is opted to be included as a control rather than in the matching procedure. Finally, it is widely stated in the literature that income is a major factor determining preferences for redistribution (Cusack et al., 2006; Finseraas, 2009; Iversen and Soskice, 2001; etc.). Different codifications and missed observations of the variable in the ESS do not allow to sort observations in homogeneous groups to be used in the matching procedure. Therefore, a dummy variable that equals to one if the individual has income above the median and zero otherwise is used to control for potential effects that income might have in redistribution preferences.

In order to account for heterogeneous effects derived from the adverse economic context, a second model is estimated as follows:

$$
\begin{aligned}
PreferencesRedistribution_{i,t} = \alpha + \beta_1 Temporal_{i,t} + \beta_2 Crisis_t \\
+ \beta_3 Temporal_{i,t} * Crisis_t + \gamma X_{i,t} + \epsilon_{i,t}
\end{aligned}
\tag{2}
$$

If the adverse macroeconomic situation increases the perceived risk, and the perceived risk positively effects redistribution preferences, β_2 should be positive and significant. As in the previous case, β_1 is expected to be positive and significant, indicating a positive effect of holding a temporal contract on preferences for redistribution. Furthermore, a positive and significant β_3 would indicate that, *ceteris paribus*, in the crisis period the increase in risk perception has a stronger effect for individuals holding a temporal contract. Therefore, it would give support to the hypothesis that individual rather than macroeconomic characteristics matter more at the time of shaping redistribution preferences. On the contrary, a negative and significant effect of β_3 would mitigate the effect of holding a temporal contract type in redistribution preferences indicating that the macroeconomic context matters more than the individual characteristics. Since the matching we are using to perform such estimation is based on the year of the survey, we are considering the effect of temporal contracts on individuals that are interviewed in the same year and thus, during the pre or post crisis period.

In summary, the first regression will inform of the causal effect of holding a temporal contract on choosing one of the five levels of redistribution described before. The second regression

will allow us to assess heterogeneous effects of temporal contracts depending on the macroeconomic context as well as the impact of the adverse economic environment by itself. Using non-parametric models after matching allows to estimate the impact of temporal contracts without much model dependence (Iacus et al., 2012). Adding individual variables used in the matching procedure as well as regional and temporal fixed effects in the model, helps to control for omitted variable bias and increase the precision of the estimates. Moreover, considering additional controls that were discarded from the final matching specification due to data limitations as robustness checks help us assess the consistency of the results.

5 Results

In this section we present the results of the two models introduced in the previous section. First, we present the baseline results that show the effect of temporal contracts on redistribution preferences. Second, we present the results taking into account the heterogeneous effect of contracts before and after the crisis as well as compare how the crisis effected preferences for redistribution of individuals depending on the contract type.

5.1 Baseline Results

Table 2 reports the main results of the Ordered Logit estimation of Model 1. Results reported in column 1 show that holding a temporal labor contract increases preferences for redistribution. Furthermore, this effect remains positive and significant in all specifications. This result holds and remains stable whether including regional (column 2) and temporal fixed effects (column 3) or controlling for left-right ideology (column 5), belonging to a labor union (column 7), or having income above the median (column 8). Regression number four is the preferred specification, since it corresponds to the observations which derive directly from the matching procedure. Using this specification allows for the identification of the causal effect of holding a temporal contract, while also controlling for potential regional heterogeneity. Thus we are comparing treated and control groups that are statistically similar. Adding further controls, the coefficient of interest remains stable and, therefore, gives extra support to the positive coefficient estimated in regression number four. Another fact that should be discussed is the need to perform the analysis using all five categories of redistribution preferences. Since the number of observations belonging to those categories supporting less redistribution is low, one could think that they can be collapsed. In Table 2, the cut-point test shows that none of the categories can be collapsed. Therefore, the analysis must be performed using the five possible categories described above.

One drawback of Order Logit estimations is that it presents results that are not directly interpretable. Even though being statistically significant, we cannot see if they are quantitatively meaningful. In order to interpret the real magnitude of the estimation, marginal effects have to be computed for each of the five categories of preferences for redistribution.

Figure 5 represents the estimated average marginal effects (AME) for each of the five possible categories of redistribution preferences. The marginal effect is computed as the difference in the predicted value of probability of choosing one of the five categories as the temporal contract variable changes from zero (permanent contract) to one (temporal contract), while all other variables are held constant at their mean values. Intuitively, it treats an individual i as though s/he holds a temporal contract regardless of the type of contract that is actually being held and computes the probability this individual would support preferences for redistribution j. Then, it treats the same individual i as if s/he holds a permanent contract and computes again the probability of supporting the same level of redistribution j. The difference between both probabilities is the marginal effect of the individual i on supporting preferences j. Once this process is repeated for all the sample, the average of such marginal effects gives the AME of temporal contracts of preferences for redistribution. The results indicate that the fact of

Table 2. Effects of Temporal Contracts on Preferences for Redistribution

	Ordered Logit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporal	0.177***	0.174***	0.182***	0.187***	0.182***	0.182***	0.188***	0.203***
	(0.052)	(0.053)	(0.053)	(0.053)	(0.057)	(0.057)	(0.081)	(0.072)
Crisis						0.980***	0.994***	1.012***
						(0.110)	(0.152)	(0.133)
Region dummies	NO	YES	YES	YES	YES	YES	YES	YES
Year dummies	NO	NO	YES	YES	YES	YES	YES	YES
Matching Variables	NO	NO	NO	YES	YES	YES	YES	YES
Left-Right	NO	NO	NO	NO	YES	YES	YES	YES
Labor-Union	NO	NO	NO	NO	NO	NO	YES	YES
Income	NO	NO	NO	NO	NO	NO	NO	YES
N	5816	5816	5816	5816	5168	5168	4390	3239
Cut test: T1=T2	248.09	248.23	248.9	249.27	232.08	232.08	200.32	153.55
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T2=T3	601.34	601.95	604.29	605.69	543.75	543.75	483.15	333.9
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T3=T4	3636.76	3625.82	3605.01	3594.6	3228.1	3228.1	2834.68	2007.4
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Notes: (i) The dependent variable corresponds to *PreferencesRedistribution*. (ii) Standard errors are in parenthesis. (iii) *Cut-Point test*: test indicating whether the cuts delimiting two contiguous categories are equal in order to reduce the number of categories by collapsing them. p-values in brackets. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

changing from an permanent to a temporal contract has a positive effect on the probability of agreeing with the highest level of redistribution. This effect is negative for the probability of supporting any of the other levels. Specifically, Table 3 shows that when changing from a permanent to a temporal contract, the probability of strongly agreeing with *"The government should take measures to reduce differences in income levels"* increases by 0.041 percentage points. Conversely, when changing from a permanent to a temporal labor contract, the likelihoods of agreeing, neither agreeing or disagreeing, disagreeing and strongly disagreeing fall by 0.016, 0.014, 0.009 and 0.002 percentage points respectively.

Table 3. Marginal Effects of Temporal Labor Contracts on Redistribution Preferences

Categories	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
(a) Marginal Effect	-0.002**	-0.009***	-0.014***	-0.016***	0.041***
(b) Prob(PrefRedist=j | Temporal=0)	0.011	0.057	0.105	0.489	0.338
Effect in % = (a) / (b)	-18.18%	-15.79%	-13.08%	-3.27%	12.13%

Note: Marginal effects correspond to the estimation of Model 1 reported in Column 4 of Table 2. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

In order to appreciate correctly the magnitude of those changes, it is important to put them into perspective by considering the baseline probabilities of supporting each category of redistribution preferences. Therefore, as Table 3 shows, the fact of holding a temporal contract increases the likelihood of an individual strongly agreeing with *"The government should take measures to reduce differences in income levels"* by 12.13 percent. As previously seen, this is the only category that is positively affected by the fact of holding a temporal contract. While the likelihood of agreeing with the previous statement decreases by 3.27 percent, the magnitude

Figure 5. Marginal Effects of Temporal Contracts on Preferences for Redistribution
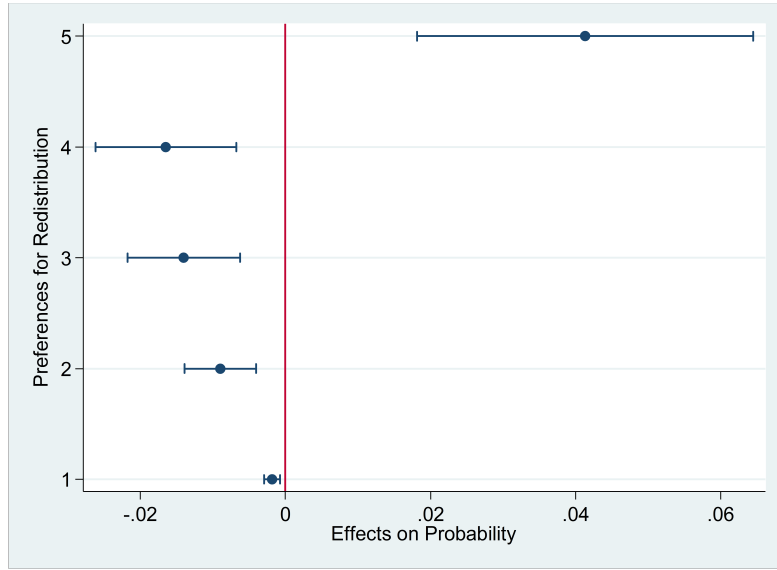
Note: Marginal effects correspond to the estimation of Model 1 reported in Column 4 of Table 2.

of the effect becomes larger for lower categories and implies 18.18 percent lower probability of strongly agreeing. This result indicates that the fact of holding a temporal contract has a positive effect on individual preferences for redistribution since it considerably increases the probability of strongly agreeing with the statement in consideration, while decreasing the probability of being grouped under one of the other categories. Since individuals holding temporal contracts face more risk derived from their precarious situation in the labor market, their preferences for redistribution are higher and, therefore, results give causal evidence in support of the insurance theory.

5.2 Heterogeneous Effects

Columns 6, 7 and 8 of Table 2 show a strong positive effect of the crisis over preferences for redistribution. Therefore, we extend the study to assess the heterogeneous effect that the contract type has on different macroeconomic contexts. Estimating Model 2, we are able to identify if what matters more in an adverse macroeconomic context at the time to determine redistribution preferences are individual or macroeconomic conditions.

As we have already seen, even when controlling for the economic crisis, holding a temporal labor contract has a positive and statistically significant effect on preferences for redistribution. On the other hand, Column one of Table 4 shows that *Crisis* has a positive statistically significant effect, at 99 percent confidence, consistent to the different specifications. This result suggests that a more uncertain and risky economic context increases redistribution preferences by itself. The interesting result here rises when we look at the interaction between temporal contract and crisis. Column 1 of Table 4 shows that the coefficient on the interaction term is negative and statistically significant, implying a mitigation of the contract type effect during the crisis period. In order to assess the magnitude of the effect, margins need to be computed. Results hold and remain stable, whether including regional fixed effects (column 2), controlling for left-right alignment (column 4), belonging to a labor union (column 5) or having income above the median (column 6). As in the previous section, regression three is the preferred specification since it corresponds to those observations which derive directly from the matching procedure and corresponds to a treated and control groups that are statistically similar. Since coefficients

21

Table 4. Effect of the Crisis and Temporal Contract on Preferences for Redistribution

	Ordered Logit					
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal	0.292***	0.281***	0.285***	0.270***	0.261***	0.307***
	(0.068)	(0.068)	(0.068)	(0.074)	(0.075)	(0.091)
*Crisis * Temporal*	-0.282***	-0.257**	-0.250**	-0.227**	-0.238*	-0.286**
	(0.106)	(0.106)	(0.106)	(0.113)	(0.127)	(0.146)
Crisis	0.557***	0.536***	0.459***	0.490***	0.569***	0.536***
	(0.063)	(0.063)	(0.067)	(0.071)	(0.08)	(0.091)
Region dummies	NO	YES	YES	YES	YES	YES
Matching Characteristics	NO	NO	YES	YES	YES	YES
Left-Right	NO	NO	NO	YES	YES	YES
Labor-Union	NO	NO	NO	NO	YES	YES
Income	NO	NO	NO	NO	NO	YES
N	5816	5816	5816	5168	4390	3239
Cut test: T1=T2	248.35	248.47	248.83	231.64	199.91	153.2
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T2=T3	602.31	602.83	604.27	542.33	481.81	332.95
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T3=T4	3615.17	3605.29	3595.29	3229.89	2836.26	2010.14
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Notes: (i) The dependent variable corresponds to *PreferencesRedistribution*. (ii) Standard errors are in parenthesis. (iii) *Cut-Point test*: test indicating whether the cuts delimiting two contiguous categories are equal in order to reduce the number of categories by collapsing them. p-values in brackets. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

of interest remain considerably stable with the introduction of further controls, we consider them consistent. Furthermore, the cut-point test indicates that categories of redistribution preferences cannot be collapsed.

The only variable that remains slightly imbalanced in its distribution after the matching is *Age*. As a robustness check, we have repeated the analysis for individuals who entered the labor market ten years before and after the 1984 labor market. Reducing the sample allows us to compare individuals that are more homogeneous in terms of age but still affected differently by the incidence of temporal contracts (García-Pérez et al., 2016). Table A.6. of the Appendix shows that results for the restricted sample are consistent with those presented here.

In order to assess the regression coefficient, Figure 6 shows the marginal effect of holding a temporal contract on the five categories of redistribution preferences in the pre and post crisis periods.[16] Panel (a) shows that in the pre-crisis period the fact of holding a temporal contract increases the probability of strongly agree with redistribution and decreases the probability of being grouped in any of the other categories. Those effects are no longer significant in the post-crisis period represented in panel b. Furthermore, Table 5 displays the magnitudes of such marginal effects. In the pre-crisis scenario presented in Panel (a) of Table 5, the fact of holding a temporal contract increases the likelihood of supporting the highest level of redistribution preferences by 0.06 percentage points. When assessing the magnitude of the effect, holding a temporal contract increases the likelihood of being grouped in this category by 22.55 percent. However, as Figure 6 shows, this effect is negative for the rest of the categories. In this scenario,

---

[16]To ensure that the marginal effects found with the estimation of Model 2 do not derive from different characteristics of individuals in the two economic contexts determining preferences for redistribution, as a robustness check we add at the Regression 3 reported in Table 4 the interactions of the crisis variable with all the variables used in the matching process. Tables A.4 and A.5 in the Appendix shows that marginal effects remain significant and consistent.

Figure 6. Marginal Effects of Temporal Contracts on Preferences
for Redistribution
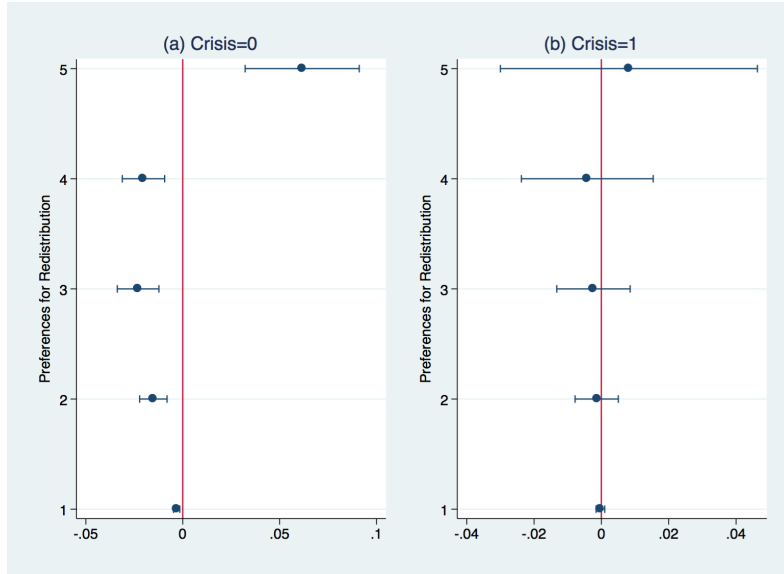
Note: Marginal effects correspond to the estimation of Model 2 reported
in Column 3 of Table 4.

the effect of holding a temporal contract increases the likelihood of strongly agreeing by 22.55 percent while decreases the probability of disagreeing by 24.59 percent. In the post-crisis period, the effect of temporal contracts on redistribution preferences is no longer significant for any of the five possible categories. The results suggest that the perceived risk is a strong determinant of redistribution preferences and provides support to the insurance theory. If redistribution is seen as a social insurance, preferences will increase when risk in the labor market is also increasing (Cusack et al., 2006).

In order to assess the macroeconomic influence on redistribution preferences depending on individual characteristics, Figure 7 reports the marginal effects of the economic crisis on redistribution preferences depending on the contract type. We can observe that in both cases the crisis increases the probability of supporting the highest level of redistribution while there is a negative effect in the remaining categories.

Panel (a) in Table 6 shows that the crisis increases the probability of strongly agreeing with redistribution among individuals holding a temporal contract by 0.049 percentage points. It implies that, in the crisis period, they are 14 percent more likely to be grouped under this category. As in previous cases, the probability of agreeing with other categories is affected negatively. The magnitude of the effect becomes larger when redistribution support is weaker. While individuals are 4.73 percent less likely of agreeing with redistribution, the probability of strongly disagreeing turns out to be 23.53 percent lower. Panel (b) reports the marginal effects of the crisis for individuals holding permanent contracts and shows that the magnitude of the crisis' effect is larger than for those holding a temporal contract. In this case, the probability of strongly agreeing with redistribution increases by 0.102 percentage points, implying that those individuals holding a permanent contract are 37.1 percent more likely to strongly agree with redistribution in the post-crisis period than before. After the crisis, individuals holding permanent contracts are less likely to agree with all the remaining categories of redistribution. Even though they are only 7.3 percent less likely to agree with redistribution, the probability of disagreeing with it decreases by 0.023 percentage points, meaning that they are 37.71 percent less likely to be grouped under this category.

Therefore, the results show that individual characteristics have a predominant role defining redistribution preferences when the macroeconomic context is favorable. The effect of the con-

Table 5. Marginal Effects of Temporal Contracts on Redistribution Preferences.

	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree Nor Disagree	(4) Agree	(5) Strongly Agree
			Categories		
			(a) Crisis=0		
(I) Marginal Effect	-0.003***	-0.015***	-0.023***	-0.020***	0.062***
(II) Prob(PrefRedist=j|Temporal=0)	0.015	0.061	0.116	0.533	0.275
Effect in % = (I) / (II)	-20.00%	-24.59%	-19.83%	-3.75%	22.55%
			(b) Crisis=1		
(I) Marginal Effect	-0.0003	-0.001	-0.002	-0.004	0.008
(II) Prob(PrefRedist=j|Temporal=0)	0.007	0.052	0.088	0.428	0.425
Effect in % = (I) / (II)	-4.29%	-1.92%	-2.27%	-0.93%	1.88%

Note: Marginal effects correspond to the estimation of Model 2 reported in Column 3 of Table 4. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

Table 6. Crisis Marginal Effects on Redistribution Preferences by Contract Type

|	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree Nor Disagree	(4) Agree	(5) Strongly Agree
			Categories		
			(a) Temporal Contract		
(I) Marginal Effect	-0.002**	-0.009**	-0.015**	-0.023**	0.049**
(II) Prob(PrefRedist=j|Crisis=0)	0.008	0.05	0.105	0.486	0.35
Effect in % = (I) / (II)	-23.53%	-18.00%	-14.29%	-4.73%	14.00%
			(b) Permanent Contract		
(I) Marginal Effect	-0.005***	-0.023***	-0.036***	-0.039***	0.102***
(II) Prob(PrefRedist=j|Crisis=0)	0.015	0.061	0.116	0.534	0.275
Effect in % = (I) / (II)	-33.33%	-37.71%	-30.90%	-7.30%	37.10%

Note: Marginal effects correspond to the estimation of Model 2 reported in Column (3) of Table 4. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

tract type disappears due to an increase in redistribution preferences of those with permanent contracts when the macroeconomic context is adverse. It indicates that macroeconomic characteristics, rather than individual determinants, affect those with lower risk perception and make them support higher redistribution levels.

6   Conclusion

An extended body of literature has tried to disentangle the mechanisms behind the formation of redistribution preferences. Although existing research reveals interesting relations explaining redistribution demand, little is known about the impact of the macroeconomic context in shaping redistribution preferences. Even though it is well stated in the redistribution as insurance literature that the risk faced at the individual level is a main factor determining redistribution demand, an adverse macroeconomic context might alter the perceived risk independently of the individual characteristics. While social distance models together with ethnic and racial heterogeneity predict that increases in inequality will lead to lower preferences for redistribution through the over representation of the minorities among the poor (Lupu and Pontusson, 2011; Alesina and Glaeser 2004), social-insurance models predict that preferences for redistribution will depend on the risk faced by the individual and the distribution of inequality (Alt and

Figure 7. Marginal Effects of the Economic Crisis on Preferences for Redistribution
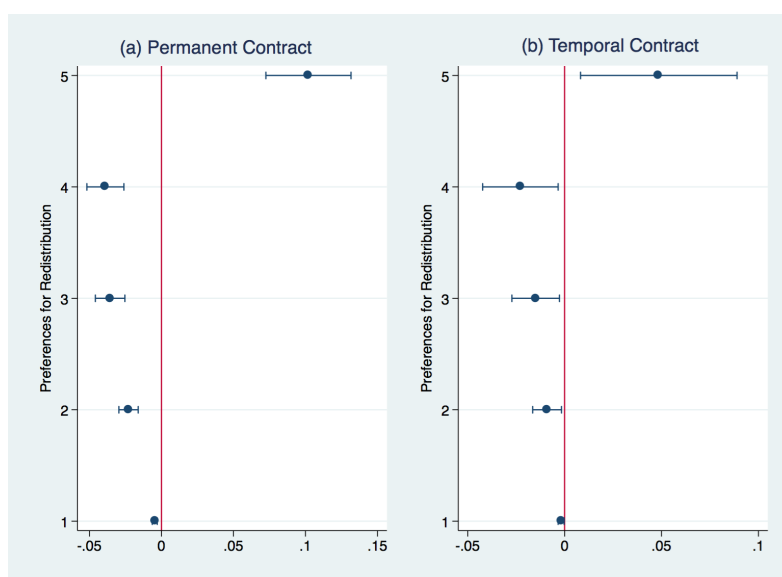
Note: Marginal effects correspond to the estimation of Model 2 reported in Column 3 of Table 4.

Iversen, 2017; Cusack et al., 2006). Moreover, when looking at dual labor markets dynamics determining redistribution preferences might respond to different logics (Fernández-Alberto and Manzanos, 2014; Barens, 2015).

Applying exact matching to survey data from the European Social Survey for the period 2002-2014, we find causal evidence that in the Spanish dual labor market temporal contracts are positively related to preferences for redistribution. The results show that risk perception is an important factor determining redistribution preferences and provides support to the insurance theory. We find evidence supporting the first hypothesis according to which the fact of holding a temporal contract, and therefore facing higher risk in the labor market, has a positive effect in redistribution preferences. The results show being a temporal worker increases the probability of strongly agreeing with the statement that *"the government should take measures to reduce differences in income levels"* in 12.13 percent, while it reduces the probability of supporting any of the other options.

Interestingly, when assessing the heterogeneous effect of temporal contracts derived from the adverse macroeconomic context, the effect of holding a temporal contract loses significance at the time of determining individual preferences for redistribution. Therefore, we find evidence showing that under an adverse economic context, individuals facing more stable situations in the labor market are the ones that increase the most their redistribution preferences. Individuals holding a permanent contract are 37.1 percent more likely to strongly agree with redistribution when the economic situation is riskier, while the probability of individuals holding a temporal contract increases by 14 percent. Social insurance theory provides a good explanation for this change in the effect of the contract. In the pre-crisis period, with unemployment rates below 12 percent, individuals holding a permanent contract could see their labor market situation as secure. Their protection in the labor market is stronger compared to individuals holding temporal contract and therefore, the risk they face is lower. After the crisis, an economic context where the unemployment rate exceeded the 25 percent and the use of the of partial unemployment was becoming more common independently of the contract type, insecurity in the labor market extends beyond temporary workers. The effect of the contract disappears since the crisis has a positive effect for individuals holding temporal contracts, but the magnitude of such an effect is higher for those holding permanent contracts. Therefore, it gives support to

the second hypothesis according to which macroeconomic characteristics have a stronger impact on individual preferences when the economic context becomes adverse.

If the risk perception of those who are in more protected position in the labor market determine the redistribution demand, individuals in a more precarious position due to holding a temporal contracts are doubly disadvantaged. First, they face higher instability derived from low conversion rates into protected contracts (Güell and Petrongolo, 2007) and lower earnings (García-Pérez et al., 2016). Secondly, political support for those categories of social-insurance that would benefit them is reduced. On the other hand, the macroeconomic context plays an important role in determining redistribution preferences. If redistribution demand increases when the economic context is adverse independently on the contract, protection for those in a more disadvantaged position derived from the contract type, might see their protection increase. This study gives causal evidence supporting the Social Insurance theory and complements existing literature in identifying individual determinants of redistribution preferences. Learning about the different motivations toward redistribution preferences will allow us to learn more about voting behavior. Even though preferences become stronger when the risk in the labor market increases, distrust in the government might inhibit voters from translating such concerns through their vote (Kuziemko et al., 2015).

References

[] Abadie, A. and Imbens, G. W. (2006). Large sample properties of matching estimators for average treatment effects. *econometrica*, 74(1):235–267.

[] Alesina, A. and Angeletos, G.-M. (2005). Fairness and redistribution. *American Economic Review*, 95(4):960–980.

[] Alesina, A. and Glaeser, E. (2004). *Fighting poverty in the US and Europe: A world of difference.* Oxford University Press.

[] Alt, J. and Iversen, T. (2017). Inequality, labor market segmentation, and preferences for redistribution. *American Journal of Political Science*, 61(1):21–36.

[] Amuedo-Dorantes, C. (2000). Work transitions into and out of involuntary temporary employment in a segmented market: evidence from spain. *ILR Review*, 53(2):309–325.

[] Balcells, L., Fernández-Albertos, J., and Kuo, A. (2015). Preferences for inter-regional redistribution. *Comparative Political Studies*, 48(10):1318–1351.

[] Bentolila, S., Dolado, J. J., and Jimeno, J. F. (2012). Reforming an insider-outsider labor market: the spanish experience. *IZA Journal of European Labor Studies*, 1(1):4.

[] Berens, S. (2015). Preferences on redistribution in fragmented labor markets in latin america and the caribbean. *Journal of Politics in Latin America*, 7(3):117–156.

[] Blackwell, M., Iacus, S. M., King, G., and Porro, G. (2009). cem: Coarsened exact matching in stata. *The Stata Journal*, 9(4):524–546.

[] Bowles, S., Gintis, H., et al. (2000). Reciprocity, self-interest, and the welfare state. *Nordic Journal of Political Economy*, 26(1):33–53.

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

[] Cusack, T., Iversen, T., and Rehm, P. (2006). Risks at work: The demand and supply sides of government redistribution. *Oxford Review of Economic Policy*, 22(3):365–389.

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

[] Fernández-Albertos, J. and Manzano, D. (2016). Dualism and support for the welfare state. *Comparative European Politics*, 14(3):349–375.

[] Finseraas, H. (2009). Income inequality and demand for redistribution: A multilevel analysis of european public opinion. *Scandinavian Political Studies*, 32(1):94–119.

[] Finseraas, H. (2012). Poverty, ethnic minorities among the poor, and preferences for redistribution in european regions. *Journal of European Social Policy*, 22(2):164–180.

[] García, P. O. (2013). Cambios en la legislación laboral y contratación temporal en españa/changes in labor legislation and temporary employment in spain. *Cuadernos de relaciones laborales*, 31(1):141.

[] García-Pérez, J. I., Castelló, J. V., and Marinescu, I. (2016). Can fixed-term contracts put low skilled youth on a better career path? evidence from spain. Technical report, National Bureau of Economic Research.

Güell, M. and Petrongolo, B. (2007). How binding are legal limits? transitions from temporary to permanent work in spain. *Labour Economics*, 14(2):153–183.

Iacus, S. M., King, G., and Porro, G. (2012). Causal inference without balance checking: Coarsened exact matching. *Political analysis*, 20(1):1–24.

Iversen, T. and Soskice, D. (2001). An asset theory of social policy preferences. *American Political Science Review*, 95(4):875–893.

Izquierdo, M., Lacuesta, A., Puente, S., et al. (2013). La reforma laboral de 2012: un primer análisis de algunos de sus efectos sobre el mercado de trabajo. *Boletín Económico*, (SEP).

Jofre-Monseny, J., Sorribas-Navarro, P., and Vázquez-Grenno, J. (2016). Immigration and local spending in social services: evidence from a massive immigration wave. *International Tax and Public Finance*, 23(6):1004–1029.

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

Lübker, M. (2006). Inequality and the demand for redistribution: are the assumptions of the new growth theory valid? *Socio-Economic Review*, 5(1):117–148.

Lupu, N. and Pontusson, J. (2011). The structure of inequality and the politics of redistribution. *American Political Science Review*, 105(2):316–336.

Meltzer, A. H. and Richard, S. F. (1981). A rational theory of the size of government. *Journal of political Economy*, 89(5):914–927.

Moene, K. O. and Wallerstein, M. (2001). Inequality, social insurance, and redistribution. *American Political Science Review*, 95(4):859–874.

Moene, K. O. and Wallerstein, M. (2003). Earnings inequality and welfare spending: A disaggregated analysis. *World Politics*, 55(4):485–516.

Morris, M. D. and Vekker, A. (2001). An alternative look at temporary workers, their choices, and the growth in temporary employment. *Journal of Labor Research*, 22(2):373–390.

Ortega, E. and Peñalosa, J. (2013). Algunas reflexiones sobre la economía española tras cinco años de crisis. *Banco de España. Documentos Ocasionales*, (1304).

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

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

Rehm, P. (2011). Social policy by popular demand. *World Politics*, 63(2):271–299.

Roser, M. and Cuaresma, J. C. (2016). Why is income inequality increasing in the developed world? *Review of Income and Wealth*, 62(1):1–27.

Rueda, D. (2007). *Social democracy inside out: Partisanship and labor market policy in advanced industrialized democracies*. Oxford University Press on Demand.

Appendices

Table A1. Definition of the Variables and Descriptive Statistics

Variable	Definition	Before Matching		After Matching	
		Mean	St. Dev	Mean	St. Dev
Prefdist	Question (1-5);	4.092	0.889	4.112	0.867
	1: Strongly Disagree,				
	2: Disagree;				
	3: Neither Agree nor Disagree;				
	4: Agree;				
	5: Strongly Agree				
Temporal	Dummy variable.	0.310	0.462	0.351	0.477
	1: Temporal Contract;				
	0: Permanent Contract				
Crisis	Dummy variable.	0.435	0.496	0.419	0.493
	1: Year interview after 2008;				
	0: Year interview 2008 or before.				
Gender	Dummy variable.	0.457	0.498	0.523	0.499
	1: Female;				
	0: Male.				
Left-Right	Question (0-10);	4.355	2.067	4.312	2.041
	0: Left, 1: Right.				
Labor-Union	Dummy variable.	0.223	0.416	0.187	0.390
	1: is/has been member of a labor union.				
Education	Highest level of education achieved.	1.962	0.706	1.937	0.637
	1: Lower than secondary education;				
	2: Secondary, lower than tertiary education;				
	3: Tertiary education.				
Income	Dummy variable.	0.334	0.472	0.308	0.462
	1: Income above the median;				
	0: Income below the median.				
Reform84	Dummy variable.	0.445	0.497	0.637	0.481
	1: Became 16 years old after 1984.				
Age	Age of the respondent in years	45.672	16.618	39.045	15.014
Unemployed12m	Dummy variable.	0.205	0.404	0.261	0.439
	1: Has been unemployed and seeking for work				
	for a period of 12 months or more.				
Domicile	Dummy variable.	0.598	0.490	0.559	0.495
	1: Respondent lives in a big city,				
	suburbs or outskirts of a big city, town or small city.				
	0: Respondent lives in a country village,				
	farm or home in countryside.				
Minority	Dummy variable.	0.026	0.159	0.005	0.073
	1: Respondent belongs to a minority				
	ethnic group in Spain.				

Table A2. Determinants of contract type. Probit estimation before and after matching

	Non-matched Sample		
	Coefficient	z-stat	
Gender	0.271	(8.55)	***
Education	-0.432	(-16.54)	***
Reform84	0.246	(4.80)	***
Age	-0.028	(-16.38)	***
Unemployed12m	0.606	(16.37)	***
Domicile	-0.185	(-5.76)	***
Minority	0.429	(4.52)	***
Constant	1.266	(10.82)	***

Number observations	8094
Pseudo-R2	0.152
LR – Chi2	1522.48
	[0.000]

Notes: Dependent variable is *Temporal* (dummy equal to one if the contract hold is a temporal contract and zero if it is an permanent contract). *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

Table A3. Multivariate L1 Distances. Matched and Unmatched Samples.

(a) Unmatched Sample						
				Distribution		
	L1 distance	min	25%	50%	75%	max
Gender	0.109	0	0	1	0	0
Education	0.087	0	0	0	-1	0
Reform84	0.294	0	0	1	0	0
Age	0.292	1	-10	-13	-15	-8
Unemployed12m	0.171	0	0	0	1	0
Domicile	0.092	0	0	0	0	0
Minority	0.024	0	0	0	0	0
Multivariate L1 distance			0.608			

(b) Matched Sample						
				Distribution		
	L1 distance	min	25%	50%	75%	max
Gender	6.90E-16	0	0	0	0	0
Education	6.70E-16	0	0	0	0	0
Reform84	1.60E-15	0	0	0	0	0
Age	0.089	2	0	0	-1	-1
Unemployed12m	1.00E-15	0	0	0	0	0
Domicile	7.20E-16	0	0	0	0	0
Minority	1.20E-16	0	0	0	0	0
Multivariate L1 distance			0.363			

Table A4. Marginal Effects of Temporal Contracts on Redistribution Preferences: Robustness Check

	Categories				
	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree Nor Disagree	(4) Agree	(5) Strongly Agree
	(a) Crisis=0				
(I) Marginal Effect	-0.003***	-0.015***	-0.023***	-0.019***	0.061***
(II) Prob(PrefRedist=j|Temporal=0)	0.015	0.061	0.116	0.533	0.275
Effect in % = (I) / (II)	-20.00%	-24.59%	-19.83%	-3.56%	22.18%
	(b) Crisis=1				
(I) Marginal Effect	-0.0003	-0.001	-0.002	-0.004	0.008
(II) Prob(PrefRedist=j|Temporal=0)	0.007	0.052	0.088	0.428	0.425
Effect in % = (I) / (II)	-4.29%	-1.92%	-2.27%	-0.93%	1.88%

Note: Marginal effects derive from the estimation of Model (2) regression of the Column 3 of Table 4 adding as further controls the interaction between the variable *Crisis* and all the variables used in the matching procedure. *** Denotes significance at 1% level, ** at the 5% level and * at the 10% level.

Table A5. Crisis Marginal Effects on Redistribution Preferences by Contract Type. Robustness Check

	Categories				
	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree Nor Disagree	(4) Agree	(5) Strongly Agree
	(a) Temporal Contract				
(I) Marginal Effect	-0.002**	-0.009**	-0.015**	-0.021**	0.048**
(II) Prob(PrefRedist=j|Crisis=0)	0.008	0.05	0.105	0.486	0.35
Effect in % = (I) / (II)	-23.53%	-18.00%	-14.29%	-4.32%	13.71%
	(b) Permanent Contract				
(I) Marginal Effect	-0.005***	-0.023***	-0.036***	-0.036***	0.101***
(II) Prob(PrefRedist=j|Crisis=0)	0.015	0.061	0.116	0.534	0.275
Effect in % = (I) / (II)	-33.33%	-37.71%	-30.90%	-6.74%	36.73%

Note: Marginal effects derive from the estimation of Model (2) regression of the Column 3 of Table 4 adding as further controls the interaction between the variable *Crisis* and all the variables used in the matching procedure. *** Denotes significance at 1% level, ** at the 5% level and * at the 10% level.

Table A6. Effect of Crisis and Temporal Contract on Preferences for Redistribution. Restricted Sample.

	Ordered Logit					
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal	0.306***	0.290***	0.290***	0.275**	0.274**	0.300**
	(0.105)	(0.100)	(0.107)	(0.116)	(0.116)	(0.140)
*Crisis*Temporal*	-0.503***	-0.475***	-0.476**	-0.416**	-0.469**	-0.521**
	(0.167)	(0.168)	(0.169)	(0.179)	(0.201)	(0.227)
Crisis	0.571***	0.560***	0.411***	0.498***	0.435***	0.275
	(0.099)	(0.100)	(0.140)	(0.149)	(0.162)	(0.186)
Region dummies	NO	YES	YES	YES	YES	YES
Matching Variables	NO	NO	YES	YES	YES	YES
Left-Right	NO	NO	NO	YES	YES	YES
Labor-Union	NO	NO	NO	NO	YES	YES
Income	NO	NO	NO	NO	NO	YES
N	2362	2362	2362	2136	1854	1395
Cut test: T1=T2	96.12	96.11	96.25	86.47	79.32	58.44
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T2=T3	250.34	250.54	251.08	232.55	209.47	147.77
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cut test: T3=T4	1454.84	1448.57	1442.57	1309.42	1168.67	849.44
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Notes: (i) The dependent variable corresponds to *PreferencesRedistribution*. (ii) Standard errors are in parenthesis. (iii) *Cut-Point test*: test indicating whether the cuts delimiting two contiguous categories are equal in order to reduce the number of categories by collapsing them. p-values in brackets. *** Denotes significance at the 1% level, ** at the 5% level and * at the 10% level.