Why is the minimum wage so high in low-trust countries?[1]

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Abstract

This paper shows that social attitudes have a causal impact on labor market institutions and performance. Especially, we document that countries where cooperative attitudes are widespread tend to rely more on union membership rather than on state intervention to regulate wages, leading to more efficient labor markets.

We first provide theoretical foundations for these relations by arguing that governments strongly intervene in minimum wage regulation when cooperative attitudes are too weak to sustain powerful labor unions able to counteract the monopsony power of firms.

We then develop an original empirical approach to uncover the causal link from social attitudes to labor market outcomes. We use the inherited social attitudes of second-generation Americans as a proxy of the inherited social attitudes in the home country of their parents. This approach allows us to identify the causal effect of inherited social attitudes on labor market institutions and performance. We find that inherited social attitudes had a strong impact on minimum wage legislation, union density and labor market performance in OECD countries since the 1970's.

KEYWORDS: Social attitudes, trust, minimum wage, labor union.

JEL CODES: J52, J53, J80, Z13.

1 Introduction

Why do countries differ so much in the extent to which they rely on direct government intervention rather than on social partners involvement to regulate labor market? Figure 1 provides an illustration of such a trade-off by showing the strong negative correlation between union density and the index of minimum wage enforcement that measures the extent of direct government interventions in minimum wage regulation. This index includes the existence of a legal statutory minimum wage, its level compared to the median wage, the existence of potential derogations of the law like the provision of sub-minimum wages for certain categories, and the dispersion of wage floors within each country.[1]

Little effort has been devoted so far to document and explain the trade-off between union density and the extent of government interventions in minimum wage regulation. Our paper sheds light on this issue: we argue that the negative cross-country correlation between the minimum wage enforcement index and union density is rooted in the cross-country heterogeneity of attitudes towards cooperation.[2] Our benchmark explanation is straightforward: as stressed by Akerlof (1980) and many others,[3] labor unions can counteract the potential monopsony power of employers more easily in societies where trust and civic cooperation are strong enough to insure involvement in collective action. Therefore, the political demand for a statutory minimum wage is expected to be higher when attitudes towards social cooperation do not allow workers to sustain powerful trade unions. At first sight, empirical evidence suggests that this explanation is relevant. Figure 2 shows that minimum wage legislation is less stringent in countries in which individuals say more frequently that "most people can be trusted". In figure 3 it is shown that this attitude exhibits a positive correlation with union density. Eventually, figure 4 shows that social attitudes are not only correlated with labor market institutions but also with labor market performance: employment is positively correlated with the share of people who reply "yes" to the question "do you think that most people can be trusted". The paper provides an explanation to these correlations and explores potential causality going from social attitudes to labor market institutions and labor market performance by proceeding in two steps.

[1] The detailed description of this composite index of minimum wage enforcement is given in appendix A.2. Note that regarding trade unions, we explicitly focus on union membership and exclude union coverage since the degree of coverage is imposed by the law. To that regard, the same negative correlation between union density and union coverage would show up.

[2] Attitudes towards social cooperation are closely related to the concept of "social capital" put forward by Putnam (1993, 2000) and Coleman (1990) among many others. For instance, Coleman (1990, p 300) argues that "authority relations, relations of trusts and consensual allocations of rights which establish norms" can be viewed as resources that help individuals to adopt cooperative behavior.

[3] In particular, Booth (1985), Booth and Chatterji (1993), Naylor (1989, 1990), Naylor and Cripps (1993), Corneo (1995, 1997).

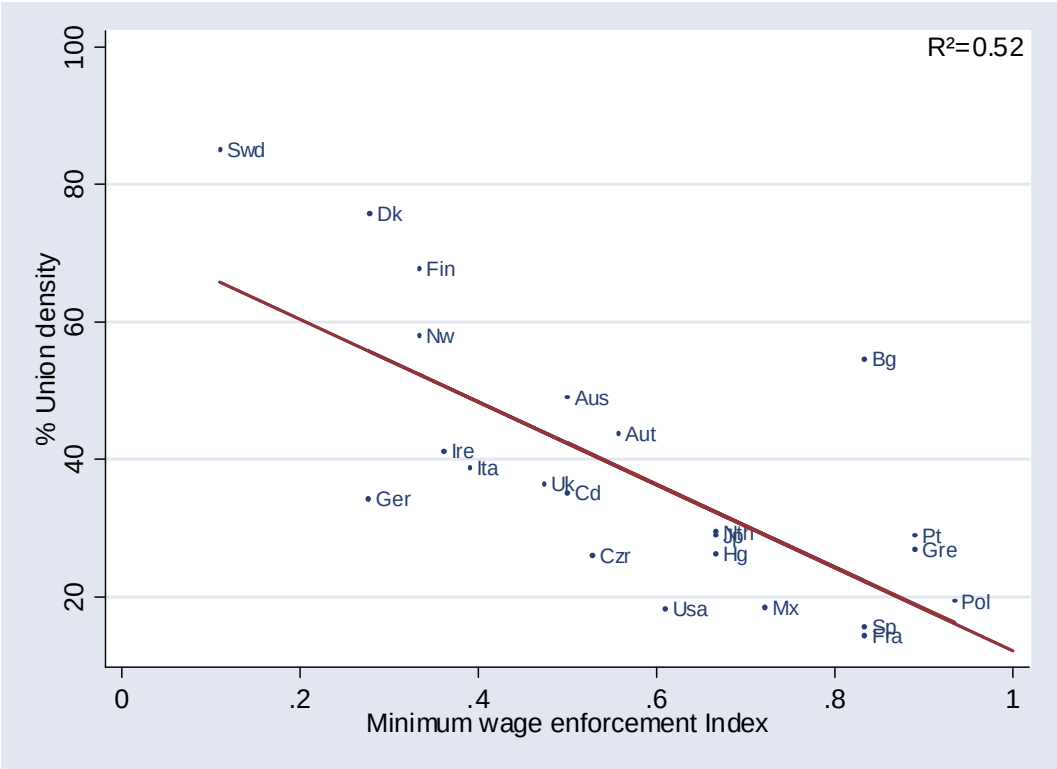

Figure 1: Union density and the degree of enforcement of the minimum wage. Period 1980-2000. Source: OECD and ILO (see appendix).

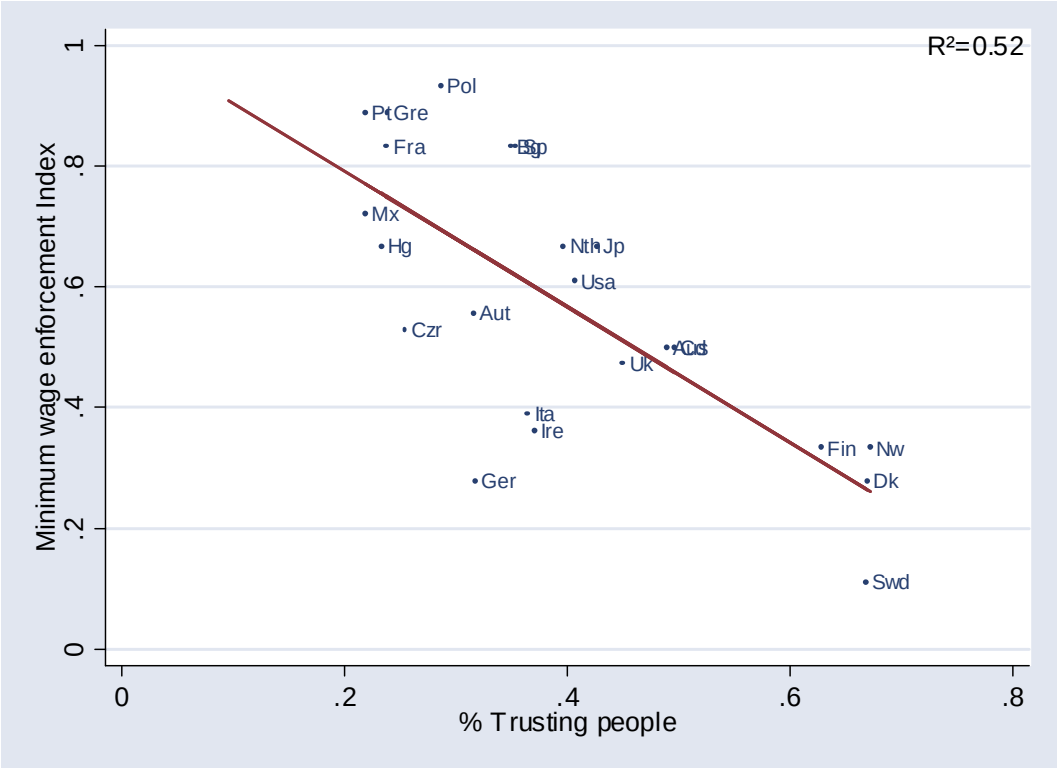

Figure 2: Trust and minimum wage enforcement 1980-2000. Source: World Value Survey and ILO.

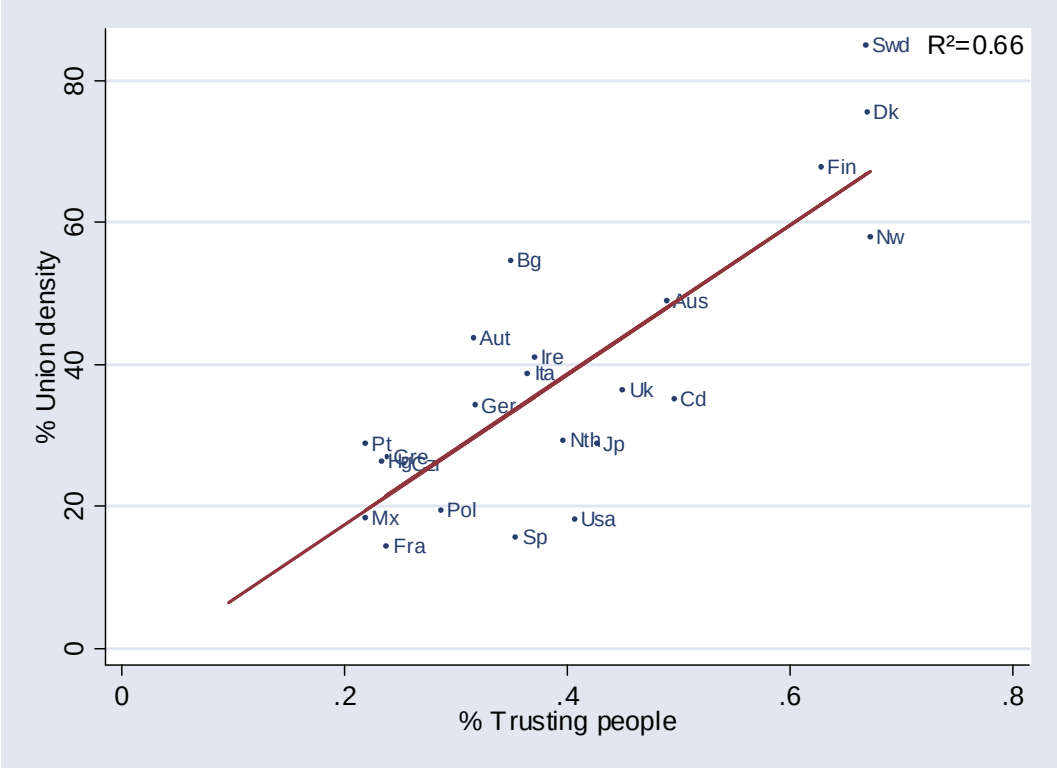

Figure 3: Trust and union density 1980-2000. Source: World Value Survey and OECD.

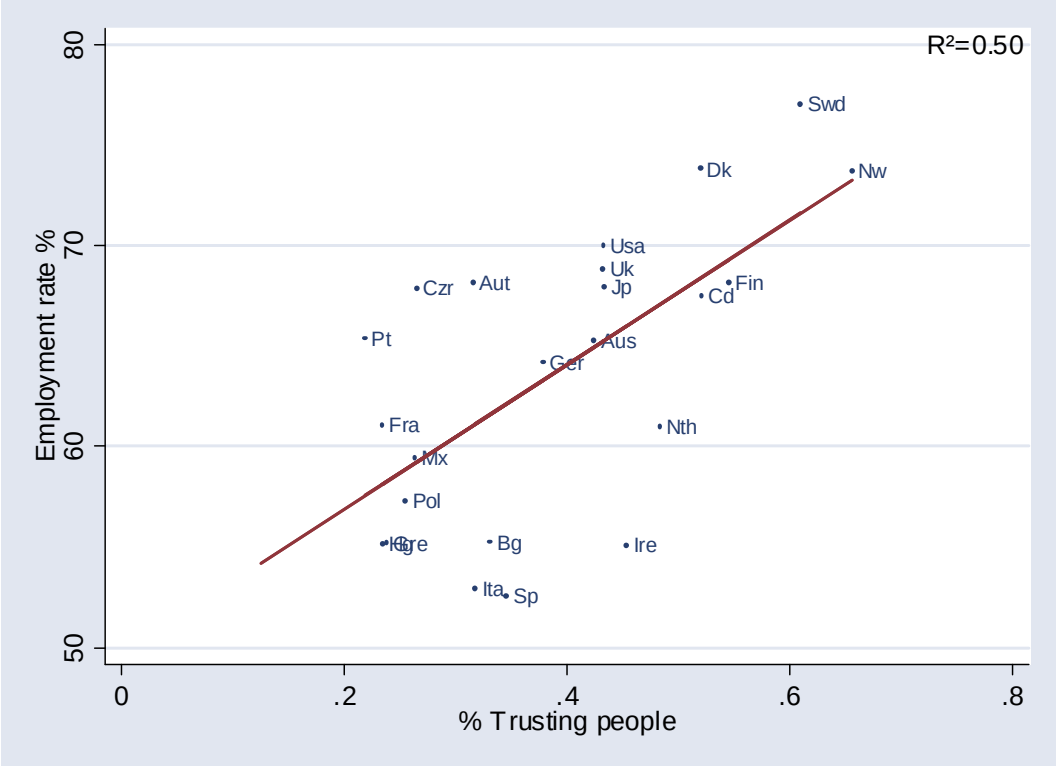

Figure 4: Trust and employment rate of persons aged 15-64 years (percentage) in OECD countries over the period 1980-2000. Source: World Value Survey and OECD.

The first step analyzes the theoretical channel through which social attitudes may influence union density and the extent of direct government interventions in minimum wage regulation. For that purpose we lay down a simple political economy model where a government which can implement a minimum wage is elected and where trade union membership is endogenous. Employers are assumed to have some monopsony power so that both the minimum wage, set by the government, and wage negotiation, sustained by trade unions, can counteract the power of employers. Following an idea formulated by Akerlof (1980),[4] we assume that union members enjoy some social benefits from complying with social customs that invoke workers to express mutual solidarity by joining collective actions. This model allows us to show that such social customs influence both union membership and the minimum wage. When social customs lead to widespread cooperation, union density is high and the minimum wage can be low because trade unions are able to fight the monopsony power of employers. Conversely, when social customs do not enforce widespread cooperation, trade unions are weak and a high minimum wage is required to counteract the monopsony power of employers. The model also shows that employment and output decrease with the degree of government intervention in minimum wage regulation.

The second part of the paper provides a new empirical strategy to test the existence of a causal impact of social attitudes on union density, minimum wage and labor market performance. For that purpose we focus on the causal effect of *inherited* social attitudes which are not instantaneously overdetermined by the economic and institutional features of the country in which people are living. We implement this strategy by using the inherited social attitudes of second-generation Americans, that is people who live and are born in the US but whose parents are born abroad, as a proxy for the inherited social attitudes in the home country of the parents. Inherited social attitudes of second-generation Americans are estimated on the General Social Survey which provides yearly information on the level of trust and confidence in the fairness of others since the 1970s. Moreover this database also provides detailed information on the home country of Americans and their wave of immigration.

We are thus able to estimate the causal effect of inherited social attitudes on current social attitudes, on wage-setting institutions and on labor market performance in 20 OECD countries over the period 1977-2004. The first remarkable result of this estimation strategy is that inherited attitudes strongly influence current social attitudes. Second, more cooperative inherited attitudes significantly increase union memberships and decrease government intervention in minimum wage regulation. Third, cooperative inherited attitudes are also found to affect positively employment patterns by decreasing unemployment rates. Strikingly, these findings are robust

[4]This idea has been further developed by Booth (1985), Booth and Chatterji (1993), Naylor (1989, 1990), Naylor and Cripps (1993), Corneo (1995, 1997).

to the inclusion of country fixed effects which could capture other national specificities.

Our new empirical strategy which allows us to capture the causal effect of culture and history, such as inherited social attitudes, on economic outcomes has a number of appealing features compared to the previous literature in this realm. First, we are able to evaluate the influence of inherited attitudes on current attitudes.[5] Actually, international social surveys such as the World Value Survey provide exactly the same set of questions on trust and fairness since the early 1980's. Secondly, our strategy stands in contrast with previous studies using historical variables as instruments for culture. For instance, in Tabellini's (2005) paper about the effect of culture on economic development, the literacy rate at the end of the XIXth century and the political institutions in place over the past several centuries are used as instruments to explain exogenous variations in culture. By definition the validity of such instruments relies on the questionable assumption that they have no direct impact on economic development. Eventually and maybe more importantly, our strategy allows us to capture time-variations in social attitudes by estimating inherited social attitudes of second-generation Americans at different periods in time. This is a key element if one wants to isolate a specific feature of culture by controlling for country fixed effects capturing other country specific features (see Tabellini (2005) for another strategy to control for country fixed effects).

More broadly, this paper suggests that indicators based on social attitudes might provide a better understanding of labor market outcomes than the quantitative indicators of labor market institutions currently used by the literature (Nickell et al., 2005). As stressed recently by Blanchard (2005), aggregate indicators are doing a poor job in explaining the evolution of the employment patterns in OECD countries. By contrast, observed social attitudes provide a more comprehensive picture of the ability of a country to reach good outcomes in terms of employment or unemployment (see Blanchard and Philippon, 2004, for a similar analysis applied to strikes). Moreover, the current literature explaining employment patterns by labor market institutions is fraught with a clear endogeneity bias since these institutions have also changed in reaction to the evolution of employment patterns. In contrast, our strategy helps us to get rid of this

[5] Alesina and Fuchs-Schuendeln (2005) and Dohmen et al. (2006) evaluate the influence of attitudes inherited from parents on current attitudes with different methodologies. Like us, they find a strong influence of parents on the attitudes of children.

The influence of the country of origin of the ancestors on US born people has been highlighted by Reimers (1985), Blau (1992), Carroll et al. (1999), Antecol (2000), Guinnane et al. (2002), Giuliano (2004), Fernandez and Fogli (2005) and Algan and Cahuc (2005). Blau (1992) and Guinnane et al. (2002) examine whether the fertility of immigrants differs from that of the native born in the US. Reimers (1985) and Antecol (2000) study the effect of the country of origin on the labor force participation of immigrants. Using the same approach, Giuliano (2004) focuses on family leaving arrangements and Fernandez and Fogli (2005) analyze female labor participation and fertility. Caroll et al. (1999) use this approach for the analysis of saving behavior. Algan and Cahuc (2005) look at family values. All these studies find a significant influence of the country of origin on attitudes, behavior and economic outcomes.

endogeneity bias by identifying the cultural traits in social cooperation which are not directly affected by contemporaneous institutions and economic environment. Eventually, this line of research offers new perspective for understanding the possibility of labor market reforms. It suggests that institutions often blamed to induce poor labor market performance in Continental European and Mediterranean countries are much more the symptoms of the lack of prosocial attitudes rather than the cause of unemployment. This finding calls for a new research agenda on policies which help to foster prosocial behavior.

2 Theory

We consider a static economy made of a continuum of risk neutral workers of measure one. There are two non storable goods: a numeraire good and labor. Workers differ in their ability. The proportion of workers whose productivity is lower than y, $y \geq 0$, is defined by the cumulative distribution function $G(y)$.

The sequence of decisions is the following:

1. Individuals vote to elect a government that offers to set a minimum wage $\bar{w} \geq 0$.
2. The government sets the minimum wage.
3. Once the minimum wage is set, workers can decide to join trade unions.
4. Wages are set by employers for non unionized workers and by wage negotiation for unionized workers.

The model is solved backward. We thus start by describing the outcome of wage setting and the decisions to unionize before moving to the choice of the minimum wage

Let us first start with the wage setting process (step 4). Two cases are possible: workers are either unionized or non unionized.

Employers who face non unionized workers benefit from monopsony power that allows them to make take-it-or-leave offers. The indirect utility of non unionized workers amounts to their wage if they work and to zero otherwise. In this context, employers systematically offer the minimum wage $\bar{w} \geq 0$ set by the government if the productivity y is higher than the minimum wage and make no offer otherwise.

Unionized workers have some bargaining power. Moreover, it is assumed that union members can enjoy a better reputation than non union members by complying with a social custom that invokes workers to express mutual solidarity. This assumption follows an idea formulated by

Akerlof (1980), and further developed by Booth (1985), Booth and Chatterji (1993), Naylor (1989, 1990), Naylor and Cripps (1993) and Corneo (1995), The reputation obtained by union members provides benefits, denoted by $S \geq 0$, that increase with the strength of the social custom which sustains social cooperation. Individuals who join unions gets the benefits from the reputation only if they behave in accordance with the social custom of the group. This social custom triggers mutual trust and cooperative behavior which allows workers to counteract the monopsony power of employers. For instance, social custom may incite unionized workers to go on strike if the employer decides to set the wage of any unionized worker below the level considered as fair. From this viewpoint, the bargaining power of unionized workers relies on their involvement in collective action sustained by adhesion to social custom. For the sake of simplicity, it is assumed that unionized workers are able to get a wage equal to their productivity, so that a worker whose productivity is y gets a wage equals to y. Trade unions are able to observe the productivity of each worker because social custom induce workers to cooperate and exchange informations. Workers who decide to join trade unions bear some pecuniary and non pecuniary costs linked to collective action and adhesion to collective organization denoted by $c \geq 0$. These costs are assumed to be different across workers. For the sake of simplicity, the cost c and the productivity y are independently distributed. The cumulative distribution function of c is denoted by F. In this framework, the indirect utility of workers whose productivity is y and cost c amounts to

$$\begin{cases} y - c + S & \text{if unionized} \\ \bar{w} & \text{otherwise.} \end{cases}$$

Workers decide to join unions (step 3) if and only if the utility derived from union membership, equals to $y - c + S$, is larger than the utility obtained without union membership, equals to the minimum wage $\bar{w}$. Therefore, union density of workers whose productivity is y, denoted by $D(y)$, amounts to

$$D(y) = F(\tilde{c}(y)), \tilde{c}(y) = y - \bar{w} + S. \tag{1}$$

It turns out that union density increases with S, the strength of attitudes towards social cooperation. In contrast, minimum wage hikes decrease union membership.

Let now turn to the minimum wage set by the government (step 2). Since the productivity of each individual is not observed by the government, the minimum wage cannot hinge on productivity. The minimum wage can only be the lower bound of the wage distribution. The election process is represented by the probabilistic voting model which implies, under some assumptions assumed to be fulfilled, that the elected government maximizes the sum of the utilities of the workers.[6] Accordingly, the government chooses the minimum wage $\bar{w} \geq 0$ that

[6] This outcome can be derived from the simple case in which each group of workers of type-(y, c) is heterogeneous

maximizes the social welfare function:

$$W = \int_{\bar{w}}^{+\infty} \left(\int_0^{\tilde{c}(y)} [y - c + S]\, dF(c) + [1 - F(\tilde{c}(y))]\, \bar{w} \right) \mathrm{d}G(y). \tag{2}$$

For an interior solution $\bar{w} > 0$, the optimal minimum wage satisfies the first order condition, which can be written as

$$\int_{\bar{w}}^{+\infty} [1 - F(\tilde{c}(y))]\, \mathrm{d}G(y) - \left(\int_0^{\tilde{c}(\bar{w})} [\bar{w} - c + S]\, dF(c) + [1 - F(\tilde{c}(\bar{w}))]\, \bar{w} \right) G'(\bar{w}) = 0. \tag{3}$$

This equation indicates that the optimal choice of the minimum wage is the consequence of the following trade-off: minimum wage hikes are bad for social welfare because they destroy jobs (term in parenthesis in the left-hand side), but increases in the minimum wage are also good for social welfare because they improve the welfare of non unionized workers (first integral in the left-hand side). Let us now assume that the second order condition is satisfied and that the first order condition defines a single positive value of $\bar{w}$.[7] Then, we get the following results:

Result 1: The optimal minimum wage decreases with the strength of cooperative attitudes.

This result simply obtains by differentiation of the first order condition (3). Let us denote by $\Phi(\bar{w}, S)$ the left-hand side of equation (3). Differentiation of equation (3) yields:

$$\frac{d\bar{w}}{dS} = -\frac{\partial \Phi(\bar{w}, S)}{\partial S} \Big/ \frac{\partial \Phi(\bar{w}, S)}{\partial \bar{w}} < 0$$

because $\partial \Phi(\bar{w}, S)/\partial \bar{w} < 0$ if the second order condition is fulfilled and

$$\frac{\partial \Phi(\bar{w}, S)}{\partial \bar{w}} = -\int_{\bar{w}}^{+\infty} F'(\tilde{c}(y)) \mathrm{d}G(y) - F(\tilde{c}(\bar{w}))G'(\bar{w}) < 0$$

This result can be easily understood when one looks at the trade-off that leads to the choice of the minimum wage. The social cost of the minimum wage is linked to job destructions. This cost is independent of social custom since all workers whose productivity is below the minimum wage are unemployed whatever their social attitudes. On the other hand, the benefits of the minimum wage hinges on social customs: as only non unionized workers benefit from the minimum wage, there are less workers who benefit from the minimum wage when social custom are strong. In the limit, when all workers are unionized, everyone gets a wage equal to his productivity, and

with respect to ideological biases towards the two candidates and where profits are redisbributed to a set of individuals whose measure goes to zero. Then, following Persson and Tabellini (2000) it turns out that the outcome of the elections maximizes the sum of the utilities of the workers if the ideological bias is represented by an additive term in the utility function and is distributed with a uniform distribution that is the same for all type-(y, c) individuals.

[7] This is the case for instance for positive values of S when the distributions of y and c are uniform on $[0, y_{\sup}]$ and $[0, c_{\sup}]$, with $y_{\sup} \geq 1$ and $c_{\sup} \geq 1$.

the minimum wage is worthless. Accordingly, cooperative behavior decreases the benefits of minimum wage hikes without changing their cost. This mechanism leads the government to choose a lower minimum wage when social cooperation is widespread.

Result 2: The equilibrium trade union density increases with the strength of cooperative attitudes.

This result is obtained by computing the derivative of union density $D(y)$ defined in equation (1) for the optimal value of the minimum wage given by equation (3). In that situation, one gets

$$\frac{dD(y)}{dS} = F'(\tilde{c}(y)) \left(1 - \frac{d\bar{w}}{dS}\right) > 0 \tag{4}$$

The interpretation of result 2 is straightforward but it is worth noticing that social customs influence union density through two channels. A direct one (the term 1 in the parenthesis of the right-hand side of equation (4)), according to which more social cooperation solves the free rider problem. An indirect one (the term $d\bar{w}/dS$ in the parenthesis of the right-hand side of equation (4)), according to which more social cooperation reduces the minimum wage and then creates more incentive to unionize.

Result 3: Employment and aggregate output increase with the strength of cooperative attitudes.

This result is obtained by noticing that employment and aggregate output amounts to $1 - G(\bar{w})$ and $\int_{\bar{w}}^{+\infty} y dG(y)$, and that $\bar{w}$ decreases with social the strength of attitudes towards social cooperation. Result 3 is a direct consequence of the negative impact of social cooperation on the minimum wage. When workers cooperate more frequently, the minimum wage can be set at a lower level and the employment level is thus higher. More fundamentally, this result relies on the assumption that the productivity of each worker is not observed by the government but that it is observed by trade unions. This assumption implies that the government can only set a minimum wage independent from productivity, whereas wages negotiated by trade unions depend on productivity. Obviously, the assumption that trade unions perfectly know the productivity of each worker is extreme. However, it is a way to account for the fact that trade unions know more about the workplace than the government. This is also a way to account for the role of unions in the improvement of social relations and provision of information stressed by Freeman and Medoff (1984) and many others.[8]

Our theoretical model shows that predetermined social attitudes,[9] represented by the para-

[8] See Addison and Belfield (2004) for a survey of the theoretical and empirical findings on this topic.

[9] The analysis is devoted to the short run equilibrium, in which the set of attitudes towards social cooperation is a predetermined variable. However, it is worth noticing attitudes towards social cooperation can evolve over time.

meter S in the model, are likely to influence the minimum wage, union density, employment and aggregate output. These predictions are confronted to the data in the next sections.

3 Empirical results

In this section, we estimate labor market outcomes of social attitudes in OECD countries. We first document our identifying strategy of a causal effect of social attitudes on contemporaneous wage-setting institutions and employment. For that purpose we focus on *inherited* social attitudes which are not instantaneously overdetermined by the economic and institutional features of countries in which people are living. We next present the databases used to identify such inherited social attitudes. We use social attitudes of people who live and are born in the US but whose parents are born abroad, as a proxy for the inherited social attitudes in the home country of the parents. We also document to what extent current attitudes are influenced by inherited attitudes. Eventually, we estimate the magnitude of the causal impact of social attitudes on wage setting institutions and labor market performance on 20 OECD countries over the period 1977-2004.

3.1 Estimation strategy

How do social attitudes relate to wage-setting institutions? And do they explain cross-country differences in labor market performance? Our goal is to answer this question by looking at the issues raised by the estimation of the following linear equation based on the predictions of the theoretical model:

$$I_{ct} = \alpha_0 + \alpha_1 S_{ct} + \alpha_2 X_{ct} + \alpha_3 F_c + \alpha_4 T_t + \varepsilon_{ct} \tag{5}$$

where I_{ct} stands for the wage-setting institutions represented either by union density or by minimum wage legislation in country c at period t, S_{ct} measures country average of cooperative attitudes, X_{ct} denotes a vector of average characteristics of the population and of the economy,

For instance, Akerlof (1980), Corneo (1995, 1997) and Lindbeck et al. (1999) assume that the values responsible for the compliance to social custom are less likely to be passed on from one generation to the next one when disobedience is greater. This assumption could lead to represent the low of motion of social customs as follows:

$$S_{t+1} = S_t + h(X + D_t - S_t),$$

where h is a continuous and increasing function that satisfies $h(0) = 0$; $X \in \mathbb{R}$ is a parameter that represents the potential influence of structural factors other than trade union density on the evolution of social attitudes, and D the aggregate union density, equal to $\int_{\bar{w}}^{+\infty} D(y)\mathrm{d}G(y)$. This representation of the dynamics of social attitudes suggests that countries can exhibit very different dynamics. Some countries, whose value of X is low, can start with strong attitudes towards social cooperation and then face continuous decreases in attitudes towards social cooperation, accompanied by union density drops and minimum wage increases. Other countries, whose value of X is large, can start from weak attitudes towards social cooperation but will eventually converge towards high social cooperation and union density. Our empirical analysis is limited to the analysis of the short run impact of inherited social attitudes. The analysis of the dynamics of social attitudes is beyond the scope of our paper.

F_c stands for country dummies capturing all other specific features such as the legal origins or past institutions with long-lasting effects, T_t stands for period dummies; ε_{ct} is an error term.

The problem with equation (5) is that contemporaneous social attitudes are likely to be influenced by current institutions. As suggested by the model, individuals living in an environment with a high level of union density might be more prone to cooperate with others. Or people living in a country with very weak minimum wage legislation and weak labor unions might have a greater feeling of exploitation and have low expectations regarding the fairness of other people. We are thus looking for variables that influence social attitudes but which are exogenous as regards current institutions and labor market performance. In other words, we are looking for the inherited part of national social attitudes which is ingrained in individuals independently of the contemporaneous national institutions.

In order to find such a variable, we focus on individuals born in the US and who are currently living in the US, but who differ by the country of origin of their parents. We then measure the impact of the country of origin of their forebears on their current social attitudes, controlling for their other individual characteristics and the economic environment. This strategy leads us to estimate the equation:

$$s_t^{US} = \beta_0^{US} + \beta_{ct}^{US} c_t^{US} + \beta_2^{US} x_t^{US} + \beta_3^{US} T_t^{US} + \eta_t^{US}, \tag{6}$$

where s_t^{US} stands for the social attitudes of people living in the US in period t, c_t^{US} is a dummy variable indicating their ancestor's country of origin, x_t^{US} is a vector of individual characteristics, T_t^{US} stands for period dummies, and η_t^{US} is an error term.

In this context, the variable S_{ct} which shows up in equation (5) and which denotes average cooperative attitudes in country c at time t can be decomposed into two terms. First, a term which accounts for the attitudes inherited from previous generations independently of the current social and economic environment, which corresponds to the coefficient[10] β_{ct}^{US} in equation (6). Second, a residual term, denoted by R_{ct}, which accounts for all other elements which influence social attitudes. Accordingly, one can write

$$S_{ct} = \beta_{ct}^{US} + R_{ct}. \tag{7}$$

Then, using this expression for S_{ct}, we estimate the equation

$$I_{ct} = \gamma_0 + \gamma_1 \beta_{ct}^{US} + \gamma_2 X_{ct} + \gamma_3 F_c + \gamma_4 T_t + \nu_{ct}, \tag{8}$$

[10] More formally, β_{ct}^{US} is equal to the difference $\mathbb{E}\left(s_t^{US} | c_t \neq rc, x_t^{US}, T_t^{US}\right) - \mathbb{E}\left(s_t^{US} | c_t = rc, x_t^{US}, T_t^{US}\right)$ where $\mathbb{E}$ denotes the expectation operator and rc stands for the country of origin chosen as the reference country.

where the coefficient γ_1 measures the impact of the attitudes inherited from previous generations on current institutions. Since we are able to identify the attitudes inherited from previous generations, this strategy shuts down any potential reversal causality effect stemming from the fact that current cultural attitudes are endogenous to contemporaneous institutions and employment patterns.

Inherited attitudes of people born in the US are a good proxy for inherited attitudes of people living in the country of origin of their parents only if attitudes are transmitted similarly from parents to children independently of the country in which children live. A way to check this assumption is to verify whether inherited attitudes of people living in the US are correlated with the attitudes of people currently living in the country of origin of their parents, i.e. whether β_{ct}^{US} and S_{ct} are correlated. Another approach consists in assuming that inherited attitudes of people born in the US, measured by β_{ct}^{US}, are an instrument for the attitudes S_{ct} of people currently living in the corresponding country. This approach boils down to estimate the simultaneous equations system

$$\begin{aligned} I_{ct} &= \lambda_0 + \lambda_1 S_{ct} + \lambda_2 X_{ct} + \lambda_3 F_c + \lambda_4 T_t + \nu_{ct}, \\ S_{ct} &= \delta_0 + \delta_1 \beta_{ct}^{US} + \delta_2 F_c^s + \delta_3 T_t^s + \eta_{ct} \end{aligned} \tag{9}$$

where F_c^s stands for country dummies, T_t^s stands for period dummies and η_{ct} is an error term.

Both methods will be used to estimate the causal impact of social attitudes on labor market institutions and performance.

3.2 Data and identification of inherited social attitudes

As discussed in the previous section, our empirical strategy is to isolate the effect of social attitudes from those of the contemporaneous economic and institutional environment by focusing on the inherited component of social attitudes. Since standardized cross-country data on the level of social cooperation prevailing in earlier generations are not available, we use the following alternative strategy. We look at social attitudes of people who are born and are currently living in the same country, namely the United States, but who differ by the country of origins of their forbears. Since this inherited component will be used to explain labor market outcomes of the current countries since the 1970's, we are primary interested in social attitudes transmitted from the post-war generations. Thus our main sample of interest is made up of second-generation Americans, that is whose parents were born abroad. We then analyze to what extent this inherited component is a good proxy for explaining the social attitudes of people who are currently living in the corresponding OECD countries.

3.2.1 Data on inherited social attitudes and sample selection

We first document the database used to identify the inherited social attitudes of Americans whose parents came from different OECD countries. The analysis is carried on with the General social Survey (*GSS*) which consists of an individual social survey on the United States covering the period 1972-2004.

The first obvious feature of social attitudes which matters in the realm of collective action and adhesion to organizations is the level of trust in others. Accordingly, we use the question on the trustfulness of people provided by the *GSS* database: "*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*". The answers are given on a scale from 1 to 3, which correspond to "Most people can be trusted", "Can't be too careful", "Depends". We construct a trust indicator *trust_ usa* equals to one if the respondent answers that people can be trusted and 0 if she answers that one should be careful (after deleting the answers "do not know").

A second key ingredient of social attitudes which is likely to affect cooperation on the labor market and the political support for minimum wage is the feeling of exploitation or fairness. The fairness item is assessed by the question: "*Do you think most people try to take advantage of you if they got a chance or would they try to be fair?*". The answer also ranges from 1 to 3 corresponding to "Would take advantage of you", "Would try to be fair" and "Depends". We construct a indicator *fairness_ usa* as the percentage of respondents who answer that "People would try to be fair" instead of "Would take advantage of you", disregarding the answer "Depends".

To get a synthetic measure of cooperative attitudes, we define a single cooperation index for each nation by taking the means of the individual reply over the two questions about trust and fairness.

In order to assess national social attitudes which are transmitted through generations, we use informations on the country of origins of the respondent's forbears. The GSS ethnic variable reads as follows: "*From what countries or part of the world did your ancestors come from?* The country of origins cover almost all OECD countries: Austria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Mexico, Netherlands, Norway, Poland, Portugal, Spain, Sweden, and the United Kingdom. The whole sample for each ethny is quite sizeable, ranging from 6108 observations for respondents with German origins, 5754 observations for Anglo-Saxon origins, 1836 observations for Italian origins, 722 observations for French origins and 669 observations for Norvegian origins.

Eventually, we are also able to select the waves of immigration we are interested in. Respondents are asked if they are born in the United States and how many of their parents and

grand-parents were born in the country. The question on parents birthplace is scaled 0 if both parents are born in the USA, 1 if only the mother is born in the US, and 2 if only the respondent's father is born in the country. The answer on grand-parents birthplace is scaled from 0 to 4 indicating the number of grandparents born in the US.

Since we want to capture the inherited component of social attitudes prevailing in the country of origins before the 1970s, our sample is made up of people whose at least one parent is not born in the United States. Note that we do not restrict the analysis to households whose both parents are born abroad in order to gather as much observations as possible.

Our final sample consists of working-aged individuals born in the United States but whose at least one parent was born in a different country of origins. Since respondents were asked about their birthplace only since 1977, our sample covers the period 1977-2004. The total number of observations amounts to 3874. The country of origins with the most observations is Germany, with 305 observations, while the lower number of observations concerns Finland with 21 observations. Detailed descriptions of the countries of ancestry and the summary statistics for individual characteristics are reported in Tables 4 and 5 in Appendix A.1.

3.2.2 Identification of inherited social attitudes

In order to identify inherited social attitudes, we run probit estimates on the two indicators *trust_usa* and *fairness_usa* by using the country of origins of the parents' respondents as our key explanatory variable. We also include the main other socioeconomic characteristics including age, gender, employment status, religious affiliation, political orientation. Significantly, the GSS data also asks respondents the level of education of their parents. This information might be crucial since potential correlation between social attitudes and ethnic heritage might transit through parents characteristics such as human capital rather than culture per se. We also include year dummies to control for specific temporal shocks.

Table 1 reports the probit estimates of equation (6) identifying the impact of the attitudes of previous generations, proxied by the country of origin, on current social attitudes. Americans with Swedish ancestors are taken as the reference group. Table 1 first shows that the fact to have parents from a different country of origin than Sweden has a significant negative impact on social attitudes, except for individuals whose parents came from other Nordic countries such as Denmark, Norway and Finland. Next Table 1 points out that having ancestors coming from Mediterranean countries such as France, Greece, Italy, Portugal or Spain, or from Latin American countries with Mexico, steadily decreases the probability to trust others and believe in their fairness. Americans with Anglo-Saxon and Central European origins, or whose parents came from Japan, are also less likely to be trusting than individuals with Swedish forbears. Yet the

magnitude of the coefficients is much smaller compared to people with Mediterranean origins.[11] Eventually, the estimated coefficients associated with the other individual characteristics are reported in Tables 10 in Appendix. Social attitudes are positively correlated with education, respondent's mother education and age, giving credit to the thesis of erosion of social attitudes across generations put forward by Putman (2000).

Table 1: Coefficients associated with the country of origin of Americans-

Country of	Trust in other=1		People try to be fair=1	
origins of ancestors	Coeff	Std Error	Coeff	Std Error
Austria	-.068**	(.009)	-.094***	(.016)
Belgium	-.136***	(.015)	-.215***	(.031)
Canada	-.283***	(.023)	-.231***	(.058)
Czeck Republic	.045***	(.013)	-.042**	(.019)
Denmark	.016*	(.009)	.124	(.011)
Finland	.161***	(.028)	.265***	(.029)
France	-.198***	(.058)	-.262***	(.050)
Germany	-.452***	(.021)	-.251***	(.031)
Greece	-.480***	(.032)	-.823***	(.046)
Hungary	-.222***	(.016)	-.254***	(.026)
Ireland	-.052***	(.016)	-.103***	(.017)
Italy	-.380***	(.015)	-.306***	(.025)
Japan	-.111***	(.041)	.117**	(.049)
Mexico	-.513***	(.052)	-.267***	(.070)
Netherlands	-.151***	(.025)	.063*	(.032)
Norway	.233***	(.007)	.866***	(.012)
Poland	-.240***	(.015)	-.204***	(.019)
Portugal	-.485***	(.029)	.534***	(.039)
Spain	-.319***	(.047)	-.278***	(.053)
Sweden	Reference			
United Kingdom	-.173***	(.025)	-.114***	(.028)
Pseudo-R^2	.0719		.0549	
Observations	2178		2109	

General Social Survey: ***:1%, **: 5%, *: 10%

3.3 Influence of inherited attitudes on current attitudes

Inherited social attitudes can have a significant impact on contemporaneous institutions and economic performance only if current social attitudes, which shape contemporaneous institutions, are indeed influenced by inherited social attitudes. This is the case if inherited social attitudes

[11] It is worth noticing that Germany is a remarkable exception. Individuals whose parents came from Germany are more distrustful than say, French or Italians. Yet this characteristic does not show up when we look at the whole sample whatever the time of immigration, suggesting that the world war two period played a crucial role.

of second-generation Americans are higly correlated with social attitudes currently prevailing in the home country. In this section, we check this correlation pattern by using international social surveys which provide exactly the same information about attitudes towards cooperation and over the same period as the GSS database does.

3.3.1 Data on cross-country heterogeneity in social attitudes

We explore the relationship between inherited social attitudes estimated in the United States and the social attitudes of people who are currently living in the corresponding home countries. We carry on this analysis on the World Value Survey database which samples the attitudes of people in all OECD countries over three main waves (1981, 1990, 1999-2001). The advantage of this database is that it provides exactly the same question on social attitudes as that of the GSS database and covers all the OECD countries of origins reported in the GSS database. The question on the trustfulness of people provided by the WVS database reads: "*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*". Our indicator *trust* is the percentage of respondents in each country replying "Most people can be trusted" instead of "One must be careful" (after deleting the answers "do not know"). The fairness item is assessed by the question: "*Do you think most people try to take advantage of you if they got a chance or would they try to be fair?*". The fairness indicator is given by the percentage of respondents who answer "People try to be fair" rather than "People would take advantage if they got a chance". The WVS database reports this question for the wave 1999-2001 and for most OECD countries.[12] The whole sample is based on working age people and includes the OECD countries mentioned as potential country of origins in the GSS database: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, UK and USA. By grouping the different countries and different waves together, this selection leaves us with a sample of 60,607 working aged individuals. The summary statistics for the number of observations by country and the individual characteristics are reported in Table 4 and Table 5 in Appendix A.1.

In lines with our previous strategy, we run probit estimates on the two indicators of social cooperation attitudes, *trust* and *fairness*, in order to isolate the specific role of the country of residency in shaping social attitudes. The role of specific national features is measured by estimating the contribution of country-fixed effects to respondents' attitudes. The reference home

[12] Information on current social attitudes for missing countries has been completed by the ISSP database of 1998 which provides exactly the same question on trust and fairness. Information on this database is reported in Appendix A.1.

country is the same as the one used for the country of origins in the GSS database, namely, Sweden. We also control for the same set of individual characteristics including gender, age and age squared, the number of years of education, employment status, income category, union membership, political orientation and religious affiliation. The contribution of individual characteristics and country fixed effects are reported in Table 11 in Appendix. Strikingly, all country dummies are statistically significant at the 1 percent level, suggesting the key contribution of specific national features in social attitudes.

3.3.2 Correlation between inherited social attitudes and current social attitudes in the home country

Figure 5 reports the correlation between the marginal fixed effects of the country of origins of Americans on their social attitudes and the marginal fixed effects of the corresponding country of residency on the same indicator of social attitudes. To get a synthetic view, we construct the indicator on social attitudes as the mean of the two marginal effects estimated on the questions *trust* and *fairness*.

Figure 5 - y axis reports the estimated marginal effect of the country of residency. The fact to live in Mediterranean countries like France or Italy reduces the level of cooperative attitudes by 24 percent and 26 percent by comparison with an individual sharing the same characteristics but living in Sweden. By contrast, living in another Nordic countries might increase the level of social cooperation by 4 percent in the Netherlands or 8 percent in Norway. Anglo-Saxon and European continental countries lie in between. Living in Germany or United Kingdom decreases the level of cooperative attitudes by 13.8 percent and 13.22 percent relatively to someone living in Sweden.

Figure 5 - x axis reports the corresponding marginal effect of the country of origins estimated in the previous section on second-generation Americans. The ordering of the effect of country of origins closely resembles that of the home country effect. The fact to have parents who came from Mediterranean countries like France and Italy reduces the level of cooperative attitudes by 8 percent and 12 percent respectively relatively to an American whose parents came from Sweden. Conversely, the fact to have parents coming from Denmark and Norway rather than Sweden increases social attitudes by .02 percent and .17 percent respectively. Thus Figure 5 suggests a tight upward-sloping linear relation between inherited social attitudes in the United States and social attitudes in the corresponding home countries. The R-squared shows that almost 80 percent of the variance in our indicator of attitudes towards social cooperation in OECD countries is accounted for by inherited traits. This result suggests that national traits of earlier generations have been transplanted in the United Stated and transmitted fairly unchanged

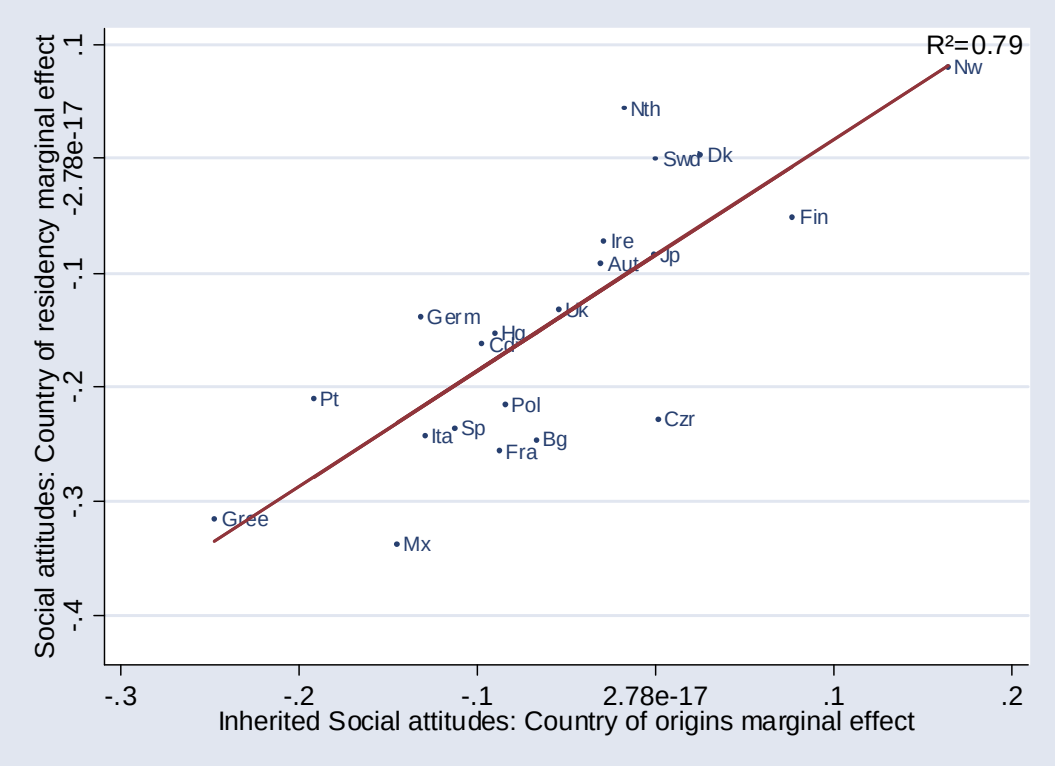

Figure 5: Correlation between inherited social attitudes by country of origins and current social attitudes by country of residency

through the next generation regardless of the new institutional environment. The predicting power of inherited social attitudes is thus fairly high, providing support for our estimation strategy.

3.3.3 Changes in inherited social attitudes and in social attitudes in the home country

We next explore to what extent changes in inherited social attitudes of second-generation Americans are also correlated with changes in social attitudes in the corresponding home country. Since we focus on second-generation Americans over the period 1977-2004, we are able to track back the social attitudes prevailing in the home country of the parents at different periods. In particular, we can capture the evolution of inherited social attitudes with one generational gap by estimating the inherited social attitudes of second-generation Americans over different sub-periods. For that purpose we split our estimation of inherited social attitudes of Americans and social attitudes in the home country into two sub-periods: the 1980's and the 2000's. This division allows us to recover changes in cooperative attitudes between two generations. To capture

changes in social attitudes in the home country, we separate the probit regression on the question trust and fairness between the first wave 1981 (completed by the second wave 1990-91 for missing countries) and the fifth wave 1999-2001 of the World Value Survey. Regarding changes in inherited social attitudes of second-generation Americans, we run probit estimations on the *trust_usa* and *fair_usa* indicators on the two following sub-periods of the GSS database: 1977-85 and 1995-2002. Note that the range of periods is slightly larger for the GSS database in order to get balanced observations between the two sub-samples. The estimation in the WVS database and GSS database include exactly the same set of controls used in the previous estimates on the whole sample.

Figure 6 illustrates the correlation in the evolution of inherited social attitudes for second-generation Americans and attitudes of people living in the home country. To ease the interpretation of the results, we report the average level of social attitudes over the two sub-periods rather than focusing on marginal fixed effects since the latter ones are defined in references to changes in Swedish social attitudes. Moreover, the measure of social attitudes in this figure only refers to the level of trust, questions on fairness being unavailable in the World Value Survey for the early 1980s.

3.4 Estimating labor market outcomes of social attitudes

We now turn to the estimated effect of social attitudes on wage-setting institutions and labor market performance. According to our empirical strategy, we estimate equation (8) in which the main explanatory variable is the inherited part of social attitudes which is not affected by the contemporaneous national environment.

3.4.1 Data

We start by explaining the data used to measure the two wage-setting institutions of interest, namely minimum wage legislation and labor union density. Regarding minimum wage first, we want to capture the extent to which wages are regulated by the law instead of being bargained over between employers and employees. This line of inquiry requires to take into account not only the level of minimum wages but also the nature of the regulation.

The measure of wage regulation covers three main criteria: i) the existence of a statutory minimum wage instead of a bargained wage, ii) the extent to which the minimum wage varies across ages, regions, skills or occupations, iii) the extent to which there are specific provisions for sub-minimum wages. We construct a sub-index on *wage_enforcement* by taking the average of these three criteria. The corresponding data come from the International Labor Organization which provides a detailed historical description of the minimum wage legislation. We also take

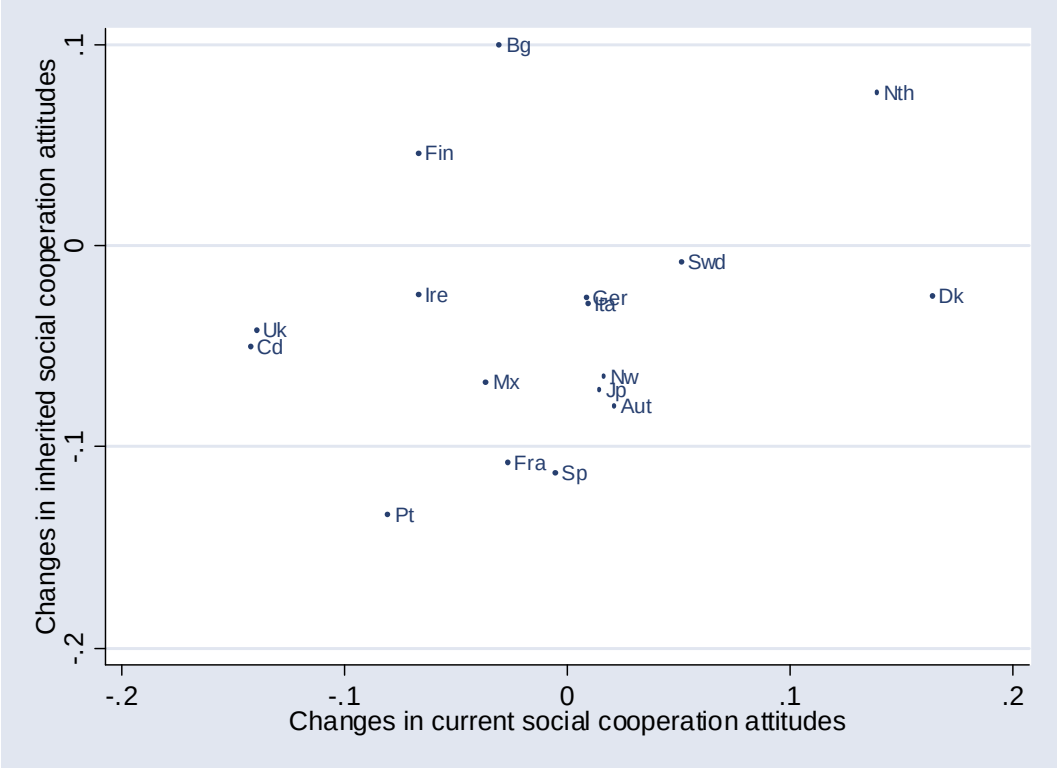

Figure 6: Variation in average social attitudes for second-geenration Americans and in the corresponding home country between 1980's and 2000's. Source: Trust indicator in GSS and WVS. Sub-periods: 1980s and 2000s.

into account the level of the minimum wage by constructing a sub-index *wage_level* measuring the ratio of the minimum wage over the median wage. The data are provided by the OECD since 1960 but only for countries with a statutory minimum wages. For other countries, we rely on the data collected by Neumark and Wascher (2003) over the same period. The global indicator *minwage* is defined as the composite of the two enforcement and level indicators. All sub-indexes and indicators are constructed so that higher values correspond to more stringent legislation or higher level of minimum wages. Regarding union density, the data are more common and we directly draw upon the OECD database which reports the cross-country evolution of union memberships since 1960.

The main explanatory variable of interest is the inherited part of social attitudes which are exogenous to contemporaneous national institutions. In lines with our identification strategy, we use for that purpose the inherited component of social attitudes by ethny of origins of second generation Americans estimated on the GSS. In order to gather as many observations as possible, we use the inherited social attitudes of Americans estimated on the two sub-periods 1977-85 and 1995-2004 as explained previously. Accordingly, the data for the dependent variable and the other controls are taken as average over the two corresponding periods.

Naturally, there is already an overwhelming list of variables proposed by the empirical literature to explain the determinants of institutions and labor market performance. Following Blanchflower recent synthesis (2006) on labor unions, we include the evolution of skills (measured by Barro and Lee index on the average years of education) and the political environment represented by the percentage of seats controlled by leftists in the government[13].

Regarding labor market performance, we look at two different measures. In lines with the model, the first indicator is the level of employment rate. Especially we focus on the employment rate of young worker aged 16-24 years since this category has been found to be the most affected by minimum wage legislations (see Neumark and Waschers, 2003). But we also report the results on the unemployment rate for the sake of comparison with the extensive previous literature which has probed into the roots of cross-country heterogeneity in unemployment rates. To put forward the specific contribution of social attitudes, we take account of the long list of labor market institutions considered so far by drawing on Nickell et al. (2005) and Blanchard and Wolfers (2001) data. The list includes the replacement rate and duration of unemployment benefit, employment protection, and taxes. Eventually we take into account the business cycle environment captured by the growth rate of GDP taken in US 1995 dollars. Naturally, a lot of other explanatory variables might be relevant for explaining. We thus control for country fixed effects to capture other specific national features. We also introduce time period dummies to

[13]The data are provided by Duane Swank http://www.marquette.edu/polisci/Swank.htm

control for aggregate shocks.

By grouping the two sub-periods together, we end-up with a sample of 34 observations. Note that we have informations on inherited social attitudes for potentially 40 OECD observations. But we cannot use observations on minimum wage legislation and union density for the early 1980's for the three Estearn European countries since they were under a communist regime and for Greece, Mexico and Finland due to missing data.

3.4.2 Results

Table 2 reports the basic GLS estimates of the effects of social attitudes on minimum wage legislation and union density. The main explanatory variable consists of inherited social attitudes and corresponds to the (marginal) fixed effect of the country of origins on social attitudes relatively to Swedish's origins. Note that there are two kinds of information in cross-sectional time-series data: the cross-sectional information reflected in the differences between countries, and the time-series or within-country information reflected in the changes within country over time. We thus report two specifications with or without country fixed effects, the regression controlling for fixed effects reporting the specific within effect.

Table 2 first shows that cooperative attitudes cooperation have a strong positive impact on union density while they steadily decrease the minimum wage enforcement index. Columns (1) and (3) report the cross-country estimates without fixed effects. It turns out that a one percentage point difference in inherited social attitudes relatively to Swedish origins is associated with a cross-country gap in union density by 0.607 percent and a decrease in the stringency of the minimum wage legislation by 0.345 percent. These effects are statistically significant at the 1% or 5% level. Table 2, Col. (2) and (4), which include country and period dummies show that a one percent rise in inherited cooperative attitudes relatively to that of Swedish inherited cooperative attitudes leads to a 0.268 percent increase in union density and a 0.261 percent decrease in the minimum wage legislation. Accordingly, social attitudes play a key role in cross-country differences in minimum wage and union density both in a static and in a dynamic perspective.

Eventually, Table 2, Col. (3) and (6) provides a complementary illustration of the influence of social attitudes on wage-setting institutions. In this case, we instrument the average level of trust in the country of residency calculated on the WVS database by the inherited component of trust of Americans estimated on the GSS database. Table 2, Col. (3) and (6) shows that this assumption yield estimated effects of trust which are still significant at the 1 percent level and whose magnitude are of the same order than the previous specification. This result provides support to the robustness of our causal link from cooperative attitudes towards wage-setting

institutions whatever the specification at stakes.

Table 2: Social attitudes and labor market institutions. Period: 1975-2002

Dependent variable	Minimum Wage			Union density		
	(1)	(2)	(3) IV	(4)	(5)	(6) IV
Inherited social attitudes	-.345**	-.261**	-.355**	.607**	.268***	.471***
	(.176)	(.110)	(.175)	(.275)	(.096)	(.152)
Education	-.040***	-.207***	-.152***	.022	.009	.016
	(.006)	(.057)	(.040)	(.018)	(.017)	(.017)
GDP growth	-.003	-.012	.002	.005	-.005	-.009
	(.011)	(.009)	(.008)	(.018)	(.008)	(.009)
Share of leftist seats	.415***	.266**	.024**	.148	-.362***	-.292**
in government	(.131)	(.126)	(.122)	(.221)	(.137)	(.134)
Fixed Effects	No	Yes***	Yes***	No	Yes***	Yes***
Period effects	No	Yes***	Yes***	No	Yes***	Yes***
Observations	34	34	34	34	34	34

A natural question arises concerning the implied impact of social attitudes on employment patterns, including the employment rate of young workers and the unemployment rate. As a starting point, we draw upon the previous literature by estimating the correlation between labor market institutions and unemployment. Table 3 - Col. (1) reports traditional GLS estimates of the role of replacement rate, benefit duration, union density, union coverage, the tax wedge and employment protection. As expected (see Blanchard, 2005) none of these institutions are statistically significant in explaining neither the cross-country heterogeneity in labor market performances (Col. (1) without country fixed effects) nor the within evolution of employment patterns when country fixed effects are taken into account (not reported). The fit is really poor, and these institutions are likely to be endogenous as regards the evolution of the unemployment pattern.

This picture changes dramatically when inherited social attitudes are included. Table 3 - Col. (2) first reports the GLS estimates of wage-setting institutions when we use inherited social attitudes instead of the traditional union density indicator or minimum wage legislation indicator. The GLS estimated effect of inherited social attitudes is significant at the 5 percent level, an increase of one percentage point relatively to inherited Swedish social attitudes leading to a .097 percentage point decrease in the unemployment rate. It turns out that inherited social attitudes is the only variable which is statically significant in explaining cross-country heterogeneity in unemployment rate. This result suggests that the aggregate indicators currently used by the literature miss an important point in capturing the wage-setting process.

Eventually Table 3 - Col. (3) and (4) shows that the same picture holds when one looks at

the within evolution of labor market performance by including country fixed effects using either the inherited attitudes of people living in the US as a proxy for inherited attitutes of people living in OECD countries (Col (3)) or the intrumental variable method (Col (4)). A positive change in inherited cooperative attitudes leads to a statistically significant decrease in the unemployment rate. Conversely, an increase of one percentage point relatively to Swedish inherited cooperative attitudes increases by .11 percent the employment rate of the young workers. By contrast, traditional institutions are not statistically significant or have a sign which is hardly interpretable, such as the variables unemployment benefit and unemployment duration which are found to decrease both the unemployment rate and the employment rate of young workers. These results yield a converging picture on the robustness of our estimated effect of inherited cooperative attitudes on employment patterns by comparison with traditional institutions which are fraught with reverse causality.

Table 3: Social attitudes employment and unemployment rates. Period: 1975-2002

Dep variable	Unemployment rate				Emp rate	
	(1)	(2)	(3)	(4) IV	(5)	(6) IV
Inherited social attitudes		-.097**	-.092**	-.171**	.189***	.147**
		(.048)	(.037)	(.061)	(.073)	(.082)
Union density (0-1)	-.012					
	(.038)					
Minimum wage index (0-1)	.017					
	(.060)					
Employment protection	-.002	-.010	.014	-.000	.007	.003
	(.012)	(.011)	(.033)	(.030)	(.049)	(.042)
Replacement rate	.037	.051	.039	.007	-.151**	-.201***
	(.033)	(.031)	(.033)	(.037)	(.094)	(.057)
Benefit duration	-.007	-.014	-.118***	-.118***	-.177***	-.161**
	(.026)	(.022)	(.041)	(.041)	(.072)	(.062)
Tax wedge	.043	.011	.288	.342	.217	.224
	(.054)	(.050)	(.094)	(.096)	(.176)	(.158)
Fixed Effects	No	No	Yes***	Yes***	Yes***	Yes***
Period effects	No	No	Yes***	Yes***	Yes***	Yes***
Observations	34	34	34	34	34	34

4 Conclusion

Our paper suggests that cross country differences in labor market institutions and performance are rooted in cross country differences in social attitudes. Although social attitudes exhibit a strong inertia because they are passed on, to a large extent, from generations to generations,

social attitudes are themselves influenced, in the long run, by institutions and economic performance.

These findings are not only important to understand cross country differences in labor market institutions and performance. They are also very important to think about labor market reforms. For instance, stringent minimum wage legislations found in some countries, which are often criticized as a source of labor market rigidity, might merely be the consequence of the lack of prosocial behavior. In this context, reforms that reduce the minimum wage might worsen labor market efficiency, at least in the short run, if social attitudes exhibit important inertia. On the other hand, such reforms might have positive long run effects once their impact on social attitudes is accounted for. We still know very little on these issues. Our paper shows that it is worth knowing more, because social attitudes do seem to exert a significant influence on labor market performance. Accordingly, labor market reforms should be thought in a broad framework that accounts for interactions between labor market institutions, labor market performance and social attitudes.

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A Appendix

A.1 Descriptive statistics

Table 4 reports the number of observations for the sample of working aged individuals by country of residency (WVS databse) and country of origins (GSS databse). Note that in the case of the country of origins, we only select Americans whose all grandparents were not born in the United States.

Table 4: Observations by Country of origins and Country of residency

Country of residency / Ethny of origins in US	Obs. by country WVS	Obs. by country ISSP	Obs. by country of origins GSS
Australia	3652	916	
Austria	2452	812	55
Belgium	3577		10
Canada	3710	889	138
Czech Republic	847	1025	71
Denmark	2236	870	33
Finland	2173		21
France	2836	949	32
Germany	3347	812	305
Greece	1013		36
Hungary	833	733	51
Ireland	1967	817	138
Italy	3867	848	313
Japan	3592	1134	35
Mexico	5098	1421	258
Netherlands	2086	1750	44
Norway	3809	1335	55
Poland	1718	926	176
Portugal	1706	986	23
Spain	7236	2047	72
Sweden	3061	1029	54
Turkey	6151		
United Kingdom	2160	630	287
United States	5046	1083	Reference

Table 5: Summary statistics for individual characteristics

Variables	WVS		ISSP		GSS	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Men	.48	.49	.46	.49	.44	.49
Age	38.42	13.28	39.64	13.25	39.56	12.78
Age education	18.25	4.08	12.64	4.08	12.90	2.89
Low-income	.47	.49	.47	.49	.53	.49
Mid-income	.28	.44	.43	.49	.43	.49
Up-income	.25	43	.09	.29	.03	.17
Employed	.66	.45	.68	.49	.68	.46
Unemployed	.08	.27	.05	.20	.04	.18
Inactive	.28	.45	.27	.47	.25	.43
Left	.45	.49	.40	.49		
Catholics	.44	.49	.41	.49	.25	.43
Protestants	.24	.43	.25	.43	.59	.49
Muslims	.08	.27	.01	.04	.00	.03
Jews	.01	.06	.01	.04	.02	.13
Buddhists	.02	.14	.01	.13	.00	.04
Others	.05	.16	.03	.17		
No religion	.14	.35	.27	.44	.10	.29

A.2 Minimum wage regulations

The data on minimum wages come from the OECD database and the International Labor Organization (ILO). The OECD database provides information on the different relative levels of minimum wages, while the ILO provides detailed description of the procedures through which minimum wages are implemented. We want to measure the extent to which the minimum wage is a constraint that binds on decentralized wage bargaining. For that purpose, we construct indicators of the degree of enforcement of the minimum wage which are based on three criteria.

1. The extent to which minimum wages are directly set by law or by collectively agreed minimum wages negotiated between social partners. Column 2 of tables 6 and 7 indicates whether wage floors are set by statutory rules defined by the law or by collective negotiation. Column 3 of tables 6 and 7 indicates the coverage of the minimum wage. This coverage is equal to one when the minimum wage is set by law. However, it can be smaller than one when there are no statutory minimum wages. In some countries the wage floor negotiated at the sectorial level only applies to unionized workers, but it is automatically extended to all workers in the other countries. As a matter of fact, the coverage rates of collectively agreed minimum wage reach 70 percent in Norway, 80 percent in Sweden 81 percent in Denmark while they are equal to 99 percent in Austria and

Italy. Eventually, almost all Anglo-Saxon countries have a statutory minimum wage. The United States recognized a statutory wage floor in 1938 by the Fair Act while United Kingdom established a national minimum wage in 1999 after having abolished the system of Wage Councils in 1993.

Table 6: Statutory and negotiated minimum wage systems in OECD countries. Source: ILO.

	Determination	Coverage
Australia	Statutory Provincial level	1
Austria	Negotiation National extension	0.99
Belgium	Negotiation National level	1
Canada	Statutory Federal and provincial levels	1
Czr	Statutory National level	1
Denmark	Negotiation Industry level	0.8-0.9
Finland	Negotiation Industry level	0.9
France	Statutory National level	1
Germany	Negotiation National extension	0.7
Greece	Statutory National level	1
Hg	Statutory National level	1
Italy	Negotiation National extension	1

2. The level of the wage setting and the dispersion across regions, sectors or occupations. The second column of tables 8 and 9 indicates whether the minimum wage is set at the national level. It shows that most countries with a statutory minimum wage opt to set a single wage at the national level. Exceptions are Canada and the United States which set minimum wages at both the federal and the regional level. In the United States, seven states set minimum wages above the Federal State. Some States, mainly in the South, do not implement the Federal law. In Canada, each province set its own minimum wage, leading to a wide gap in statutory minimum wage. In Japan, the minimum wage is set at the prefecture level, with some different wages for different industries in

Table 7: Statutory and negotiated minimum wage systems in OECD countries at the end of the 90's. Source: ILO.

	Determination	Coverage
Japan	Statutory Prefectures	1
Mexico	Statutory National, 3 States	1
Netherlands	Statutory National	1
Norway	Negotiation Industry level	0.7
Poland	Statutory National	1
Portugal	Statutory National	1
Spain	Statutory National	1
Sweden	Negotiation Industry level	1
Turkey	Statutory National	1
Uk	Negotiation, industries Statutory, 1999	1
Usa	Statutory Federal, States	1

a given prefecture. Mexico lies in between, the minimum wage being set at the regional level, but with only three broad regions and a quite narrow gap between different regional levels.

Table 8: The level of the wage setting and the exisitence of subminimum by age at the end of the 90's. Source: ILO.

	Variations by:	Subminimum
Australia	Industries,Regions Occupation, Age	
Austria	Industries Occupation, Age	No
Belgium	Age	20:94%, 19: 88%, 18: 82% 17: 76%, <17: 70%
Canada	Industries, regions occupations	No
Czr	Occupation	No
Denmark	Industry, Age	<18: 40%
Finland	Industries, Age, Occupations	No
France	Age	17: 90%, <17: 80%
Germany	Region, Age, Qualifications	Trainees
Greece	Age, Marital status Qualifications	No
Hg	No	No
Italy	Industry, Age	Trainees

3. The existence of sub-minimum rates for young workers and trainees reported in tables 8 and 9. Such sub-minimum rates are quite common in OECD countries since they concern around half of them. Countries which exclude such provision are: Czech Republic, Greece, Hungary, Japan and Mexico. But significant differences exist among countries authorizing sub-minimum wage provisions. The first difference lies in the range of ages covered by the provision. Basically provisions would extend until 24 years old in Sweden or 22 years in Netherlands while such reductions are permitted only for worker younger than 17 years in France and 18 years in Ireland. The second difference is the extent of reductions. United-Kingdom stands as a polar case with no minimum wage for people younger than 21 years. The Netherlands accepts a reduction up to 40 percent of standard minimum wage at 17 years old while the wage floor is set at 80 percent of the standard minim wage in France or Spain for this age.

Table 9: The level of the wage setting and the dispersion across regions, sectors or occupations at the end of the 90's. Source: ILO.

	Variations by:	Subminimum
Japan	Industry, Age Occupation	No
Mexico	No	No
Netherlands	Age	22: 85%, 21: 72,5%, 20: 61,5%, 19: 52,5%, 18: 45,5%, 17: 39,5%, 16:34,5%, 15: 30%
Norway	Industry, age occupation	
Poland	No	No
Portugal	Age	<18: 75%
Spain	Age	<18: 89%, No reduction 1998
Sweden	Industry, Age, Occupation	<24: 89%
Turkey	Age	<16: 85%
Uk	Industry,Age	<21: 0%, Change in 19999
Usa	Age, Job tenure	No

To capture the strictness of the law enforcement, we calculate 3 sub-indexes corresponding to the previous criteria. The first sub-index is equal to 1 if there is a statutory minimum wage, 0.5 if the minimum wage is bargained by unions but extended by law at non-union workers and 0 otherwise. The second sub-index measures potential level dispersion across industries, region, job-tenure or occupation. The sub-index is equal to 0 if the minimum wage is allowed to differ along at least three dimensions, 0.33 for two types of distinctions, 0.67 for one type of distinction and 1 if any level dispersion in the country is forbidden. The third sub-index measures the different sub-minimum rates. This indicator is equal to one if there is no provision at all for sub-minimum wages, 0.5 if the special rates only apply for people younger than 18 years old or if the derogation is less than half the official minimum wage, and 0 if the subminimum can be extended for people older than eighteen or/and if the special rates is lower than 50 percent of the standard wage floor.

We then calculate a composite index on the minimum wage enforcement, *minwage_enforcement*, by taking the average of the previous sub-indexes. We also take into account the level of the minim wages by the indicator *minwage_level* calculated as the ratio of the minim wage over the mean wage. The values are provided by the OECD database for countries with a statutory minimum wage and are completed with Neumark and Wascher (2003) for other countries. The global indicator *minwage* is defined as the average of the two enforcement and level indicators.

A.3 Social attitudes

Table 10: Attitudes towards social cooperation in the US

Dependent variable	Trust in other=1		People try to be fair=1	
	Coeff	Std Error	Coeff	Std Error
Country dummies	Yes***			
Male	.084***	(.025)	-.105***	(.029)
Age	.034***	(.006)	.035***	(.007)
Age2	-.000***	(.000)	-.000***	(.000)
Education	.098***	(.005)	.075***	(.006)
Mother's education	.022***	(.005)	.030***	(.007)
Father's education	-.006	(.004)	-.007	(.005)
Employed	Reference			
Unemployed	-.088	(.071)	-.133	(.084)
Inactive	-.016	(.030)	-.019	(.036)
Income: mid	Reference			
Low	-.209***	(.026)	-.235***	(.030)
High	.055	(.073)	.084	(.090)
Political orientation Center	Reference			
Democrat	.059**	(.029)	.032	(.034)
Republican	-.000	(.030)	.043	(.035)
Religious affiliation: No religion	Reference			
Catholic	.033	(.046)	.139***	(.052)
Protestant	.020	(.043)	.077	(.048)
Buddhist	-.109	(.384)		
Jews	-.048	(.124)	.065	.150
Pseudo-R^2	.0719		.0549	
Observations	2178		2109	

General Social Survey: ***:1%, **: 5%, *: 10%

Table 11: Social attitudes in OECD countries

Dependent variable	Trust in other=1		People try to be fair=1	
	Coeff	Std Error	Coeff	Std Error
Country dummies		Yes***		
Male	.013	(.014)	-.183***	(.055)
Age	.009***	(.002)	.063***	(.019)
Age2	-.000***	(.000)	-.000***	(.000)
Education	.076***	(.028)	.039***	(.008)
Employed		Reference		
Unemployed	-.090	(.076)	-.140	(.139)
Inactive	-.012	(.020)	.107	(.070)
Income: mid		Reference		
Low	-.071***	(.018)	-.148**	(.060)
High	.110***	(.018)	.200**	(.096)
Political orientation: Center		Reference		
Left	.125***	(.017)	-.034	(.067)
Right	.015	(.016)	-.065	(.076)
Religious affiliation: No_religion		Reference		
Catholic	-.064***	(.023)	.022	(.077)
Protestant	.070**	(.029)	.084	(.090)
Buddhist	-.047	(.067)	-.101	(.342)
Muslim	-.128	(.105)		
Jews	.337***	(.115)		
Other_religion	.018	(.053)	.086	(.162)
Pseudo-R^2	.078		.1476	
Observations	35943		15910	
***:1%, **: 5%, *: 10%	WVS 1981, 1990, 2000		ISSP 1998	

Figure 7: Evolution of wage-setting institutions