Reform support in times of crisis:
The role of family ties[*]

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Abstract

We argue that an important determinant of voters' support for economic reform is the strength of family ties. While the 'crisis hypothesis' predicts that crises facilitate reform, we show in a political economy model that this relation can break down, and even reverse, when agents take into account the effect of reform on their family members. Applied to southern European countries with strong family ties, the model can rationalize why the extremely high levels of (youth) unemployment following the Great Recession have not led to more substantial reforms. Our findings suggest that in such countries austerity might block rather than foster structural reforms.

Keywords: Crisis, reform, family ties, altruism, youth unemployment
JEL Classification: D10, J48, P16

1 Introduction

The Great Recession and the subsequent sovereign debt crisis have triggered the most severe economic downturn in several southern European countries since World War II. Unemployment, especially among the young, has reached extremely high levels in the 'crisis countries'.[1] While Southern European labor markets are traditionally characterized by high youth unemployment rates, the Spanish rate of 56 percent in 2013 is nevertheless unprecedented. The data for Italy and Portugal are staggering too, reaching rates around 40 percent (in the same year). These statistics illustrate severe structural problems which had been attenuated during the boom of the early 2000s. Despite revealing these problems, the crisis has not led to substantial liberalizing reforms in these countries. The Heritage Foundation's Index of Economic Freedom shows a stagnation or even a reduction in 'labor freedom' in the crisis countries during the period 2008–2013.[2]

This lack of reform is puzzling as a sizable body of research in political economics argues that crises should facilitate economic reform. The alleged inverse relation between the state of an economy and a society's willingness to reform has been coined the 'crisis hypothesis' (see, among others, Drazen and Easterly, 2001). Rodrik (1996) even claims a tautological relation between crisis and reform: '[T]hat policy reform should follow crisis [...] is no more surprising than smoke following fire.' The limited reform effort in the crisis countries is at odds with the prediction of the crisis hypothesis. To paraphrase Rodrik (1996), there is fire, but where is the smoke?

In this paper, we describe a mechanism that rationalizes this lack of reform. We argue that an important determinant of a society's willingness to reform has been neglected in the literature: family ties, in particular altruistic links between parents and their working-age children. These links are particularly strong in southern Europe, a fact that has long been highlighted in sociological

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[1] In the following, when we refer to 'crisis countries', we think of Italy, Portugal, and Spain. We consider the case of Greece as too specific, in particular due to the sovereign default in March, 2012.

[2] This index is a widely used measure of economic freedom (for example in Gassebner et al., 2011). See Section 2 and Appendix C for a detailed description of the index and the other data sources that we refer to in this section.

research (see, for example, Reher, 1998) and is confirmed by the results of the 'World Values Survey' (see, for instance, Alesina and Giuliano, 2011). In a political economy model, we show that family ties and the resulting intra-family transfers can affect voting behavior in a way that makes resistance to reform particularly strong in times of crisis.

To provide a concrete illustration of the mechanism that relates intra-family altruism and voting behavior, we consider a labor market reform within an insider-outsider framework. We think of reforms as measures that cut back employment protection, for instance a reduction of severance pay requirements. On the one hand, such reforms lead to a higher risk of job loss and lower wages for established insiders. On the other hand, reform incentives firms to hire workers thereby increasing overall employment. The strong distinction between an insider and an outsider group is for illustration purposes only. In line with the literature (Lindbeck and Snower, 2002, Bentolila et al., 2012) we think of outsiders as those who do not have access to protected jobs with above-equilibrium wages. This group includes the unemployed, the underemployed, the fully employed on temporary contracts as well as low-wage earners.[3]

As a first step, we develop a benchmark scenario without altruism: the individualistic case. In this scenario all outsiders are in favor of reform whereas all insiders oppose it and thus the rationale of the crisis hypothesis applies: if the economic situation deteriorates, the share of outsiders rises and so does support for reform. Next, we extend the model by introducing intra-family altruism. We first assume that agents value their family members' well-being as strongly as their own: the completely altruistic case. In this scenario it can occur that outsiders who would prefer reform in the absence of altruism vote against reform as they take into account the effect of reform on their family members. Consider a 'mixed family' that consists of one insider and one outsider. Reform jeopardizes the insider's job but improves the job perspectives of the outsider who could

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[3]For several reasons, reform of an insider-outsider labor market is a particularly suitable context for our analysis. First, conflict of interest between two competing groups is the key aspect of insider-outsider theory, which is therefore a natural framework for political economy analyses. Second, dual labor markets illustrate a concrete problem of the southern European crisis countries (see Bentolila et al., 2012). Finally, economists widely agree that reducing labor market rigidities promotes job creation.

become an insider in case of reform. We show that, depending on the degree of altruism, the family member who is an outsider votes in favor of reform only if the improvement in employment perspectives is sufficiently good. If the outlook is not good enough, the outsider also prefers to preserve the status quo which ensures one secure insider income that can be shared between family members via transfers.

This is our key insight: the implication of the crisis hypothesis might be reversed in the presence of intra-family altruism — in times of crisis opposition to the implementation of reform is strong whereas good economic perspectives might even encourage reform. Regarding the model's sensitivity, we show that the crisis hypothesis still fails when family ties are substantially weaker than in the completely altruistic case.

Whereas the preceding findings are derived under risk neutrality, we allow for risk aversion in a next step. This allows to analyze the role of wealth as a further source of intra-family transfers. In fact, median net wealth in the crisis countries is much higher than in many other euro area countries (see ECB, 2013). In our model with family ties, the effect of wealth on mixed families' support for reform is ambiguous. On the one hand, wealth provides some insurance against the hardship of job loss. On the other hand, however, wealthy mixed families are less in need of generating additional income from a second job and are thus more reluctant to support reform. The effect leading to reform fatigue dominates at high levels of wealth.

This paper is mainly related to work on the political economy of reform and to the recently emerging literature on the economic effects of family ties.[4] Alesina and Drazen (1991) and Fernandez and Rodrik (1991) explain delays in and non-adoption of beneficial reforms as the consequence of distributional conflict between competing interest groups.[5] The growing interest in the economics of family ties mainly stems from the seminal contributions of Alesina and Giu-

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[4]See Sturzenegger and Tommasi (1998) for an essay collection of the most relevant papers on the political economy of reform and Rodrik (1996) for a review of the literature. Alesina and Giuliano (2014) survey the newly emerging work on the economic impacts of family ties.

[5]Also see Drazen and Easterly (2001) and Alesina et al. (2006) for very rare empirical papers in the field.

liano (2010, 2011, 2014) who empirically investigate the impact of family ties on economic outcomes. Related to our paper, Alesina et al. (2014) explore the link between family ties and labor market institutions. They argue that agents in societies with strong family ties are less mobile and therefore choose more regulated labor markets to avoid exploitation by monopsonic firms. Daniele and Geys (2014) question whether family ties generally have a negative effect on economic outcomes and show that this relation only holds for advanced economies. Reher (1998) emphasizes the divide between central/northern Europe and the Mediterranean region regarding the intensity of family ties. Bentolila and Ichino (2008) build on this finding to show that intra-family transfers work as unemployment insurance in southern Europe whereas northern European countries rely on state provided insurance systems. In addition to the recently emerging literature on the economic role of family ties, we also build on the classical work on the economic impact of intergenerational altruism by Barro (1974) and Becker (1974). While our paper is mainly a contribution to the political economy of reform, it is also related to labor economics as it builds on insider-outsider theory (Lindbeck and Snower, 1984, 1986, 2002). Bentolila et al. (2012) provide a detailed analysis of labor market dualism in Spain which is the real-world labor market that motivates our model. Grüner (2013) analyzes the sustainability of structural reforms in Spain and Italy within a political economy framework and highlights the politically pivotal role of insider employees. Finally, our paper is related to the literature that tries to explain cross-country differences in employment protection. Saint-Paul (2002) and Brügemann (2012) analyze models in which employment protection creates its own support. These models give rise to multiple equilibria and can thus rationalize the cross country differences in labor market policies.

The paper is organized as follows. Section 2 provides the empirical observations that motivate our work. The model setup is developed in Section 3. We then derive the effect of altruism on reform support in Section 4 and analyze the impact of wealth in Section 5. In Section 6, we discuss policy implications derived from the analysis. Section 7 concludes. Appendix A provides a detailed sensitivity analysis and discussion of assumptions, while Appendix B and Appendix C report details about mathematical derivations and data sources, respectively.

2 Motivating evidence

This section presents the empirical evidence that motivates our paper. We first describe the employment situation in the crisis countries since 2008 and then present data showing that efforts to reform have been weak. Finally, we provide evidence from the World Values Survey confirming that family ties in the affected countries are strong.

The severe impact of the economic downturn since 2008 is most evident in labor market data, especially for the age cohort 15–24. As shown in Figure 1, youth unemployment has increased dramatically reaching rates close to 40 percent in Italy and Portugal and a staggering 56 percent in Spain.[6]
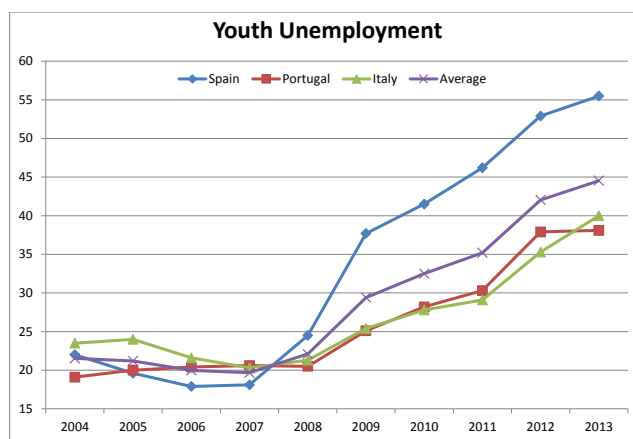

Figure 1: Youth unemployment in crisis countries 2004–2013

According to the crisis hypothesis, these dramatic figures should trigger comprehensive policy changes. However, reform efforts have been limited. This lack of reform is illustrated in Figure 2 which plots the Heritage Foundation's Index of Labor Freedom for the crisis countries over the last ten years. The index is mainly based on World Bank data and measures labor market flexibility by considering various aspects of a country's legal and regulatory framework. It is measured on a scale between 0 and 100 where higher values indicate more

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[6]The overall unemployment rates are critical, too. The figures for 2013 are 12.2 percent, 16.5 percent, and 26.1 percent in Italy, Portugal, and Spain, respectively. Data are taken from Eurostat: http://ec.europa.eu/eurostat; accessed on 5 July 2014.

flexibility (for a detailed description of the index see Appendix C). Contrary to the prediction of the crisis hypothesis, values for Portugal and Italy have decreased, implying stronger regulation of labor markets. The Spanish index value has slightly increased during the crisis, but Spain's relative position within the comprehensive set of countries captured by the index has decreased from rank 115 in 2007 to 129 in 2013. Moreover, in a recent detailed evaluation of Spanish labor market policy during the crisis, Bentolila et al. (2012) argue that 'the extraordinary rise in unemployment in Spain since 2007 was insufficient to trigger labor market reform.' Overall, the sharp increase in youth unemployment in the crisis countries has not led to significant labor market reforms.
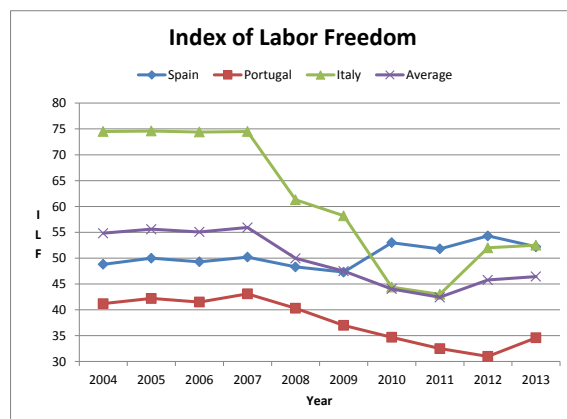

Figure 2: Index of Labor Freedom 2004–2013

Why does this extremely high youth unemployment not induce more pressure to reform? Do these countries have a common characteristic which makes the crisis hypothesis fail? Interestingly, one cultural attribute shared by southern European countries is strong family ties. The important role of the family in these countries has long been highlighted in the sociological literature (see Reher, 1998). Alesina and Giuliano (2011) develop a quantitative measure of family ties based on data from the World Values Survey. The crisis countries are all characterized by strong family ties, especially compared to northern European countries. On a scale between −1 and 1 the values for Italy, Spain, and Portugal are 0.2, 0.1, and -0.25 respectively, whereas those for Germany, the Netherlands, and Denmark are -0.7, -0.8, and -0.9, respectively (see Appendix C for a detailed

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description of the World Values Survey and the composition of the index).

Recent work suggests that family ties indeed have an impact on politico-economic outcomes, for instance on political participation and economic growth (Alesina and Giuliano, 2011, 2014). Moreover, and closely related to our work, Bentolila and Ichino (2008) show that financial transfers within families are more frequent in countries with strong family ties, especially when a household is hit by unemployment. Hence, the role of the family as a mechanism for insuring against unemployment appears to be particularly important in southern European countries. Moreover, higher indirect transfers are also a result of family ties. A recent survey by the 'European Foundation for the Improvement of Living and Working Conditions' (Eurofound, 2014) shows that, as a response to the poor employment situation, in 2011 more young people lived with their parents than did in 2007, with a more pronounced increase of co-residence in countries with strong family ties.

This evidence suggests that strong family ties provide a significant source of insurance against unemployment. In the next section, we set up a simple political economy model that investigates how this insurance aspect of family ties affects public support for deregulatory labor market reforms in times of economic crisis.

3 The model

The economy is populated by a unit measure of agents who differ in their state of employment: they are either insiders (i) or outsiders (o). Agents form families. A family is composed of two agents who are linked via altruism. Hence, an agent can be represented by a pair $(j, \tilde{j})$ where $j \in \{i, o\}$ refers to the agent's state of employment and $\tilde{j} \in \{i, o\}$ to that of the other family member. This yields three family types: insider families, outsider families, and mixed families. We denote the fraction of insiders in the population by η and assume that the employment states of two members of the same family are independent. We discuss this assumption in Appendix A.

3.1 Preferences

The preferences of agent $(j, \tilde{j})$ are represented by the following utility function:

$$U(c_{j,\tilde{j}}, c_{\tilde{j},j}) = u(c_{j,\tilde{j}}) + \alpha u(c_{\tilde{j},j}),$$

where $c_{j,\tilde{j}}$ represents consumption of agent $(j, \tilde{j})$, and $c_{\tilde{j},j}$ denotes the family member's consumption. Parameter α measures an agent's altruistic link to his or her family member, where $0 \leq \alpha \leq 1$. Moreover, $u(c_{j,\tilde{j}})$ is of the constant relative risk aversion (CRRA) type with risk-aversion parameter γ:

$$u(c_{j,\tilde{j}}) = \frac{c_{j,\tilde{j}}^{1-\gamma}}{1-\gamma} - 1_{\{j=i\}}d,$$

where we assume that being an insider is associated with effort that causes disutility d. As we normalize the disutility of being an outsider to zero, the parameter d effectively reflects the difference in effort between insiders and outsiders. For the main part of our analysis we do not need to assume a lower bound on d.[7] In contrast, note that we have to impose an upper bound $\overline{d}$ on d to ensure that agents always prefer to be insiders rather than outsiders.

Each agent's budget constraint comprises the following elements. Insiders earn e_i, which is normalized to one: $e_i = 1$. Outsiders receive e_o satisfying $0 < e_o < e_i$. Besides income, agents can also finance consumption through wealth w. To simplify the analysis, we assume that there is no heterogeneity among agents with respect to wealth. Agents can transfer resources to their family member where $t_{j,\tilde{j}}$ represents the net transfer agent j receives from his or her family member. These three income sources are disposable to the agents, so the budget constraint of agent $(j, \tilde{j})$ reads

$$e_j + w + t_{j,\tilde{j}} = c_{j,\tilde{j}}.$$

We therefore have to set the above mentioned upper bound $\overline{d} = u(e_i+w)-u(e_o+w)$ to ensure that, in the absence of altruism ($\alpha = 0$), agents always prefer to be insiders rather than outsiders, which requires $u(e_i + w) - d > u(e_o + w)$.

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[7]We therefore do not have to rule out $d < 0$ which might reflect that being an outsider is associated with disutility arising, for example, from social exclusion. Moreover, there might also be outsiders who have full-time jobs but earn lower wages than (comparable) insiders. However, the group of outsiders also comprises the unemployed and underemployed, which speaks in favor of assuming $d > 0$, as we do in Section 5.

3.2 The labor market and reform

The effects of deregulating labor market reforms have been extensively studied in the literature (see, among others, Blanchard and Giavazzi, 2003, Saint-Paul, 2004, and Bentolila et al., 2012). A prime example of such a reform is a reduction of employment protection, for instance, a lowering of firing costs. Saint-Paul (1993, 1995) argues that such a reform increases employment via two channels. First, the reduction of employment protection lowers the expected costs of future firings. Second, lower firing costs reduce the insiders' bargaining power and thus impose downward pressure on their wages. Both effects incentivize firms to create more jobs. As a consequence, the increased efficiency in the labor market goes along with greater risk of job loss and lower wages for the established insiders. This nexus leads to a conflict between insiders and outsiders over reform: improved access to the labor market for outsiders comes at the price of reduced wages and lower job security for insiders. This conflict can lead to political blockage of a welfare-improving reform.

To focus on the interaction of altruism and voting behavior, we do not model the labor market explicitly but rather build on these results and take the effects of labor market reform as given. We denote the share of insiders before voting on reform by the parameter η and the change in the insider share following reform by $\Delta\eta$. The change of insider wages through reform is given by Δe_i, where $e_o - e_i \leq \Delta e_i \leq 0$ to ensure that insider wages are never below outsider wages. Labor market flexibility is represented by the parameter f and the effect of reform on flexibility by Δf. More precisely, parameter f, where $0 \leq f \leq 1$, captures the likelihood of job turnover in the absence of reform. At the extremes, agents either remain in their state of employment for sure in case of a completely rigid labor market ($f = 0$). Or, for $f = 1$, the probability of becoming an insider in the next period is independent of an agent's employment status ex ante. In general terms, the probability of remaining an insider if reform is not implemented is $p_i^n = 1 - f(1 - \eta)$.[8]

Second, the change of labor market flexibility through reform is captured by the parameter Δf, where $0 \leq \Delta f \leq 1 - f$. If $\Delta f = 0$, reform has no impact on

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[8]As a consequence, the probability for an outsider to become an insider in the absence of reform is now given by $p_o^n = f\eta$ — as the two probabilities have to satisfy $\eta p_i^n + p_o^n(1 - \eta) = \eta$.

labor turnover. Conversely, $\Delta f = 1 - f$ implies that all agents have the same probability of becoming an insider ex post irrespective of their employment status ex ante. Hence, if reform is implemented, the probability of remaining an insider is $p_i^r = 1 - (f + \Delta f)(1 - (\eta + \Delta \eta)).$[9]

Formally, the implementation of reform has the following effects. First, the labor market becomes more flexible ($\Delta f \geq 0$), insider wages decrease ($\Delta e_i \leq 0$) and the insider share in the economy increases ($\Delta \eta \geq 0$). The share of insiders after reform hence becomes $\eta + \Delta \eta$.

The reduction of insider wages and a higher risk of job loss are the sources of the insiders' opposition to reform. In the following, we only focus on the effect of increased job insecurity ($\Delta f > 0$) and assume that wages remain unaffected ($\Delta e_i = 0$). Since both effects work in the same direction, this assumption simplifies the analysis but does not affect the qualitative results. Yet, it might also be argued that insiders can avoid a higher risk of being fired by simply accepting lower wages. We show in Appendix A.1 that, also in this scenario ($\Delta f = 0$ and $\Delta e_i < 0$), the qualitative results hold. As expected, allowing for both a reduction of insider wages and increased labor turnover makes the mechanism we derive even stronger.

To focus on the role of family ties, we make two further strong assumptions. First, we set $f = 0$, that is agents remain in their state of employment for sure in the absence of reform. Second, we assume $\Delta f = 1$, implying that all agents have the same probability p of becoming an insider after reform irrespective of their state of employment ex ante. Thus, $p = p_i^r = p_o^r$ and this probability is equal to the share of insiders after reform: $p = \eta + \Delta \eta$. In Appendix A.2-A.4, we show in a comprehensive sensitivity analysis that relaxing these strong assumptions made on labor market characteristics does not change our results qualitatively.

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[9]The probability of an outsider to become an insider is given by $p_o^r = (f(1 - \eta - \Delta \eta) + \Delta \eta)/(1 - \eta)$.

3.3 Voting on reform

Agents are in favor of reform whenever the expected utility of reform exceeds the utility in the absence of reform:

$$U^r_{(j,\tilde{j})} = (1-p)^2(1+\alpha)u(c_{o,o}) + (1-p)p(u(c_{o,i}) + \alpha(u(c_{i,o}) - d))$$
$$+ p(1-p)(u(c_{i,o}) - d + \alpha u(c_{o,i})) + p^2(1+\alpha)(u(c_{i,i}) - d)$$

$$\geq \tag{3.1}$$

$$U^n_{(j,\tilde{j})} = u(c_{j,\tilde{j}}) - 1_{\{j=i\}}d + \alpha(u(c_{\tilde{j},j}) - 1_{\{\tilde{j}=i\}}d).$$

where U^r represents the expected utility from reform and U^n denotes the utility in case of no reform. The decision whether reform is implemented or rejected depends on the political process. We apply majority vote: reform is implemented if and only if

$$\sum_{j \in \{i,o\}} \sum_{\tilde{j} \in \{i,o\}} 1\{U^r_{(j,\tilde{j})} \geq U^n_{(j,\tilde{j})}\}\mu(j,\tilde{j}) \geq 0.5,$$

where $\mu(j,\tilde{j})$ represents the share of agents with characteristics $(j,\tilde{j})$. The description of the voting scheme completes the model's politico-economic environment. Table 3.1 summarizes all parameters of the model.

4 Family ties and economic reform

We now turn to the analysis of the model. In order to carve out the interaction between altruism, state of employment, and voting behavior as clearly as possible, we first consider risk neutral agents ($\gamma = 0$). Risk neutrality rules out the effects of wealth so we can set $w = 0$.

We begin the analysis by looking at the two extreme values of the altruism parameter: on the one hand, a complete absence of altruism ($\alpha = 0$), which we call the 'individualistic case', on the other hand the 'completely altruistic case' ($\alpha = 1$). Then, we explore voting behavior under 'incomplete altruism' ($0 < \alpha < 1$).

Description	Parameter	Range
Altruism	α	$[0,1]$
Risk aversion	γ	$[0,\infty)$
Insider share ex ante	η	$[0,1]$
Change of insider share	$\Delta\eta$	$[0, 1-\eta]$
Disutility of an insider job	d	$(-\infty, \overline{d})$
Insider income ex ante	e_i	1 (normalized)
Change of insider income	Δe_i	$[e_o - e_i, 0]$
Outsider income	e_o	$(0,1)$
Labor market flexibility ex ante	f	$[0,1]$
Change of labor market flexibility	Δf	$[0, 1-f]$
Wealth	w	$[0,\infty)$

Table 3.1: Overview of the model's parameters

4.1 Individualistic case: $\alpha = 0$

First, note that the individualistic scenario of course implies that there are no transfers between family members, $t_{j,\tilde{j}} = 0$. Therefore, agents are exclusively concerned with their expected state of employment when it comes to the decision whether to vote in favor of or against reform. The outsider votes in favor of reform if and only if

$$U_o^r = p(u(e_i) - d) + (1-p)u(e_o) \geq u(e_o) = U_o^n.$$

From the assumption that $d < \overline{d} = u(e_i) - u(e_o)$ it follows directly that $U_o^r > U_o^n$. Hence, an outsider always prefers reform. Conversely, an insider is always in favor of the status quo:

$$U_i^n = u(e_i) - d > p(u(e_i) - d) + (1-p)u(e_o) = U_i^r.$$

Thus, all outsiders vote in favor of reform and all insiders vote against reform. Since we assume majority vote, the implementation of reform only depends on whether the median voter is an insider or an outsider. This yields the following result.

Lemma 1 *Suppose $\alpha = 0$. Then reform is implemented if and only if there are more outsiders than insiders (i.e. iff $\eta < 0.5$).*

This simple finding is in line with the rationale of the crisis hypothesis: reform will only be implemented if a sufficiently large share of the population suffers from the institutional rigidities of the labor market.

We now turn to the question of how voting behavior changes in the presence of altruism. To make the argument as clear as possible, we first analyze the case of complete altruism ($\alpha = 1$).

4.2 Completely altruistic case: $\alpha = 1$

In the case of complete altruism, the individual optimization problem becomes a 'family problem' since each agent weighs the well-being of both family members equally. Therefore, the altruistic family 'speaks with one voice' – that is to say, there is never disagreement and both members vote either in favor of or against reform. Importantly, as we will show, this is also true when family members are in different states of employment. This result contrasts with the individualistic case in which members of the same family cast opposing votes on reform if their job status differs.

We first analyze the voting decision of families in which both members are in the same state of employment. Since members of these families are identical, their decision follows the same reasoning as that of their individualistic counterparts.

Lemma 2 *Families in which both members are outsiders (insiders) vote in favor of (against) reform.*

We can now derive the levels of the insider share η at which these families are median voters. Recall that the employment states of two members of the same family are assumed to be independent. Therefore, the share of insider families among all families is η^2. Consequently, if $\eta^2 > 1/2$, i.e. $\eta > 1/\sqrt{2}$, the median voter is the insider family, and reform is thus blocked. Symmetrically, if $\eta < 1 - 1/\sqrt{2}$ the median voter is the outsider family and reform is implemented. These results imply that at the extremes of the employment spectrum the majority vote in the completely altruistic case is similar to the individualistic case.

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The interesting interval is the one between these regions. In this interval the median voter is the mixed family which votes in favor of reform if and only if

$$(1-p)^2 2u(e_o) + 2p(1-p)[2u(\tfrac{e_i+e_o}{2}) - d] + p^2 2[u(e_i) - d]$$

$$\geq \qquad\qquad\qquad (4.1)$$

$$[2u(\tfrac{e_i+e_o}{2}) - d].$$

In the risk neutral case this is just

$$(1-p)^2 2e_o + 2p(1-p)(e_i + e_o - d) + p^2 2(e_i - d)$$
$$\geq$$
$$e_i + e_o - d,$$

which simplifies to

$$(2p - 1)(e_i - e_o - d) \geq 0.$$

Since $d < \bar{d} = e_i - e_o$ under risk neutrality, we have $e_i - e_o - d > 0$. Therefore, the above equation is equivalent to $p \geq 1/2$. The voting decision of the mixed family hence depends on p. It votes in favor of reform only if the probability of being an insider after reform is higher than fifty percent.

Lemma 3 *If $\alpha = 1$, the mixed family votes in favor of reform if and only if $p \geq 1/2$.*

In contrast to the individualistic case, it is possible that the outsider member of the mixed family votes against reform. Only if $p = \eta + \Delta\eta \geq 1/2$ the mixed family is willing to jeopardize the secure job of the insider family member. Otherwise the mixed family prefers to maintain the status quo. From Lemma 2 and Lemma 3, Proposition 1 directly follows.

Proposition 1 *If $\alpha = 1$, reform is implemented if and only if $\eta \in [0, 1-1/\sqrt{2}] \cup [1/2 - \Delta\eta, 1/\sqrt{2}]$.*
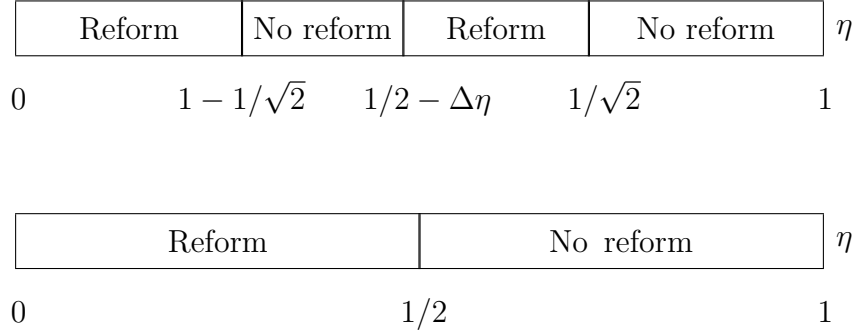
Reform	No reform	Reform	No reform	η

0      $1 - 1/\sqrt{2}$ $1/2 - \Delta\eta$ $1/\sqrt{2}$ 1

Reform	No reform	η

0          $1/2$ 1

Figure 3: Reform decision as a function of the insider share η – Comparison of the individualistic case (lower graph) and the completely altruistic case (upper graph)

Figure 3 graphically compares the results of the individualistic and the completely altruistic cases. The main conclusion is that altruistic links can have a significant impact on voting behavior. On the one hand, a relatively bad employment situation does not induce, but rather prevents reform (for $\eta \in [1 - 1/\sqrt{2}, 1/2 - \Delta\eta]$). Note that within this range there is always reform in the individualistic case. On the other hand, a majority of the population is in favor of reform when the employment situation is relatively good (for $\eta \in [1/2 - \Delta\eta, 1/\sqrt{2}]$). This contrasts with the individualistic case in which reform is blocked if $\eta \in [1/2, 1/\sqrt{2}]$.

We have derived the finding reported in Proposition 1 and Figure 3 within a very stylized model to make the basic mechanism reversing the crisis hypothesis as clear as possible. In the following, we show that our result still holds if some strong assumptions are relaxed. Section 4.3 considers the case of incomplete altruism ($0 < \alpha < 1$). In Section 5 we show that in the presence of risk aversion and wealth our results become even stronger. Finally, Appendix A demonstrates that relaxing the extreme assumptions made about the labor market and the considered reform does not qualitatively change our results.

4.3 Incomplete altruism: $0 < \alpha < 1$

So far, we have looked only at the two extreme cases of the altruism parameter α. The median voter's choice strongly differs between the two cases. Naturally, the question arises as to how this choice changes as we move from one extreme to the other.[10] Appendix B derives the answer to this question analytically. Figure 4 graphically illustrate the results for $\Delta\eta = 0.04$. In the red/dark regions reform
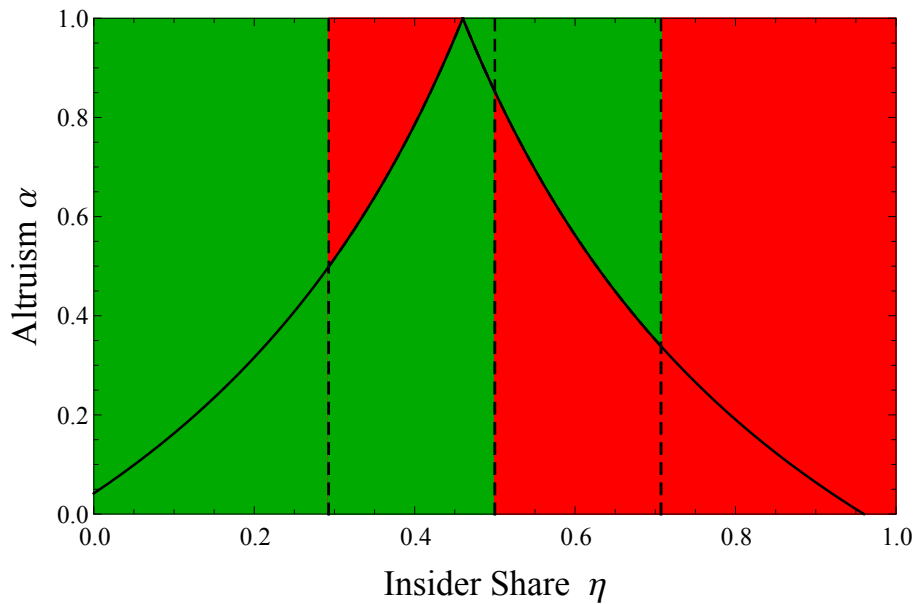

Figure 4: Majority vote as a function of altruism and insider share for $\Delta\eta = 0.04$

is rejected, while it is accepted in the green/light regions. Dashed lines indicate a change in the family types that are the median voters: from left to right the median voters are first the outsider families (o,o), then outsiders within mixed families(o,i), then insiders in such families (i,o), and finally insider families (i,i). Solid lines indicate the indifference lines of (o,i) and (i,o) members of mixed families. Going from the bottom to the top of Figure 4, we can see how the

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[10]Another alternative to relax our assumption is to consider one-sided altruism only. Suppose insider parents are altruistic towards their outsider children, but not vice versa. In this situation the mechanism we describe is weakened as the children are not interested in their parents' consumption anymore, but still present, because children still receive transfers from their parents.

reform decision changes as the altruism parameter increases from zero to one. For low values of altruism, the decision is exactly as in the individualistic case. However, at a certain level of altruism ($\alpha \approx 0.34$) the insiders within mixed families start to favor reform if the chance for their family member to become an insider after reform is relatively high ($\eta \approx 0.71$). Similarly, there is a point ($\alpha \approx 0.55$) at which the outsiders of mixed families start to oppose reform if the economic situation is relatively poor ($\eta \approx 0.29$). In this case the small chance for the outsiders to obtain an insider job is not worth jeopardizing the insider job of their family members. Both these regions become bigger as altruistic links become stronger, until we reach the case of full altruism.

The upshot of this sensitivity analysis is as follows. First, moderately reducing the altruism parameter below one does not alter the qualitative findings: the crisis hypothesis still fails. Secondly, however, with low but positive levels of altruism, the majority vote does not differ at all from the individualistic case. Combined, these two findings suggest that two countries, even if they do not strongly differ with respect to the intensity of family ties, might qualitatively differ in their aptitude to embrace reform.

5 The role of wealth

In this section we analyze how wealth as an additional source of intra-family transfers affects support for reform. This aspect is relevant for the crisis countries since these have a relatively high level of median net wealth. The ECB's (2013) Eurosystem Household Finance and Consumption Survey reports median net household wealth in Italy, Portugal, and Spain of €173.5k, €75.2k, and €182.7k respectively, compared to €85.8k, €51.4k, and €103.6k respectively in Finland, Germany, and the Netherlands.[11]

Therefore, we now allow for risk-averse agents ($\gamma > 0$) to study wealth effects. Additionally, we set $\alpha = 1$ to explore the relation between altruism and risk aversion as clearly as possible and to keep the analysis simple.

How does risk aversion affect the voting decisions of agents within the pivotal mixed family? To answer this question, we have to consider Equation 1, and

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[11]Controlling for household size reduces the difference between southern and northern European countries, yet only marginally (see ECB, 2013).

solve for the probability p^* at which the mixed family is indifferent between voting in favor of or against reform. This probability is identical to the share of insiders after reform and since it marks the point where the mixed families' vote and thus the majority vote changes we call p^* the reform threshold. If risk aversion is a small natural number, we can obtain an analytical solution for p^* (see Appendix B). Table 5.1 summarizes how the reform threshold p^* changes as a reaction to an increase in risk aversion when we abstract from wealth ($w = 0$) and disutility of being an insider ($d = 0$).

Risk aversion γ	Reform threshold $p^* = \eta + \Delta\eta$
0	50.0
1	54.3
2	58.6
3	62.8
4	67.0
5	70.9

Table 5.1: Degree of risk aversion and reform threshold

Higher risk aversion leads to an increase of the threshold p^* which implies a reduced support for reform. The more risk averse agents are, the better must be the post-reform job perspectives to make the mixed family jeopardize the insider member's income. This result is intuitive as we would expect risk averse agents to oppose reform more strongly than risk neutral ones.

We now turn to the role of wealth. Under risk neutrality, wealth w and the disutility parameter d have no effect. In the following, we set $\gamma = 2$ and show that this is not the case under risk aversion.

Increasing the disutility d associated with insider employment trivially makes being an insider less attractive while the utility of being an outsider remains the same. The crucial question is how the (completely altruistic) mixed family's vote on reform is affected. Assuming that endowments e_i and e_o remain unchanged by reform, the utility loss can only be compensated via an increase in the reform threshold p^*. Therefore, the reform threshold p^* is a monotonically increasing function of the disutility of insider employment. Next, we analyze how support
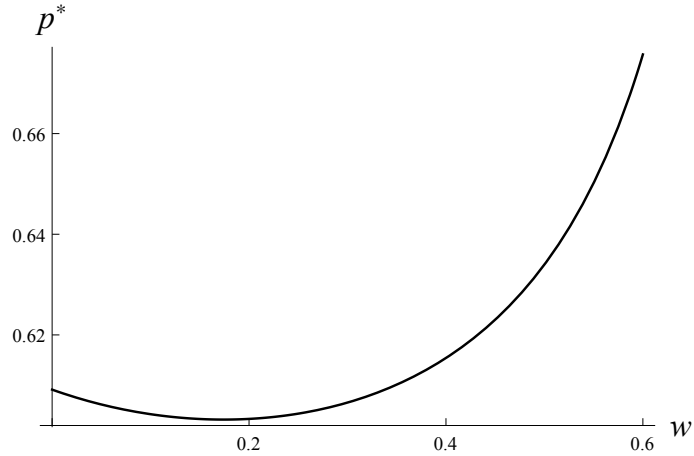
Figure 5: Reform threshold as a function of wealth w

for reform is affected if we consider both disutility $d > 0$ and wealth $w > 0$.

The effect of wealth is ambiguous. On the one hand, wealth provides insurance against the worst case outcome of reform, namely that both family members become outsiders. Even in such a case, a wealthy family can maintain a decent level of consumption. Ceteris paribus, this insurance effect decreases the reform threshold p^*. On the other hand, wealth decreases the marginal utility of consumption and thus changes the trade-off between a higher income from insider jobs and the associated higher disutility of work. While we only consider parameter choices where agents prefer to be insiders rather than outsiders, the utility margin by which they prefer to be insiders decreases with their wealth. This effect puts upward pressure on the reform threshold when wealth increases. In Figure 5, we plot the overall effect of wealth on the reform threshold for $d = 0.2$ and $e_o = 0.5$.

The first effect initially shifts the reform threshold of the mixed family slightly to down indicating an increasing support for reform. Once the second effect dominates, the reform threshold is shifted up illustrating a reduced willingness of the mixed family to support reform.

In conclusion, we find that high levels of wealth can reinforce the core mechanism of our paper: if outsider members of a mixed family can increase their consumption not only due to transfers from the wage income of insider family members but also from dissaving family assets, then the parameter region in

which reform is blocked becomes even bigger. In light of this theoretical finding one might conjecture that the high median household wealth in the crisis countries has contributed to the observed reform fatigue.

6 Policy implications

The main conclusion from Section 4 is that, in the presence of intra-family altruism, crisis does not facilitate, but hinder economic reform — a reversal of the crisis hypothesis. This finding yields an interesting policy implication regarding the effect of austerity in countries with strong family ties. According to the crisis hypothesis, austerity measures that aggravate an economic downturn could have a positive employment effect via the indirect channel of easing structural reforms. Along these lines, Drazen and Grilli (1993) argue that 'crises may raise welfare if they are the only way to induce necessary policy changes.' In contrast, our model shows that the consequences of austerity can be quite different when family ties are taken into account. In the presence of intra-family altruism an economic slump does not lead to employment-promoting reforms, but rather causes reform blockage and redistribution of resources from insider family members to outsider members. As can be seen in Figure 3, a crisis reduces the willingness to reform in a range of the insider share where the individualistic case predicts reform, whereas stimulating the economy can encourage reform where the benchmark predicts blockage. Thus, the logic of the crisis hypothesis is reversed.[12] Our finding implies that countries with different degrees of family ties might require diverging policy prescriptions to successfully induce economic reforms.

The core result of Section 5 is that wealth matters for the mixed family's voting decision on reform. As wealth increases, becoming an insider is less attractive since the utility gain of consuming the additional income is decreasing, while the utility loss of having less leisure remains the same. Hence, a high level of wealth can lead to reform fatigue. Once a certain wealth level is attained, reform becomes increasingly difficult, an aspect that might be relevant for the crisis countries where median net wealth is high (see, for instance, ECB, 2013).

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[12]Note that it still applies for a very small insider share (when $\eta < 1 - 1/\sqrt{2}$, which is the region in which the outsider family is the median voter), but the extent of a crisis necessary to reach that level is much larger in the altruistic case than in the individualistic one.

7 Conclusion and discussion

This paper analyzes how family ties affect support for economic reform in times of crisis. We make a theoretical contribution to the literature on the political economy of reform by casting doubt on the crisis hypothesis, which states an inverse relation between the state of an economy and support for reform. Taking intra-family altruism into account can reduce support for reform in an economic crisis. Furthermore, our theoretical findings hint at a potentially important policy implication: austerity measures might block rather than foster economic reforms if applied to countries where family ties are strong. Our model provides an explanation for the limited reform progress in several southern European countries during and following the Great Recession.

Although we focus on labor market reform, the underlying mechanism of our model might also be relevant for other policy fields. For instance, the reform of a pay-as-you-go social security system that aims to ease the financial burden on the young might be opposed by the latter if they receive transfers from their parents. Tabellini (2000) and Hansson and Stuart (1989) have considered a similar idea by arguing that intergenerational altruism leads to a willingness of the young to pay for the old. Our mechanism gives this story a new twist as the young prefer maintaining the system because they expect transfers from the old. Another example is public sector reform. Many societies maintain inefficiently large and costly public sectors which is quite puzzling from a theoretical point of view (see the discussion in Acemoglu et al., 2011). According to our argument, this inefficiency can be sustained more easily if many voters are altruistically linked to state employees. Voters who would demand a reform that reduces an inflated public bureaucracy in the absence of altruism might oppose it if they can expect transfers from public sector employees.

In this paper, we have chosen a static approach to present the mechanism relating family ties and reform support as clearly as possible. However, considering a dynamic context would allow to address further important aspects like intergenerational conflicts, long-run effects and sustainability of reform.

This work is a first step toward understanding how family ties affect a country's support for reform. Further work — both theoretical and empirical — is needed to develop a more detailed understanding of this relation.

Appendix

A Labor market and support for reform

The model setup in Section 4 is highly stylized for illustration purposes. In this Appendix we relax some of the assumptions previously made regarding the labor market setup, namely $\Delta e_i = 0$, $f = 0$, and $\Delta f = 1$. We show that the model's results remain qualitatively unaffected when these values are changed. To keep the analysis tractable, we continue to assume complete altruism and risk neutrality throughout this section. From the above analysis, we know that the first assumption ($\alpha = 1$) strengthens the results while the second one ($\gamma = 0$) weakens them.

The mixed family now votes in favor of reform if and only if

$$(1 - p_i^r)(1 - p_o^r)2u(e_o) + (p_i^r(1 - p_o^r) + (1 - p_i^r)p_o^r)(2u(\tfrac{e_i + e_o}{2}) - d) + p_i^r p_o^r 2(u(e_i) - d)$$

$$\geq \tag{A.1}$$

$$(1 - p_i^n)(1 - p_o^n)2u(e_o) + (p_i^n(1 - p_o^n) + (1 - p_i^n)p_o^r)(2u(\tfrac{e_i + e_o}{2}) - d) + p_i^n p_o^n 2(u(e_i) - d).$$

In the following Subsections A.1-A.3 we illustrate how our results change when we vary each of the three parameters Δe_i, f, and Δf separately, while keeping the other two parameters at their previous values and also maintaining our assumptions on the remaining parameters: $\Delta \eta = 0.04$, $e_o = 1/2$, and $d = 0.2$. In A.4 we consider scenarios in which we jointly vary Δe_i, f, Δf, and $\Delta \eta$. Finally, in A.5 and A.6 we verbally discuss two further assumptions made in Sections 4 and 5, namely that $\Delta \eta$ does not depend on η and that the job market states of two family members are independent of each other.

A.1 Impact of reform on insider income

As discussed in Section 3, labor market deregulation tends to reduce job security as well as wages of insiders. In the main part of the paper we only consider the former consequence. We now analyze the opposite case where reform does not change job security but reduces insider wages — since it might be argued that insiders can avoid job loss by simply accepting lower wages. Table A.1 displays

f	Δf	Δe_i	$\Delta\eta$	**Reform threshold**
0	0	-2	2	(72.0)
0	0	-2	4	44.0
0	0	-4	2	(87.0)
0	0	-4	4	(74.0)
25	0	-2	2	(79.1)
25	0	-2	4	34.8
25	0	-4	2	(91.5)
25	0	-4	4	(81.0)

Table A.1: Reform threshold when reform reduces insider wages (all numbers in percent)
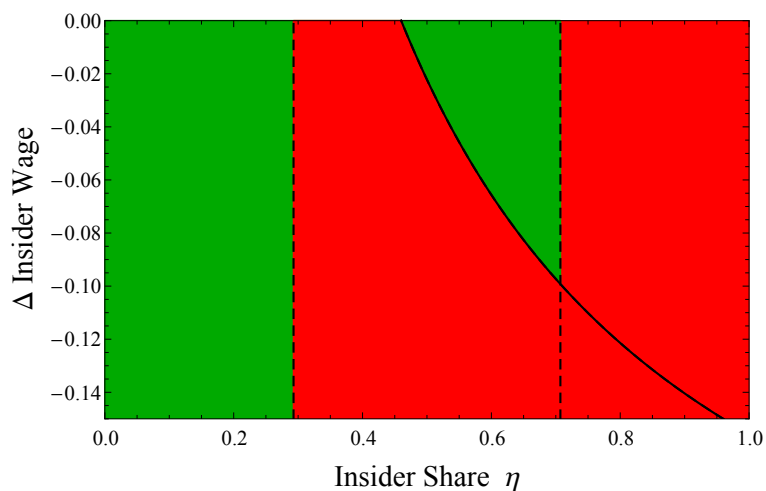

Figure 6: Reform support as a function of a reduction of the insiders' wage with given job insecurity

values of the reform threshold for different combinations of the parameters Δe_i, f, and $\Delta\eta$, while we set $\Delta f = 0$, $e_o = 0.5$, and $d = 0.2$. The results show that the reversal of the crisis hypothesis holds for all these combinations: The region in which the mixed family rejects reform does not disappear irrespective of the chosen parameter combinations. There are many cases, however, in which the mixed family never supports reform (indicated by values in brackets).

Figure 6 considers the situation in which reform has an impact on wages as well
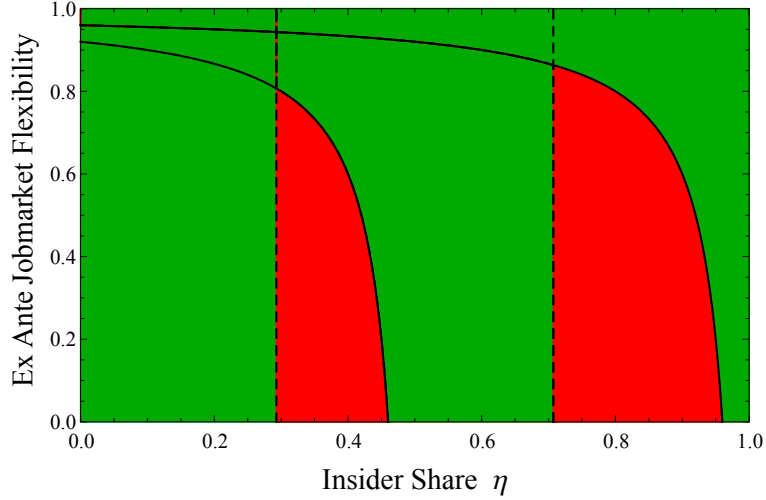
Figure 7: Reform support as a function of labor market flexibility ex ante

as job security of insiders. Starting from the benchmark case ($\Delta e_i = 0$, $f = 0$, $\Delta f = 1$, $\Delta \eta = 0.04$, $e_o = 0.5$, and $d = 0.2$) and gradually reducing insider wages makes insider jobs less and less attractive. Therefore, the mixed family's support for reform is decreasing. A very strong reduction of insider wages implies that mixed families oppose reform over the entire region in which they are the median voters. As expected, allowing for both a reduction of insider wages and increased labor turnover makes the mechanism we derive even stronger.

A.2 Labor market flexibility ex ante

The results in Section 4 are derived for $f = 0$ which means that all agents maintain their state of employment if reform is not implemented. Figure 7 illustrates how support for reform changes if we allow for labor market flexibility in the absence of reform. When raising f we keep the assumption of extreme flexibility after reform, so $f + \Delta f = 1$.

The mixed family's objection to reform decreases with increasing ex ante labor market flexibility. The intuition for this result is straightforward: the reason why agents vote against reform is the associated risk of job loss. If this risk is high even in the absence of reform, refusal against reform decreases as the efficiency gain associated with reform relatively outweighs the cost. Also note that in the (unrealistic) scenario of an extremely high insider share η even the insider
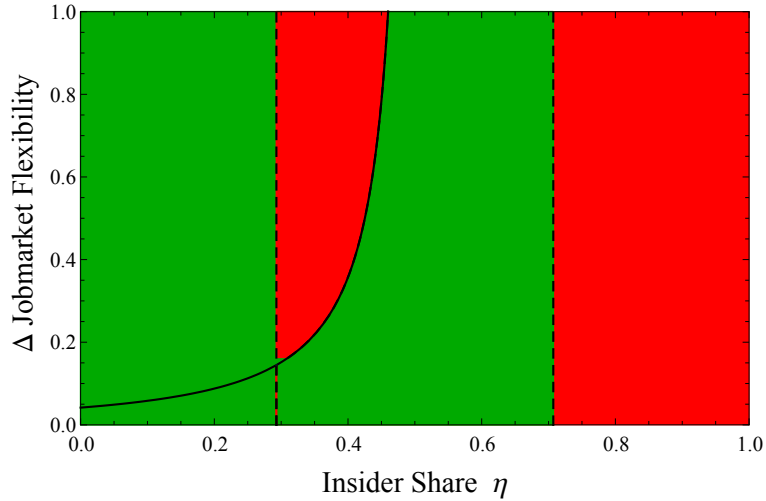
Figure 8: Reform support as a function of the change in labor market flexibility through reform

family is in favor of reform because reform would even increase the likelihood of preserving the insider status.

A.3 Change in labor market flexibility

In Section 4, we assume that the probability of becoming an insider after reform is independent of the state of employment ex ante (that is, $f + \Delta f = 1$). This 'perfect job mobility' is a very strong assumption as we would expect those who were insiders prior to reform to have a higher probability to remain insiders. Figure 8 shows that relaxing this assumption (while keeping $f = 0$) does not change the qualitative implications of the model. The mixed family's support for reform is stronger the lower is the impact of reform on labor market flexibility. Similar to the reasoning above, the weaker is the risk of job loss the more the efficiency gain dominates the voters' decision and therefore increases support for reform.

A.4 Reform threshold for various parameter values

Table A.2 displays values of the reform threshold for different combinations of the parameters f, Δf, Δe_i and $\Delta \eta$, while we keep $e_o = 0.5$ and $d = 0.2$.

f	Δf	Δe_i	$\Delta\eta$	**Reform threshold**
25	25	-2	2	56.2
25	25	-2	4	48.4
25	25	-4	2	(72.9)
25	25	-4	4	83.8
25	50	-2	2	53.2
25	50	-2	4	49.1
25	50	-4	2	62.0
25	50	-4	4	57.6
50	25	-2	2	57.0
50	25	-2	4	48.2
50	25	-4	2	(78.9)
50	25	-4	4	68.1
50	50	-2	2	53.4
50	50	-2	4	49.1
50	50	-4	2	62.5
50	50	-4	4	58.7

Table A.2: Labor market characteristics and reform threshold (all numbers in percent)

The results show that the reversal of the crisis hypothesis holds for all these combinations: The region in which the mixed family rejects reform does not disappear irrespective of the chosen parameter combinations. There are cases, however, in which the mixed family never supports reform (indicated by values in brackets).

Also note that a higher $\Delta\eta$ pushes the reform threshold considerably to the left. This is intuitive as a reform leading to more jobs is more attractive for voters.

A.5   Insider share and employment effect of reform

It might be considered unrealistic to assume that reform creates employment effects of a given size (in our illustration we always set $\Delta\eta = 0.04$). A more realistic assumption might be that, if the situation is worse, then rigidities must

be more severe and a reform should lead to larger gains in employment: $\frac{\partial \Delta \eta}{\partial \eta} < 0$. However, as long as $\frac{\partial \Delta \eta}{\partial \eta} > -1$, which is certainly the relevant case, this would not change the voting decision of the mixed family substantially. In fact, when we assume that the new $\Delta \eta$ satisfies $-1 < \frac{\partial \Delta \eta}{\partial \eta} < 0$ and that it is equal to the old $\Delta \eta$ at the point where mixed families are indifferent between reform and no reform, then voting does not change at all.

Furthermore, it might be argued that a more comprehensive reform (formally captured by a large Δf) will lead to more job creation ($\frac{\partial \Delta \eta}{\partial \Delta f} > 0$) and therefore makes reform more attractive. In Figure 8, this effect would be represented by a shift of the mixed family's indifference line to the left. The qualitative results, however, remain unaffected.

A.6   Correlation of employment states

Throughout the paper, we assume that the employment states of members of the same family are uncorrelated. This assumption may seem oversimplifying but we think that it is not essential for the analysis. On the one hand, consider the extreme of perfect positive correlation between the family members' employment states. In this case there would be no mixed families in the economy and altruism would obviously have no effect on voting. On the other hand, assuming perfect negative correlation implies that society is exclusively inhabited by mixed families who then trivially become the median voter for all values of η. Apparently, these two extremes seem to be irrelevant in reality. We think that in many societies, especially those in a crisis situation, the mixed family does indeed play an important role. In Spain, for instance, labor market dualism leads to a situation where many insider parents have outsider children (see Bentolila et al., 2012).

B   Mathematical details

B.1   Incomplete altruism

In this section, we derive the results regarding incomplete altruism that are illustrated in Figure 4. The location of the dashed lines indicating changes in

the median voter family types does not depend on altruism. The median voters are first (o,o), then (o,i), then (i,o), and finally (i,i). In contrast, it is non-trivial to derive the location of the solid lines that indicate the indifference lines of agents of types (o,i) and (i,o) – that is to say, outsider and insider members of mixed families. Agents of type (o,i) vote in favor of reform if and only if

$$(1-p)^2(1+\alpha)(e_o + w) + p(1-p)((e_o + w) + \alpha((1+w) - d))$$
$$+p(1-p)(\alpha(e_o + w) + (1+w) - d)) + p^2(1+\alpha)((1+w) - d)$$
$$\geq \alpha(e_o + w) + (1+w) - d,$$

which simplifies to $p + \alpha p > 1$. Thus, the indifference line of outsider members of mixed families, (o,i), is given by $p = 1/(1+\alpha)$, or equivalently $\eta = 1/(1+\alpha) - \Delta\eta$. Agents of type (i,o) vote in favor of reform if and only if

$$(1-p)^2(1+\alpha)(e_o + w) + p(1-p)(\alpha(e_o + w) + ((1+w) - d))$$
$$+p(1-p)((e_o + w) + \alpha((1+w) - d))) + p^2(1+\alpha)((1+w) - d)$$
$$\geq (e_o + w) + \alpha((1+w) - d),$$

which simplifies to $p + \alpha p > \alpha$. Thus, the indifference line of outsider members of mixed families, (o,i), is given by $\eta = \alpha/(1+\alpha) - \Delta\eta$.

B.2   Risk aversion

We now derive the results regarding the reform threshold under risk aversion that are reported in Section 5. For this purpose, we have to derive the values of p for which Equation 4.1 holds with equality. Observe that, for $\alpha = 1$, consumption is equalized across family members which simplifies the derivation considerably:

$$(1-p)^2 2u(e_o + w) + 2p(1-p)2[u(\tfrac{e_i+e_o+2w}{2}) - d/2] + p^2 2[u(e_i + w) - d]$$
$$= \tag{B.1}$$
$$2[u(\tfrac{e_i+e_o+2w}{2}) - d/2].$$

The results in Table 5.1 are for $w = 0$, $e_o = 1/2$, $d = 0$, and several different risk-aversion parameters γ. As Equation $B.1$ is quadratic in p there are generically two solutions. For the values of γ that we consider, exactly one of these solutions is in $[0, 1]$ while the other solution exceeds 1. For instance, the solutions for $\gamma = 2$

are $2 - \sqrt{2} \approx 0.586$ and $2 + \sqrt{2} > 1$.

In Figure 5 we plot the values of p that solve Equation B.1, when $\gamma = 2$, $e_o = 1/2$, $d = 0.2$, and wealth w varies. As mentioned above, we have to focus on $p \in [0, 1]$. This solution to the equation is given by the following function of wealth w (if $0 \leq w < (\sqrt{321} - 7)/8$):

$$
\begin{aligned}
p &= 0.1 \cdot (17 - \sqrt{(w + 1)(2w + 1)(2w(4w + 5) - 17)(w(4w + 7) - 7)} \\
&\quad + w(7 - 2w(4w + 9))).
\end{aligned}
$$

C Data sources

C.1 Index of labor freedom

The description of the index is based on information provided on the Heritage Foundation's website: www.heritage.org/index/book/methodology. Following this link, a complete description of all ten index components of the Heritage Foundation's 'Index of Economic Freedom' can be found. Since our work only uses the sub-indicator 'Labor Freedom', we describe this component here.

The labor freedom sub-indicator is a quantitative measure that considers various aspects of the legal and regulatory framework of a country's labor market, including regulations concerning minimum wages, laws inhibiting layoffs, severance requirements, and measurable regulatory restraints on hiring and hours worked. Six quantitative factors are equally weighted: Ratio of minimum wage to the average value added per worker; hindrance to hiring additional workers; rigidity of hours; difficulty of firing redundant employees; legally mandated notice period; mandatory severance pay.

Based on data collected in connection with the World Banks Doing Business report, these factors specifically examine labor regulations that affect the hiring and redundancy of workers and the rigidity of working hours. In constructing the labor freedom score, each of the six factors is converted to a scale of 0 to 100. A countrys overall labor freedom score is then simply obtained by averaging the converted values of the six factors.

Unless otherwise noted, the index relies on the following sources for data on labor freedom, in order of priority: World Bank, Doing Business 2014; Economist Intelligence Unit, Country Commerce, 2010-2013; U.S. Department of Commerce,

Country Commercial Guide, 2010-2013; and official government publications of each country.

Also note that, for the current 'Index of Economic Freedom' (2014), scores are generally based on data for the period covering the second half of 2012 through the first half of 2013. Therefore, in Figure 2, we report the index data lagged by one year to make them comparable to the youth unemployment data provided in Figure 1.

C.2   Family ties

The description of the data sources is based on Alesina and Giuliano (2011), who provide the index values of family ties reported in Section 2. This index is based on data of the World Values Survey (WVS) (see www.worldvaluessurvey.org for a comprehensive description of the survey project).

The WVS is composed of national surveys on values and norms on a wide variety of topics, carried out four times (1981–1984, 1990–1993, 1995–1997, and 1999–2004). The questionnaires contain information on different types of attitudes, religion, and preferences, as well as information on demographic characteristics (gender, age, education, labor market status, income, etc.).

The strength of family ties is measured by looking at three variables from the WVS, which capture beliefs regarding the importance of the family in the respondent's life, the duties and responsibilities of parents and children, and love and respect for one's own parents. The first question assesses how important the family is in one person's life and can take values from 1 to 4 (with 1 being *very important* and 4 *not important at all*). The second question asks whether the respondent agrees with one of the two statements (taking the values of 1 and 2 respectively).

- Regardless of what the qualities and faults of one's parents are, one must always love and respect them

- One does not have the duty to respect and love one's parents if they have not earned such respect and love

The third question prompts respondents to agree with one of the following statements (again taking the values of 1 and 2 respectively).

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- It is the parents' duty to do their best for their children even at the expense of their own well-being

- Parents have a life of their own and should not be asked to sacrifice their own well-being for the sake of their children

These measures are combined in two ways. First, the sum of all of them is taken and the variables are recoded such that a higher number corresponds to stronger family ties. Second, the first principal component is extracted from the whole data set with all individual responses for the original variables. This approach yields the index values of family ties we report in Section 2.

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