

# Windows of Opportunity?

## New Evidence on the Political Economy of Reforms in OECD Countries

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### Abstract

We reassess the determinants of market liberalization processes in OECD countries. In a first part, we develop a theoretical framework, embedding psychological expected utility. The framework is used to analyze when governments are more susceptible to engineer reforms. The validity of the model is then empirically assessed, using data for the 1990-2013 period. The results tend to support the theoretical predictions. However, they reveal that the ideological divide about liberalization is less prevalent than former empirical evidence showed.

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# 1 Introduction

Where do reforms come from? More precisely, when is a government more enticed to implement structural reforms? Given that a structural reform, of any productive sector, induces a redistribution of existing (or potential) gains from the stakeholders benefiting from the pre-reform situation to other categories of agents (be they the government itself - through increased revenues, for example, consumers or competitors, especially new entrants), they will of course be opposed by the incumbents.

Barriers to the implementation of (overall beneficial) reforms mostly come from their distributional implications: their immediate upfront costs are borne by politicians (Tandon, 2012), the incumbents will suffer from the reform, while their benefits are spread unevenly across the population, and may take time to arise significantly. As a consequence, some simple discounting can explain that policy-makers procrastinate (Vogel, 2016) and will prefer to wait for “the right moment” before implementing a reform. However, identifying this right moment, or window of opportunity, is not that easy, as it will probably emerge from a combination of elements, among which the electoral cycle, the power of entrenched situations, and the possibility of compensating the losers from the consequences of the reform.

According to a first popular hypothesis, structural reforms are implemented first and foremost by governments following their own ideological agenda. As such, reforms should occur when new governments take office and / or when governments are strong (Bowen et al., 2016), and there should be strong differences among the partisan spectrum. Potrafke (2010) has tested how government ideology has influenced deregulation of product markets in OECD countries. He analyzes a dataset of non-manufacturing regulation indicators covering energy, transport and communication industries in 21 OECD countries over the 1980–2003 period and employs two different indices of government ideology. The results suggest that government ideology has a strong influence on the deregulation process, as market-oriented governments promote the deregulation of the energy, transport and communication industries. Hence, he identifies remarkable differences between leftist and right-wing governments. However, not only the probability of a successful reform may be larger under a left-wing government than under a right-wing one (as the coalition of politicians will be larger in the first case, as right-wing politicians will also support the reform), as Beazer and Woo (2016) show for IMF conditional programs, but the division line between left and right may be blurred by spillovers, as waves of reforms may be implemented between neighboring countries, as Fidrmuc and Karaja (2013) show.

A second popular hypothesis is that “crisis begets reforms”. In other words, governments profit from a crisis situation to enforce a sweeping program of reforms (Ranciere and Tornell, 2015). For instance, Alesina et al. (2006) finds that fiscal reforms are more likely to occur during times

of inflationary and budgetary crisis, when gaining time is no longer an option. Agnello et al. (2015) test the same hypothesis and show that external debt crises are the main trigger of financial and banking reforms, while banking crises are key drivers of external capital account and financial reforms. However, there may be an endogeneity issue here if, as signaled by Rodrik (1996), a crisis is simply an indicator of a big policy failure. A typical case in point is when reforms are enforced upon a country as a way to obtain a credit from the IMF, for example. The issue is itself blurred by the possibility that “there is no situation so bad that it cannot get worse” (Toye, 1994). Moreover, taking into account the proclivity of politicians to stick to inefficient decisions, it is by no means clear that governments would be more inclined to revise their policies to cope with an economic crisis than otherwise (Dur, 2001).

However, the opposite hypothesis can be proposed: as private sector adjustment to policy reforms is frequently connected with substantial cost, governments may have a higher propensity to undertake the required policy revisions under good economic conditions than under bad circumstances. This hypothesis is notably proposed by Pitlik and Wirth (2003).

Since these hypotheses have been proposed and assessed, however, the trend of deregulation has been pursued in OECD countries. In some countries and sectors, much of what a reform could mean has been implemented, with few measures needed sometimes to end up the deregulation process. This raises the question of the enduring validity of the most popular hypotheses put forward by the literature. As a consequence, in this paper, our objective is to have a fresh look at the data, to reappraise the value of the several hypotheses that have been put forward in the literature. We empirically assess if the windows of opportunity for reform are still depending on ideological divisions, on growth prospects, or on other, more structural, determinants (such as the weight of vested interests, or of the trade unions).

Our contribution to the literature is thus two-fold. First, we provide a theoretical model that allows analyzing the incentives of a government to confront the rent-holders (i.e., the agents that benefit from the status quo, and would lose from the reform). Our innovation here is that we build on the literature on psychological expected utility, to include the subjective element in a government’s decision to engage in a reform. Second, we empirically test the determinants of reforms, making use of the aggregate indicator of reforms built by the OECD, as is standard in the literature, which we update by covering up to 10 more years of data. Moreover, as our sample goes up to 2013, it covers the great financial crisis, allowing to check if a large recession reduces the incentives to reform. All in all, our results provide support to the theory: reforms depend on the strength of the vested interests and, when the deregulation process has been strong, ideological divisions tend to matter much less than generally postulated and estimated in the literature.

The remainder of the paper is thus organized as follows: Section 2 introduces the theoretical model. Section 3 describes the dataset. Section 4 tests the empirical accuracy of the model and presents the results, while Section 5 concludes.

## 2 Theory

### 2.1 Assumptions

We build on Minozzi (2013) model of conflict between countries under psychological expected utility<sup>1</sup>, which we modify and adapt to our context. The introduction of the psychological expected utility means that agents will compute subjective pay-offs that will include two terms, the objective one, and a subjective one. The latter will be weighted by a parameter,  $\delta$ , measuring the importance of the subjective part in an agent’s reasoning (Caplin and Leahy, 2001).

Here, we consider a conflict arising between a government, wanting to implement a reform, and those who oppose the reform, as it would reduce their rents. The government thus opposes the representatives of vested interests, be they lobbies or pressure groups. A typical example is a sector- or labor-market reform opposed by trade unions, on the basis of the defense of the status quo, whatever the merits of the proposed reform. For ease of exposition, we will refer to the opposing group(s) as the union.

Confrontations between a reform-oriented government and the opposing union can end-up in three types of outcomes: (i) the government refrains from reforming, as it sees the opposition’s rising and is afraid of a conflict that may generate too high losses (if only in electoral terms), (ii) the government and the union find a common ground, and a modified (i.e., less ambitious) reform is implemented, (iii) the government wants to show its strength, and the conflict develops, up to the point where the reform is implemented (under its initial and ambitious form). Examples of each situation abound, and one can only cite a few. For the first situation (where the project is withdrawn), one can think of the Clinton health care plan (officially known as the Health Security Act, and unofficially as the “Hillary care”, after then-First Lady Hillary Clinton, in 1993). The second case is probably the more general one, and citing evidence would simply lead to a long list of acts and laws. The last case is rarer, but obvious examples are Margaret Thatcher’s 1984 conflict with the unions, concerned by a project to reduce their own power, and El Khomri law (or the Loi travail) to change the French labor code, which was forced through Parliament’s approval in 2016, in midst of public protests and trade unions’ opposition.

The model presented here intends allowing to analyze these situations, by considering a reform-

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<sup>1</sup>The concept of “psychological expected utility” has been proposed by Caplin and Leahy (2001). It is an extension of the Expected Utility theory to situations in which agents experience feelings of anticipation prior to the resolution of uncertainty. While Minozzi (2013) uses the term “endogenous beliefs”, it may be misleading, as the endogeneity of the beliefs is assumed, not demonstrated.

minded government,  $G$ , confronted with an opposing pressure group, or union,  $U$ . If implemented, the reform will cost  $x$  to the union. If the union is able to reject the reform, the status quo will prevail. However, if the government gets its way, then the reform proposal is transformed into law to be applied. This benefits the government, which gains  $(1 + \gamma)x$ , where  $\gamma$  ( $0 < \gamma < 1$ ) is a factor that transforms the gain from the reform in political support (say, electoral gains at the next election, popularity or support inside the Parliament). Inversely, in this case, the union will get  $1 - x$  (in other words, the rent which the reform intends to reduce is normalized to 1). This scenario may happen through an open conflict between the two agents. The government has to decide if it wants to act, or not. This decision will depend upon both the cost of the conflict,  $c$ , and the subjective probability made by each agent about the issue of the conflict.<sup>2</sup> Hence, the utility functions of the two agents are of the following type:  $G = G\left(r; \underset{+}{(1 + \gamma)x}; \underset{+}{c}; \underset{+}{\delta^G}\right)$ , and  $U = U\left(\underset{-}{1 - x}; \underset{-}{c}; \underset{+}{\delta^U}\right)$ , where  $r$  is the ego-rent value of being in power for the government.<sup>3</sup>

As in Minozzi (2013), the game has four steps. In the first step, the government proposes a reform, and each agent forms subjective probabilities of gaining the (potential) conflict,  $\hat{p}_G$  and  $\hat{p}_U$ . These subjective expected probabilities can be equal to, or different from, the objective ones (respectively,  $p_G$  and  $p_U$ , with  $p_U = 1 - p_G$ ). The second step is the one during which the game is played (the conflict, or the peaceful reform, takes place). Then, the two agents experience a pause before the outcome of the conflict becomes clear, during which they anticipate what may or may not happen. In the fourth step, finally, the outcomes are realized, and either the status quo or the reform prevails.

## 2.2 From status quo to reform, through conflict (or not)

First, let's signal that the status quo scenario emerges immediately, if  $\hat{p}_G < c$ . In this situation, the cost of conflict being superior to the expectation formed by the government about the solution of the conflict, the threat of reform will not be pursued credibly and, obviously, the game will stop (without reform).

Second, another scenario emerges when  $\hat{p}_G > c$  and  $\hat{p}_G + \hat{p}_U \leq 1 + 2c$ . The second condition means that at least one agent thinks he can gain the conflict, while the first ensures that the government will have an incentive to reform (and potentially enter in a conflict). Here, as we no longer have a probability of winning inferior to the cost of conflict, the government will decide to reform. For the union, rejecting the reform would deliver  $\hat{p}_U - c$  while, by accepting it, the union would get  $1 - x$ . Hence, the condition for the union to enter a conflict is simply:

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<sup>2</sup>In order to simplify the model, we consider that the cost of the reform is implicitly symmetric for the government and for unions. Even if there is a distinction of the reform's cost between the government and for union, this would not bring substantial changes to our results.

<sup>3</sup>It is important to keep in mind that all the components of the utility functions are normalized to 1.

$$1 - x < \hat{p}_U - c,$$

which means that the threshold level of reform proposed by the government would have to be:

$$x^T = 1 + c - \hat{p}_U, \quad (1)$$

where the superscript  $T$  indicates a threshold value. From the point of view of the union, then, any reform that would be superior to this threshold would force it into a conflict.

Considering now the situation from the government's perspective, it knows that, by proposing a threshold level of reform inferior to the acceptable threshold by unions, it will start a conflict and get  $\hat{p}_G - c$ . Otherwise, the government sets up a conflict if the costs to confront with the opposition are superior to the government's gain at the threshold level acceptable by unions. Proposing a reform inferior to  $x^T$ , the government gets a payoff equal to  $(1 + \gamma)x$ . Hence, the condition to enter a conflict is, for the government:

$$\hat{p}_G - c > (1 + \gamma)x^T = (1 + \gamma)(1 + c - \hat{p}_U),$$

or:

$$\hat{p}_G > (1 + \gamma)(1 - \hat{p}_U) + (2 + \gamma)c. \quad (2)$$

Given that, by assumption, in this case we have  $\hat{p}_G + \hat{p}_U \leq 1 + 2c$ , the above condition can only be filled if  $\hat{p}_U > 1 + c$ . The fulfilment of this condition would however require the government's expectation to be such that  $\hat{p}_G < c$ . This would bring us back to the status quo case. Hence, just like in Minozzi (2013), the two agents reach a "settlement" zone, where they have an interest in avoiding the conflict, and all the incentives to reach a mid-point in the bargaining process.

A third scenario is when the beliefs verify  $\hat{p}_G + \hat{p}_U > 1 + 2c$  (i.e., de facto, we have  $\hat{p}_i > 2c$ , with  $i = G, U$ ). That is, both agents may think, simultaneously, that they will win the conflict.<sup>4</sup> As we have  $\hat{p}_U^{MAX} = 1$ , it means that the condition  $\hat{p}_G > c$  is fulfilled, meaning that the government will take action and propose a reform (i.e., status quo is not an option here). In this case, the union's behavior is the same as in the previous (thus leading to  $x^T = 1 + c - \hat{p}_U$ ). However, here, the government will prefer the conflict to a cautious (that is, a piece-meal type of) reform, and the proposal made will be of a reform level superior to the union's acceptable threshold,  $x^C > x^T$ . The government has to decide if it is worth entering into a conflict, by comparing the extra gain obtained by the reform with the cost of the conflict:

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<sup>4</sup>Of course, objective probabilities rule this out, differently from subjective ones. A direct analogy is with sports: while objectively only one team (or player) can carry a game, both teams enter the game thinking they will win it (otherwise, one of the teams should not even show up).

$$(1 + \gamma)(x^C - x^T) > c.$$

The condition will be filled if:

$$x^C > 1 + c \frac{2 + \gamma}{1 + \gamma} - \hat{p}_U. \quad (3)$$

Supposing that we have  $\hat{p}_U^{MAX} = 1$ , the condition boils down to  $x^C > c \frac{2 + \gamma}{1 + \gamma}$ . Hence, in this case, the reform proposed by the government is relatively important, being larger than the cost of the conflict (as  $\frac{2 + \gamma}{1 + \gamma} > 1$ , we know that  $c \frac{2 + \gamma}{1 + \gamma} > c$ ). In this case, the political gains weight strongly in the government's decision to oppose the union.

### 2.3 Enlarging the window of opportunity

As reforms threaten vested interests, one way for governments to increase their probability of reforming is by compensating losers. This means, in our setting, that the government reduces the losses of the union by adding a transfer. In this case, the union will get  $1 - x + t$ , where  $t$  is the transfer. It immediately appears that the transfer will lower the threshold value of the reform acceptable by the union. Equation (1) becomes:

$$x^T = 1 + c - \hat{p}_U + t, \quad (4)$$

and reforms will be more easily implemented. The government even has to be less optimistic, that means that the probabilities to win the conflict (respectively  $\hat{p}_U$  and  $\hat{p}_G$ ) are not independent from the level of reform ( $x$ ).

The condition to enter a conflict is reduced by the transfer (we have:  $\hat{p}_G > (1 + \gamma)(1 - \hat{p}_U - t) + (2 + \gamma)c$ ). In the last case, too, the government will appear less provocative, as we would now have:

$$x^C > x^{C|t} = 1 + c \frac{2 + \gamma}{1 + \gamma} - \hat{p}_U - t, \quad (5)$$

where  $x^{C|t}$  is the proposal under the transfer scheme.

Of course, if the conflict is less costly for the government, then not only incentives to reform will be stronger, but the window of opportunity for reforming will be larger. This is the case if the government can forecast a path of positive growth rates, for example. This would not only reduce the cost of the reform indirectly (by enlarging the prospects to be able to compensate the losers from the change), but also directly, as it would ease the burden of the compensation for the public finance.

In our framework, this can be formally represented by the following adjustment:  $c = c(g^e)$ . That is, the cost of the reform negatively depends on the expected growth rate of the economy ( $g^e$ ), which is signaled by the negative sign under the functional form. In this case, even though the situation could be asymmetric, with the union's position unaffected by the forecasts (meaning that positive forecasts for the economy would not affect the union's threshold), it appears (from equation (2)) that the government would need to form less optimistic expectations to bring a reform, independently of the strength of the unions. Looking at equation (3), it also appears that positive forecasts would reduce the reform level needed for the government to start a conflict with the union. Another interesting interpretation of this equation is that the positive forecasts would reduce the weight of the electoral gains (as  $\gamma$  and  $c(g^e)$  would have opposite effects on  $x^C$ ). In other words, the government could be in a less favorable position (for example, its win-margin or popularity could be lower), and nevertheless be able to get reforms implemented.

## 2.4 What happens when there's nothing left to bargain for?

Now, suppose that the government has been able to go through several episodes of reforms, and that the union's rents have been strongly reduced. Assume that its reference value (here, defined equal to 1) has been diminished by an arbitrary amount, say  $\theta$ . The new value is thus now equal to  $\overline{1 - \theta}$ . Now, the reference condition for a conflict, equation (3), becomes:

$$x^{C(\theta)} > 1 + c \left[ \frac{1 + (\overline{1 - \theta}) + \gamma}{(\overline{1 - \theta}) + \gamma} \right] - p\hat{U}. \quad (6)$$

where  $x^{C(\theta)}$  denotes the value of the reform that would start a conflict after the rent has been reduced. After several bouts of reform, the value of  $\theta$  is probably close to 1. Let's denote the right-hand side term  $A$ . Its limit when  $\theta$  tends towards 1 is equal to:  $\lim_{\theta \rightarrow 1} A = 1 - c \frac{1+\gamma}{\gamma} - p\hat{U}$ . This limit is superior to the previous conflict value ( $x^{C(\theta)} < x^C$ ), and even more so as  $\gamma$  will be small. In other words, it is when there is nothing left to bargain, that the government would be able to implement the most drastic reform without fearing the union's opposition. Interestingly, this is even truer when the political gains to be accrued from the reform are small ( $\gamma$  being close to 0). The interpretation of this result is that, even with a small incentive, the government would be able to implement a reform, as the union has already lost a lot and is no longer in a position to oppose the government's plans. Although the model does not consider differences in the politician's ideology, this particular result would stand whatever the political leaning of the government. Hence, when most of the deregulation has already been implemented, the ideological divide should no longer be a strong determinant of the reform process.

In the next section, we check the empirical relevance of the model.



### 3 Data

In order to assess to what extent the unions can influence the probability to implement or to refrain reforms, we constructed a time-series cross-sectional dataset that includes annual data for 18 OECD countries<sup>5</sup> over the period 1990-2013. Over this period, our database forms a balanced panel.

#### 3.1 Dependent variable: A measure of reform

The dependent variable is built from the Regulation in Energy, Transport and Communications (ETCR) indicators of the OECD database.<sup>6</sup> ETCR indicators are computed every year and available since 1975 (however, limitations related to a number of independent variables forces us to start our analysis in 1990). As the name suggests, ETCR indicators measure the regulatory restrictions in Energy, Transport and Communication. These 3 sectors in turn are subdivided in 7 non-manufacturing industries: gas, electricity, post services and telecommunications, air passenger transport, rail transport and road freight (see, e.g., Conway and Nicoletti, 2006).<sup>7</sup>

The ETCR indicators take into account 2 main dimensions: barriers to entry and public ownership. For this empirical analysis, we focus on the “ETCR aggregate” indicator which is the average indicator for the 7 industries enunciated above. The ETCR aggregate is an indicator which ranges between 0 and 6, with the highest degree of market regulation being 6, while 0 correspond to the lowest level of regulation (complete liberalization). Descriptive statistics provided in Table 1 show that the average of the aggregate ETCR is 3.2 with a standard deviation of 1.2.

Figures 1 and 2 illustrate an issue with the data: given that there has been an impetus given to reforms over the period under study (if only by international institutions, like the IMF, the OECD or the EU, who have repeatedly argued in favor of such reforms), there has been a tendency to deregulate. As a consequence, there is a general downward trend of the ETCR indicator for all the OECD countries. Up to 1995, we notice that most of countries had a high level of ETCR (closed to 6 in general) but, since, they have experimented a relatively strong deregulation of the sectors under review. However, as can be seen from Figure 2, the downward trend has not been linear. This means that the downward trend has to be dealt with properly in the empirical strategy, which will have to take into account the non-linearity that goes with it. Otherwise, panel data unit root tests show that the dependent variable series is stationary.

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<sup>5</sup>Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.

<sup>6</sup>See <http://stats.oecd.org/>.

<sup>7</sup>The OECD also provides a measure of Product Market Regulation (PMR), which is however provided every 5 years. The use of the PMR indicators would thus dramatically reduce the number of observations. Nevertheless, the two indicators are strongly - positively - correlated (with a coefficient equal to 0.75).

From the ETCR aggregate indicator, we derive our dependent variable. In conformity with the literature and the definition of the index, we will call “reform” any change in regulation that corresponds to a form a liberalization. Thus, the main variable is a binary variable coded “1”, if there is deregulation from year  $t - 1$  to year  $t$ , i.e, if the difference between the aggregate ETCR between two successive years is negative. Thus, we have:

$$Reform_{j,t} = 1 \text{ if } ETCR_{j,t} - ETCR_{j,t-1} < 0. \quad (7)$$

Table 1 shows that approximately 85% of the observations correspond to a reform of the included sectors over the considered period, which confirms the visual description displayed in Figure 2.

Table 1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Reform	321	.857	.351	0	1
Aggregate ETCR	321	3.227	1.187	1.275	5.916
Union density	321	37.968	18.953	12.5	87.4
Total social expenditure	321	22.566	4.905	11.3	36
Population over 65	321	15.64	2.469	10.8	23.3
Unemployment rate	321	7.313	3.581	.421	22
Herding	321	-.044	.679	-1.674	1.765
Inflation	321	2.691	2.611	-4.5	20.4
Deficit	321	-2.25	5.125	-32.554	18.696
Openness of the economy	321	74.333	35.602	15.924	187.849
Cabinet composition	321	2.526	1.553	1	5
GDP growth forecast fall date t, IMF	321	1.98	2.047	-7.5	8.743
GDP growth forecast fall date t+1, IMF	321	2.396	1.215	-2.5	7.048
GDP growth forecast fall date t+2, IMF	321	2.678	.922	.34	6.378
GDP growth forecast fall date t+3, IMF	321	2.734	.877	.4	6.115

### 3.2 Independent variables

Except when explicitly stated otherwise, all the independent variables are retrieved from the OECD database (see Table 1 for the descriptive statistics).

Our set of control variables includes the economic ones, namely: the unemployment rate (in percentage of civilian labor force), the total social expenditure (public and mandatory private, in percentage of GDP), the inflation rate (growth rate of the Consumer Price Index), the budget deficit (in percentage of GDP) and the openness of the economy (sum of imports and exports divided by the GDP). This set of economic variables aims at controlling for the identification of economic situations and contexts that can bring about reform and are standardly used in the literature (see, e.g., Rodrik, 1996, Potrafke, 2010, or Reinhart and Rogoff, 2011). In some

further estimates, we also include a binary variable “crisis” which takes the value “1” between 2008 to 2010, in order to control for the impact of the financial crisis on the probability of OECD countries to reform.

Then, we consider a set of determinants of deregulation, including variables which aim at measuring political incentives or impediments to reforms. In line with the theoretical model, these include the type of government (based on a number of classifications referring to the type of government in office for the longest period) in a country  $j$  at time  $t$  and the cabinet composition (Schmidt index) in a country  $j$  at time  $t$ , as an indicator measuring the ideology of the government. The Schmidt index varies between 1 and 5, and is equal to 1 if right-wing parties are hegemonic, and to 5 if left-wing parties are. We consider these political indicators to test the Wiese (2014)’s arguments, according to which the likelihood of health privatizations increases when a right-wing government holds office, decreases before elections and decreases when governments are more fractionalized. The political variables come from the comparative political data set gathered by Armingeon et al. (2016), and are in line with what the literature generally uses (see, for example, Potrafke (2010)). In this set of explanatory variable, we also include the share of the population over 65 years (in percentage of the population). This is meant to bring a control for structural opposition reforms from the general opinion (as a proxy measure of the degree of conservatism in the electorate).

One particularly important variable, with regard to the theoretical framework exposed before, is a measure of the net union membership (measured in percentage of the employees) which we term union density. This gives a measure of the power “insiders” can think they can rely on to confront with a reform-minded government. A high level of this variable would ex-ante reduce the expectations a government would form in terms of the possibility of winning a conflict if insiders oppose the reform.

Another set of explanatory variables is related to window of opportunity hypothesis. Here, to assess if reforms can be triggered by (positive) perceptions of the future GDP growth path, we include GDP growth forecasts in some of our estimates. However, data from the OECD database does not provide GDP growth forecast before 1997. Therefore, we use forecasts data from the IMF World Economic Outlook (WEO) and we include GDP growth forecasts that cover dates  $t$  to  $t + 3$ . We do not go further than  $t + 3$ , first because the average political cycle in the OECD is 4-year long and, second, because the credibility of forecasts made too many years ahead is probably weaker. Hence, going further than 3 years would probably be stretching the argument too much. However, data on GDP growth forecasts from WEO are only available from 1990 on. This constrains us to cover the period 1990-2013.

Finally, we add a variable, called “*herding*”, that aims at reflecting the context in which any

given government acts, that is capturing to what extent the reform process implemented in any country  $j$  is influenced by its “neighboring” countries. Similarly as in Abiad and Mody (2005); Elhorst et al. (2013); Romelli (2015), we compute this latter variable as follows: we first compute the difference between the average level of reform in the other countries ( $\overline{ETCR}_{(-j)}$ ) and the level of the ETCR index for any country  $j$  of the database ( $ETCR_j$ ). Then, we generate a dummy variable that takes the value “1” when the difference (see equation (6)) is positive and “0” otherwise. In other words, if the variable *herding* is equal to 1, it means that the other countries, on average, have a higher level of regulation than country  $j$ . Given the structure of the underlying variable (see Figure 2), this country can be considered as leading the reform process, as it means that it is reforming more quickly than the others. It is thus herding with regard to the others. Thus, we have:

$$diff\ ETCR\ countries_j = \overline{ETCR}_{(-j)} - ETCR_j \quad (8)$$

and:

$$diff\ ETCR\ countries_j > 0 \Rightarrow herding = 1 \quad (9)$$

In several estimates, we will include multiplicative interactions between our main interest variable (namely, union density) and some variables of the model that could have with a significant influence on the probability to implement a reform.

## 4 Empirical analysis

### 4.1 Methodology

The estimated equation is given by the following structure:

$$\begin{aligned} reform_{j,t} = & a_0 + a_1 * ETCR_{j,t-1} + a_2 * ETCR_{j,t-1}^2 + a_3 * (eco)_{j,t} + a_4 * (pol)_{j,t} \\ & + a_5 * (GDPgrowth^e)_{j,t+n} + a_6 * (herding)_{j,t} + a_7(interactions)_{j,t} + \varepsilon_{jt} \end{aligned} \quad (10)$$

with  $j = 1, \dots, 18$ ,  $t = 1, \dots, 24$ , and  $n = 0, \dots, 3$ .

As stated before,  $ETCR_{j,t-1}$  and  $ETCR_{j,t-1}^2$  are included to take into account the specific, non-linear, allure of the variable (see Figure 2).  $(eco)_{j,t}$  denotes the vector of economic variables at time  $t$  for the country  $j$ ,  $(pol)_{j,t}$  denotes the vector of political economy variables (political as well as social - i.e., union density) for country  $j$ ,  $(GDPgrowth^e)_{j,t+n}$  are the different expected GDP growth variables at time  $t$  for the  $t$  to  $t+n$  horizon for country  $j$ .  $(herding)_{j,t}$  indicates

the variable controlling for the leadership hypothesis,  $(interactions)_{jt}$  represent the interacted variables, while  $\varepsilon_{ij}$  is an error term, distributed according to a normal distribution  $(0, \delta^2)$ .

The dichotomous nature of the dependent variable requires the use of the conditional logistic estimation for panel data, with the identifier variable for each matching group being the countries. The conditional logistic is also known as a fixed-effects logit model for panel data.<sup>8</sup>

## 4.2 Results

Table 2 displays the results of the baseline estimates and Table 3 shows the results of the baseline results associated with the interaction variables.

Column (1) in Table 2 shows a significant and positive coefficient of the variable  $ETCR$  at date  $t - 1$ , and a negative and significant coefficient of the variable  $ETCR^2$  at date  $t - 1$ . This confirms the necessity to account properly for the allure of the data, as countries have tended to engineer reforms during the period under review, although not in a linear and systematic way. Then, column (3) shows that our main variable of interest, union density, weighs negatively on the probability to reform, as was expected. This stands in line with the theoretical model. Interpreting the level of social expenditures as a proxy for the possibility for a government to cajole opponents to reform (i.e., to implement compensating transfers to losers from reforms), our empirics also support the model, as this variable receives a positive sign (although the significance is not high).

In column (4), we see that the population aged 65+ acts negatively on the probability to reform, which was expected, this variable being considered as a proxy for the degree of conservatism (as well as of the weight of entrenched interests in a society).

The unemployment rate and the variable indicating a leadership effect are, however, not significant. As the former may de facto contain the same information that the union density variable (in an insider vs. outsiders framework as Lindbeck and Snower, 1988), this is not completely surprising. We interpret the non significance of the latter variable (the leadership, or herding, effect) as revealing the relative independence of countries in their decision to reform.<sup>9</sup>

Of the other variables included in our estimates (see columns (6) and (7)), inflation and the degree of openness of the economy are significant, though they influence the probability to reform in opposite ways. Openness reflects the competitive pressure from outside, and thus logically has a positive influence. Concerning inflation, in line with the model, we would interpret it as a sign of monetary illusion, hence a priori facilitating reforms (in terms of the model, this would

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<sup>8</sup>We also ran estimates with a country fixed effects logit model, and the results are quantitatively similar to the ones with the conditional logit model.

<sup>9</sup>Of course, there may be external pressures to reform, as we acknowledged above. Hence, the result is more revealing that the steps taken to reform can be freely - independently - chosen. In other words, countries can choose the speed at which they undertake reforms, even though the direction (liberalization of the markets and sectors) may be given.

act like a - nominal - transfer to the union). However, in the countries and the period under review, inflation has generally been decreasing, to very low levels, and then being stable. As a consequence, monetary illusion can no longer be relied on by a government attempting to bribe its opponents, which can explain the negative coefficient in our estimates.

The other variables, and in particular the ones related to the political leaning of the governments, are not significant. This comes in stark contrast with the literature. Notably, Potrafke (2010) identifies remarkable differences between leftist and right wing governments which we are not able to reproduce in our dataset. Our explanation of this difference is that, given the low degree of the degree of regulation that is now prevailing (see Figure 2), ideological differences may no longer matter much. Hence, the difference is probably related to the fact that our sample covers 10 years more than the latter author. In other words, when there are few degrees of deregulation available, the role of ideology tends to disappear. This again stands in line with our theoretical reasoning.

The first two columns of Table 3 display the results of estimates containing the same variables as before, to which we add the growth forecasts for, respectively, year  $t + 2$  and  $t + 3$ . These variables are non significant and they are dropped in what follows. These results thus tends to contradict the extension of the theoretical model. However, the dummy “crisis”, although slightly significant, receives a negative sign, which tends to support the possibility that bad economic conditions do not pave the way for reforms. In other words, for the countries and period under review, our results tend not to support the “crisis begets reform” assumption.

Finally, considering the interactions between our variables of interest, the only significant one is the interaction between union density and the level of social expenditures. Its positive sign is also supportive of the theoretical model: the larger the weight of unions, the easier it will be for a government to reform if it can smooth out the consequences of the reform for the losers by compensating them. This will be easier if resources can be used (even if that means deflecting resources from one budget line to another, this is always easier than generating new revenues).

## 5 Conclusion

In this paper, we propose a model of the political economy of reforms, showing the importance of the unions for the implementation of reforms by governments. The theoretical analysis also confirms the importance of transfers on the ease of implementation of reforms, as well as a difference in the opposition’s reactions when the level of reform has already been high and deregulation has taken place. The theoretical findings are then empirically tested. The estimates tend to support the theoretical claims. Especially, we show that unions tend to slow down reforms but that this opposition tends to decrease with an increase in the level of social expenditures. Finally,

in stark contrast with the literature, we find no ideological divide in terms of the probability to implement liberalization reforms. However, as deregulation has already reached high levels, this result lies in conformity with what could be expected theoretically.

These results thus tend to favor for a reappraisal of the literature on reforms, suggesting that the focus could be put less on ideological divides and more on the other, structural, determinants of reform processes (and notably the weight of vested interests).

# 6 Appendix

Figure 1: Distribution of the aggregate ETCR indicator

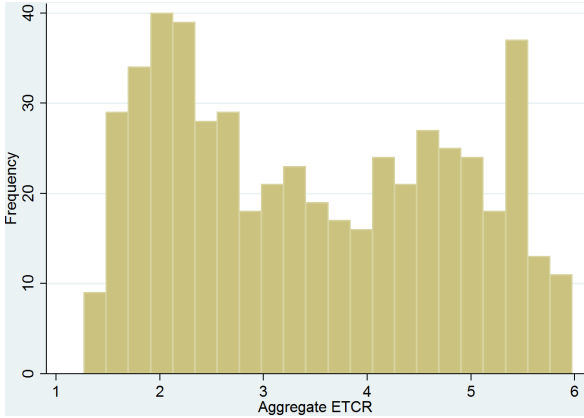
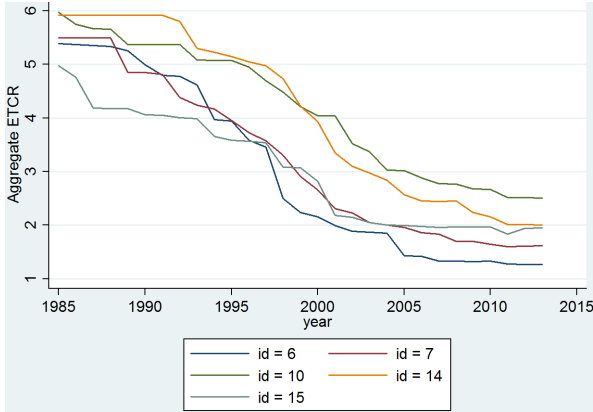


Figure 2: Evolution of the aggregate ETCR indicator - selected countries



id = 6:Germany, 7:Denmark, 10:France, 14:Italy, 15:Japan



Table 2: Baseline models

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ETCR(t-1)	42.083*** (8.849)	50.628*** (10.236)	48.836*** (10.109)	49.165*** (10.306)	49.971*** (10.618)	38.807*** (10.061)	39.571*** (10.084)	38.922*** (10.289)
ETCR(t-1) squared	-37.835*** (7.706)	-41.893*** (8.680)	-41.119*** (8.500)	-41.811*** (8.680)	-41.969*** (8.930)	-25.058*** (8.546)	-26.218*** (8.696)	-26.308*** (8.760)
Union density		-0.164*** (0.057)	-0.175*** (0.058)	-0.199*** (0.063)	-0.224*** (0.066)	-0.137* (0.076)	-0.140* (0.077)	-0.132* (0.079)
Total social expenditure		0.189* (0.102)	0.328** (0.132)	0.217 (0.159)	0.234 (0.157)	0.423* (0.238)	0.403* (0.237)	0.441* (0.241)
Population over 65			-0.412* (0.230)	-0.377* (0.229)	-0.376 (0.232)	-0.635** (0.277)	-0.653** (0.277)	-0.639** (0.271)
Unemployment rate				0.140 (0.119)	0.133 (0.116)	-0.016 (0.138)	-0.013 (0.141)	-0.024 (0.140)
Herding					-0.789 (0.740)	-1.250 (0.939)	-1.330 (0.922)	-1.069 (0.949)
Inflation						-0.639*** (0.203)	-0.622*** (0.200)	-0.624*** (0.202)
Deficit						0.081 (0.106)	0.087 (0.106)	0.041 (0.112)
Openness of the economy						0.119*** (0.036)	0.111*** (0.035)	0.107*** (0.037)
Type of government							0.246 (0.215)	
Cabinet composition								0.036 (0.223)
GDP growth forecast fall date t, IMF								0.148 (0.137)
Observations	321	321	321	321	321	321	321	321
Pseudo $R^2$	19.74	24.99	26.75	27.43	28	40.58	41.24	41.15

Notes: (i) Conditional logit estimates with country matched groups, (ii) \*  $p_i 0.1$ , \*\*  $p_i 0.05$ , \*\*\*  $p_i 0.01$

Table 3: Including interacted variables

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ETCR(t-1)	39.042*** (10.361)	41.810*** (10.508)	33.088*** (10.349)	31.571*** (10.393)	29.513*** (10.798)	32.855*** (10.545)	35.640*** (10.914)	33.218*** (10.408)
ETCR(t-1) squared	-25.204*** (8.680)	-26.987*** (8.733)	-22.237*** (8.616)	-21.255** (8.649)	-19.148** (9.044)	-21.690** (8.715)	-24.537*** (9.145)	-22.275*** (8.634)
Union density	-0.137* (0.077)	-0.149* (0.078)	-0.121 (0.077)	-0.016 (0.109)	-0.292 (0.187)	-0.458*** (0.174)	-0.177* (0.099)	-0.122 (0.077)
Total social expenditure	0.419* (0.242)	0.411* (0.237)	0.471* (0.246)	0.467* (0.240)	0.495** (0.245)	-0.181 (0.362)	0.452* (0.249)	0.471* (0.246)
Population over 65	-0.635** (0.276)	-0.686** (0.277)	-0.597** (0.256)	-0.568** (0.257)	-0.937** (0.444)	-0.473* (0.268)	-0.583** (0.256)	-0.588** (0.264)
Unemployment rate	-0.017 (0.138)	-0.014 (0.136)	-0.011 (0.142)	-0.060 (0.146)	-0.029 (0.142)	0.069 (0.150)	-0.043 (0.146)	-0.012 (0.142)
Herding	-1.234 (0.952)	-1.043 (0.931)	-0.810 (0.963)	-0.626 (0.962)	-0.874 (0.978)	-0.646 (0.958)	-0.683 (0.982)	-0.818 (0.966)
Inflation	-0.642*** (0.205)	-0.645*** (0.201)	-0.554*** (0.195)	0.051 (0.442)	-0.560*** (0.192)	-0.600*** (0.201)	-0.550*** (0.198)	-0.556*** (0.197)
Deficit	0.080 (0.107)	0.072 (0.107)	0.039 (0.109)	-0.010 (0.116)	0.056 (0.112)	0.047 (0.112)	0.015 (0.112)	0.039 (0.109)
Openness of the economy	0.119*** (0.036)	0.125*** (0.036)	0.116*** (0.035)	0.131*** (0.039)	0.115*** (0.035)	0.140*** (0.039)	0.087* (0.047)	0.116*** (0.035)
GDP growth forecast fall date t+2, IMF	-0.042 (0.443)							
GDP growth forecast fall date t+3, IMF		-0.512 (0.459)						
crisis between 2008 and 2010			-1.254* (0.729)	-1.254* (0.752)	-1.254* (0.739)	-1.042 (0.728)	-1.254* (0.732)	-1.382 (1.203)
Union density * Inflation				-0.019 (0.013)				
Union density * share pop. over 65					0.015 (0.015)			
Union density * Total social expenditure						0.019** (0.008)		
Union density * Openness of the economy							0.001 (0.001)	
Union density * crisis								0.004 (0.029)
Observations	321	321	321	321	321	321	321	321
Pseudo $R^2$	40.59	41.19	42.08	43.19	42.59	44.84	42.50	42.09

Notes: (i) Conditional logit estimates with country matched groups, (ii) \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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