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Partisan Liberalizations. A New Puzzle from OECD Network Industries?

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Abstract - We investigate the political determinants of liberalization in OECD network industries, performing a panel estimation over thirty years, through the largest and most updated sample available. Contrary to traditional ideological cleavages, we find that right-wing governments liberalize less than left-wing ones. This result is confirmed when controlling for the existing regulatory conditions that executives find when elected. Furthermore, governments' heterogeneity, proportional electoral rules, and European Union membership all show positive and statistically significant effects on liberalization. Our findings suggest that, despite the conventional wisdom, the political-economic rationale behind liberalization paths in network industries is far from being assessed.

Keywords: Liberalization – Network Industries – Government heterogeneity and Partisanship – Electoral systems - Panel data

JEL Classification D72, L50, P16, C23

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1. Introduction[1]

One of the distinguishing features of the last three decades has been the wave of market-oriented policies experienced worldwide (Conway and Nicoletti, 2006; Armstrong and Sappington, 2006; Guriev and Megginson, 2007; Pitlik, 2007).

In particular, in network industries, which cover crucial sectors for national economies such as passenger air transport, telecommunications, electricity, gas, post, rail and road, privatization and liberalization are among the market-oriented policies which registered the largest convergence across OECD countries.

Beside the analysis of economic determinants (Vickers and Yarrow, 1991; Levy and Spiller, 1996; Newbery, 1997; 2002; Armstrong and Sappington, 2006), a large group of scholars have investigated the role of institutional and political determinants of market-oriented policy in network industries, following the 'political economics' approach (Persson and Tabellini, 2000; Persson, 2002; Besley and Case, 2003; Besley, Persson and Sturm, 2010).

While the political economy of privatization in network industries has been largely investigated and measured, little of this literature, with some relevant exceptions, addresses the role of political parties and institutions as determinants of liberalization policy.

In this paper we attempt to fill this gap, analyzing liberalization policies over the last three decades in seven OECD network industries, whose relevance is crucial both in terms of their impact on per capita consumption and as suppliers of intermediate inputs (Conway and Nicoletti, 2006). Liberalization here refers mainly to policy aimed at reducing economic, institutional and legal barriers to entry in sectors previously dominated by legal state-owned monopolies and in which access to essential facility networks is crucial to develop downstream competition.

Our research aims at addressing the following questions: Do right-wing governments support liberalization in network industries more than left-wing ones? Do left-wing governments abstain from liberalization policies in network industries in the same vein as they are deemed to do with privatization? Furthermore, since partisan competition

could be heightened or stifled by different political institutions (Milner, and Judkins, 2004), other related issues need to be addressed in addition to the above fundamental questions: Does partisanship matter for liberalization policy when controlling for the political institutions in which parties and governments are embedded, such as the nature of electoral rules, the constitutional system of governments, the parliamentary system and the homogeneity of the governing coalitions? Does policy diffusion, such as European Union membership, affect the decision and timing of liberalization in network industries (Levi-Faur, 2003; Simmons and Elkins, 2004; Clifton, Comin and Diaz Fuentes, 2006; Pitlik, 2007)?

Our analysis is based on the largest updated data set available, provided by the latest releases of ETCR economic indicators for liberalization (OECD, 2009) and by political indicators of the World Bank's Database of Political Institutions (World Bank, 2009). This allows us to consider a larger group of countries and a longer period of time with respect to previous empirical studies (e.g., Pitlik, 2007; Potrafke, 2010). In particular, we perform a panel analysis on a sample of 30 OECD countries over the 1975-2006 period, and circumvent omitted variable bias and endogeneity problems by estimating a time/country fixed effects lag-model. Our results, firstly, reveal that left-wing governments have been more active in promoting liberalization policies than right-wing ones. Secondly, they suggest that the traditional claim of right-wing governments to be the biggest promoters of market-oriented policies may need to be reconsidered when the deregulation process is analyzed in its entire accomplishment from the Seventies to date.

Moreover, our analysis reveals that government heterogeneity and proportional electoral systems show a positive and statistically significant effect on the decision to liberalize. Also European Union membership, which had almost no influence as a driver for liberalization in previous empirical studies (see, e.g., Potrafke, 2010), in our analysis turns out to positively affect, in a statistically significant way, the intensity of liberalization policies. In addition, adoption of the euro currency shows a statistical significant effect on liberalization in network industries, as pointed out by Høj, Galasso, Nicoletti and Dang (2006). Finally, a strong path-dependency is found for OECD liberalization patterns, as past deregulation initiatives not only show a remarkable 'ratchet effect' but also seem to generate a positive attitude in governments towards launching new liberalization programs.

The evidence we find thus provides Political Economy with the puzzle of giving

reasons for the hitherto neglected left-wing liberalization trend observed in network industries. Commenting our results, we briefly outline five main alternative motivations for a *left-wing liberalization rationale* in network industries:

a) *liberalization as the result of crossing ideological divides and/or policy diffusion*;

b) *liberalization as a 'policy reversal'*;

c) *liberalization as a signal towards swing voters under political competition*;

d) *liberalization as a weak, institutionally determined, market-oriented policy*;

e) *liberalization as a 'new' left-wing policy.*

It is worth emphasizing that, in this paper, we do not attempt to single out from the above any dominant interpretation for our findings, neither do we seek to provide a theory for left-wing *versus* right-wing parties' preferences for liberalization. We simply claim that our findings reverse the conventional argument that right-wing governments and majoritarian (plurality or 'winner takes all') electoral systems *should* always, and systematically, implement market-oriented policy more than do left-wing governments and proportional electoral systems, as generally deemed to be the case in the empirical literature so far. We conclude that partisanship and political institutions matter for liberalization. But the analysis of the political rationale and the institutional determinants behind deregulation of network industries is still in its infancy and further research is needed to properly address the results and the stylized facts we outline.

Two caveats arise: we do not explore whether political parties properly reflect, in their liberalization choices, the interests of their constituents; and we do not measure economic liberalization outcomes such as prices, market structure, investments and so on.

The paper proceeds as follows. In Section 2 we briefly review the existing empirical literature on the institutional and political determinants of market-oriented policies and show how comparing the results reached so far in the literature with stylized facts on liberalization, raises new puzzles. In Section 3 we describe our data and empirical strategy, while in Section 4 we summarize our main results. Section 5 discusses our findings and Section 6 concludes.

2. Partisanship and Market-oriented Policy: Results, Stylized Facts and Puzzles

Market-oriented policies have been defined in various ways (Heckelman and Knack, 2005) and generally include many policy tools such as the security of property rights (Knack and Keefer, 1995; Trebilcock and Daniels, 2008), openness to trade (Sachs and Warner, 1995; Frankel and Romer, 2000), labor and product market regulation (Loayza, Oviedo and Serven, 2005), and privatization and liberalization of network industries (Nicoletti and Scarpetta, 2003; Conway and Nicoletti, 2006).

We devote here our attention to the literature on the political and institutional determinants of privatization and liberalization policies in network industries.

A. POLITICAL AND INSTITUTIONAL DETERMINANTS OF PRIVATIZATION

A theory of political determinants of market-oriented policy has been formulated by Biais and Perotti (2002) who focus on partisan privatization choice within the framework of the median voter problem (Downs, 1957). In the considered framework, political parties compete on their economic policies, which include taxation, redistribution and privatization, to gain median voters' consent. Privatization by right-wing parties acts as a way of co-opting an otherwise left-leaning middle class. Since launching privatization programs should imply a credible commitment to abstain from adopting any other policy which may interfere with the expected private outcomes of privatization, Biais and Perotti (2002) conclude that only right-wing parties are able to enact credible privatization , being left-wing parties always tempted to 'hold up' shareholders *ex post* through a redistribution of rents towards their constituents.

This conclusion is consistent, on the theoretical side, with common wisdom on political party differentiation over economic policy (Alesina, 1988; Alesina and Rosenthal, 1995; Perrotti, 1995; Garrett, 1998; Besley, 2007) between left-wing parties (traditionally focused on policies increasing government spending and public ownership) and right-wing ones (typically oriented towards lower spending, balanced budget, lower inflation and a reduced presence of the state in the economy); Biais and Perotti's argument is also consistent, on the empirical side, with the findings outlined in several applied investigations.

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Many scholars have attempted to analyze and measure the political and institutional determinants of privatization in network industries, interpreting the degree of public ownership as the most significant, if not exhaustive, proxy for the adoption of market-oriented policies in developed economies (Perotti, 1995; Boix, 1997; Meggison and Netter, 2001; Li and Xu, 2002; Biais and Perotti, 2002; Schneider, Fink, and Tenbucken, 2005; Dinc and Gupta, 2007; Bortolotti and Pinotti, 2008; Schneider and Nage, 2008; Biørnskov and Potrafke, 2009; Arin and Ulubasoglu, 2009)

In particular, Li and Xu (2002), in a study of the political economy of privatization in the telecommunications sector, find that whether a country privatizes or not depends on its political structure. Some authors find a positive relationship between the decision to privatize and the government's strength, in terms of low levels of both political competition (Dinc and Gupta, 2007), and political fragmentation as observed under a proportional electoral system (Bortolotti and Pinotti, 2008). These findings are somewhat confirmed by several analyses showing empirical evidence of privatization's benefits with increasing dissatisfaction and opposition among citizens and policymakers (Kikeri and Nellis, 2004; Wood, 2004). Other scholars have investigated how far ideology determines the design and implementation of privatization programs (Appel, 2000), outlining how right-wing office-holders with re-election concerns design privatization to spread share ownership among domestic voters (Bortolotti and Pinotti, 2008). The influence of right-wing governments on the privatization race has been confirmed by Biørnskov and Potrafke (2009) for Central and Eastern Europe and by Arin and Ulubasoglu (2009) for the cement industry in Turkey. Legal traditions also have been indicated as a relevant influence in general on several economic policies (La Porta *et al.*, 1999) and in particular on liberalization (Pitlik, 2007). The regularity observed by many empirical investigations shows that 'politics matter' for the adoption of privatization policy and that the decision to privatize is significantly influenced by majoritarian and right-wing governments, while proportional electoral rules and left-wing governments seem traditionally to have hindered it.

B. POLITICAL AND INSTITUTIONAL DETERMINANTS OF LIBERALIZATION

While the political economy of privatization choices has been largely investigated, the

analysis of institutional and political determinants of liberalization policy is still in its infancy. In the light of the evidence on the determinants of privatization, some scholars have concluded that additionally other market-oriented policies in network industries, such as liberalization, are mainly driven by right-wing parties in office. Duso (2002), studying regulatory intervention and entry liberalization within the mobile telecommunications industry in OECD countries during the 1990s, shows how countries with majoritarian elections liberalize more, with left-wing governments liberalizing less than right-wing governments.

Pitlik (2007) finds, for 22 OECD countries, that a left-wing orientation of government and a high degree of legislative fragmentation are negatively related to deregulation of markets. Duso and Seldeslachts (2009) investigate liberalization in mobile telecommunications in 24 OECD countries, showing how a majoritarian political system induces a faster liberalization, with right-wing parties pushing more for market-oriented reforms.

Finally, Potrafke (2010) analyzes the impact of government ideology on the liberalization of network industries in 21 OECD countries, showing how market-oriented and right-wing governments have been more active in deregulating product markets, while European Union membership does not turn out to be statistically significant.

The limited empirical literature so far available confirms, for liberalization policy in network industries, the same conclusions as those reached in the literature on privatization: a strong role for right-wing governments and majoritarian systems. Besides, the impact of international policy diffusion and supranational determinants, such as European Union membership, in inducing the adoption of market-oriented policies seems more controversial, as Pitlik (2007) and Potrafke (2010) respectively find the effects to be weak or absent, while Høj, Galasso, Nicoletti, and Dang (2006) measure a significant impact of adoption of the euro for liberalization policies.

C. STYLIZED FACTS AND PUZZLES ON THE POLITICAL DETERMINANTS OF LIBERALIZATION IN NETWORK INDUSTRIES

Some of the above preliminary conclusions on the relationship between partisanship

and liberalization turn out to be puzzling on empirical grounds.

Indeed, they seem apparently inconsistent with some relevant experiences of liberalization processes observed in many developed economies. Several liberalization reforms in network industries have been led by left-wing and centrist and/or independent governments, proportional electoral rules and heterogeneous and 'weak' governmental coalitions (Figure 1).

FIGURE 1

Aggregate liberalization race in seven network industries for 30 OECD countries and right-wing/left-wing governments over the last decade. (OECD, 2009; World Bank, 2008)
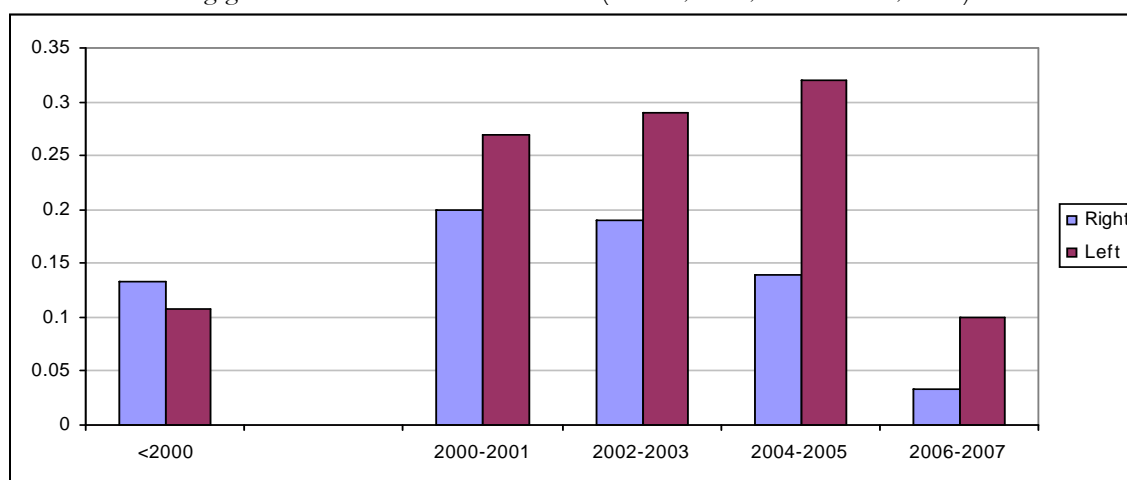
Note: liberalization is measured by subtracting the OECD's (2009) indicator of entry barriers from its maximum value (the index ranges from 0 to 6): the liberalization initiatives' intensity (Y axis) is then calculated as two-year variations of the liberalization index. On the right side of the graph the average intensity before 2000 is displayed, on the left side two-year variations after 2000 are shown.

Figure 1 above reports the aggregate liberalization race in seven network industries for 30 OECD countries. On the right side of the graph the average liberalization intensity before 2000 is displayed, on the left side two-year variations after 2000 are shown. Figure 1 makes it clear first of all that, within a sample of 30 OECD countries, before 2000 left-wing governments implemented some liberalization (measured by two-year variations in the inverse of ECTR index (OECD, 2009)) in the same vein as right-wing governments, which however seem to have undertaken a higher level of liberalization from an inferential point of view, as outlined by Pitlik (2007) and Potrafke (2010), who study a smaller sample of OECD countries through 2002-03.

The new evidence clearly shows that, from the late Nineties onward, left-oriented governments undoubtedly have been more active than right-oriented ones in liberalization policies, while both right-wing and left-wing executives appear to have reduced liberalization activity after 2006, having approached in many sectors the floor

of entry barrier reductions in the OECD indicator.

Some stylized facts, picked from the communications and electricity sectors, confirm this pattern.

Some evidence of Left-Wing Liberalizations in the Communications Sector

With regard to the Danish communications sector, in 1999 the Social Democrats approved an agreement enabling the establishment of alternative infrastructures in the access network through the public tendering of frequency resources, in order to enhance competition in the market. At the end of the same year, the Danish parliament, again under the leadership of the Social Democrats, approved Act No. 1996 (amending the Act on Radio-communications and Assignment of Radio Frequencies and the Act on Public Mobile Communications) that substantially increased competition in broadband services and in the mobile market. Similarly, in Portugal a government led by the Socialist Party fully liberalized the telecommunications services between 1998 and 2000; in 2000, in particular, Portugal Telecom lost its exclusive rights as a telecoms service provider. More generally, in the telecommunications sector, left-wing governments have led substantive liberalization processes in several countries. In France, the Socialists approved an unbundling decree in 2000 that mandated France Telecom to provide both raw copper unbundling and shared access to its loops. In Germany, the left-wing SPD approved in 2003 a new Telecommunications Act reducing entry barriers. In Greece, Law No. 2246 of 1994 (introduced by the Pan-Hellenic Socialists) liberalized all telecommunications services and the mobile market. In Hungary, the Hungarian Socialist Party enacted a number of regulatory initiatives concerning licensing in telecommunications services between 1996 and 1998. In Italy, the liberalization of satellite services and the voice telephony market started with Law No. 249/97 by the Center-Left Ulivo alliance. In the Netherlands, the Labor Party implemented the liberalization of telecommunications infrastructure and of all telecommunications services between 1996 and 1997. In Poland, several ordinances between 1996 and 2001 were implemented by SRP, and then by SLD, concerning various aspects of the telecommunications market. In Spain, in 1995 the PSOE approved the Satellite Telecommunications Act and the Cable Telecommunications Act that authorized the concession for cable services through a

call for tenders. In Turkey, the parliament, led by the Democratic Left Party, approved the end of the monopoly of Turk Telekom in 2000. In Canada, a number of liberalization initiatives for the telecommunications market were implemented by the Liberal Party, starting from 1994.

Some evidence of Left-Wing Liberalizations in the Electricity Sector

Also in the electricity sector, left-wing governments have implemented pro-competitive policies in the past. We recall here some concrete initiatives in brief. In Australia, the left-wing government of Victoria passed an Electricity Industry Act in 1993 which created a wholesale market. In Canada, the Electric Utilities Act was approved in Alberta in 2001, and the Energy Competition Act passed in Ontario in 1998, both through the promotion of the Liberal Party, completely liberalizing electricity supply. In the Czech Republic, the Energy Act of 2000 was approved by a parliament dominated by the Social Democratic Party – CSSD. In Denmark, the Amendment to the Danish Electricity Supply Act issued in 1996 was approved by the Social Democrat-led parliament, so permitting private companies and distribution companies of sufficient size to buy power from third parties. In France, in 2000, Law No. 2000-108 concerning the access of new entrants to both distribution and transmission networks was enacted by the National Assembly under the Socialists. In Greece, the Electricity Law of 1999, complying with Directive 96/92/EC and applying free market rules to electricity generation and supply, was introduced by the Pan-Hellenic Socialists. In Italy, in 1999, with the Bersani Decree (Decree 79/99), the liberalization of the electricity sector and the establishment of a sectoral Regulatory Authority were introduced by the Center-Left coalition. In Japan, the first left-wing government since 1975 (led by the Social Democratic Party – SDPJ) approved the Amendment to the Electricity Utility Law in 1995, introducing a system of competitive tendering in the wholesale electricity market. In the Netherlands, with the Electricity Act of 1998 introduced by the Labor Party, decentralized energy generation was favored. In Poland, the Energy Act was issued by the SRP in 1997, allowing large electricity users to negotiate directly with generators of power. In Spain, the Electricity Act was promoted by the Socialist Party – PSOE - in 1994, creating the Independent System and setting up competition for the access to

electricity networks. In Sweden, the Law for the Supply of Electricity 10/95 in 1995 was introduced by the Social Democrats, making it possible to generate and trade electricity in a competitive environment. In Turkey, the Electricity Market Law of 2001, establishing a new entity to oversee all energy market activities, was promoted by the Democratic Left Party – DSP. Finally, in the USA, the Public Utility Regulatory Policies Act – PURPA –, aimed at encouraging decentralized energy production, was promoted by the Democrats in 1978 (approved along with the Airline Deregulation Act).

General evidence of Left-Wing Liberalization Race in Network Industries

Besides the mentioned instances of launching liberalization in the communications and electricity sectors, left-wing governments have been active – to differing extents - in other industries, such as air transport, gas, post, rail and road.

FIGURE 2

Liberalization race in seven network industries for 30 OECD countries and right-wing/left-wing governments over the 1975-2006 period. (OECD, 2009; World Bank, 2008)
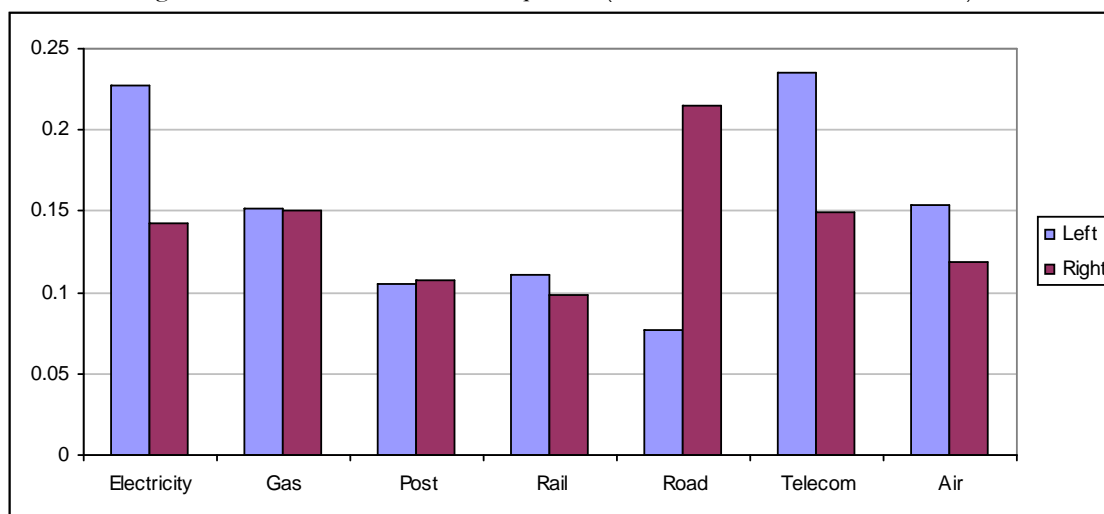

Note: liberalization is measured by subtracting the OECD's (2009) indicator of entry barriers from its maximum value (the index ranges from 0 to 6); liberalization initiatives' intensity (Y axis) is then calculated as two-year variations of the liberalization index and expressed as an average over the 1975-2006 period.

As reported in Figure 2, with the exception of the road sector (where right-wing governments seem to be far more active than left-wing ones) and of the post and gas sector (where parties of either political leaning show a similar intensity in liberalization), left-wing governments perform better than right-wing ones as to

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liberalization intensity. We therefore claim that empirical analyses that refer to a limited number of countries and that do not consider the deregulation process in its entirety (from the Seventies to date) may lead only to partial conclusions. Indeed, especially in the last decade, many left-wing governments seem to have pushed convincingly towards liberalization.

Finally, Figure 3 reports all the liberalization patterns (as an average for seven network industries) observed in 15 of the 30 OECD countries analyzed in this paper in which left-wing governments seemed to have pushed towards liberalization. The liberalization race under left-wing governments is labeled by 'L', whereas 'R' stands for right-wing governments, and NC for 'other' parties according to the World Bank (2009) classification.

FIGURE 3
Performance of Left-Wing Governments on liberalization policy for seven Network Industries
Source: Elaboration from OECD (2006, 2009) and World Bank (2009); L= left-wing; R= right-wing; NC= non classified.

France

Greece

Hungary

Italy

Mexico

Netherlands

Norway

Poland
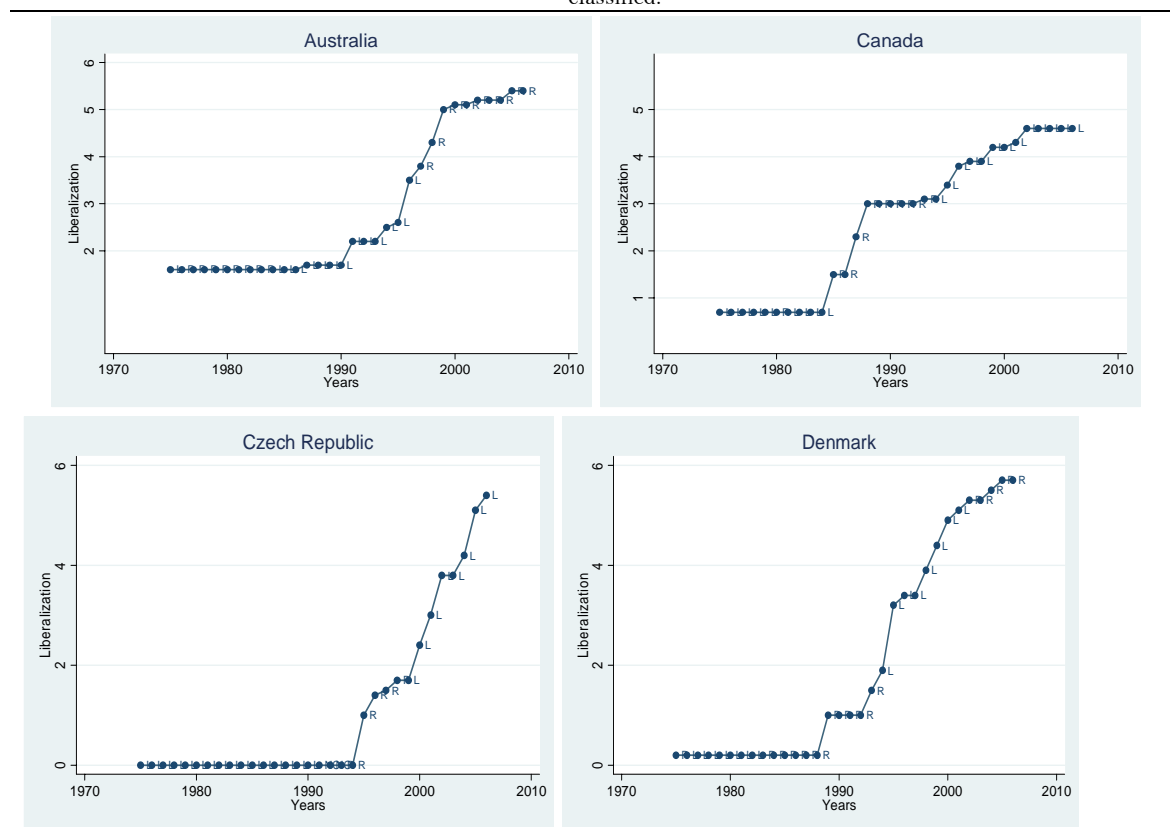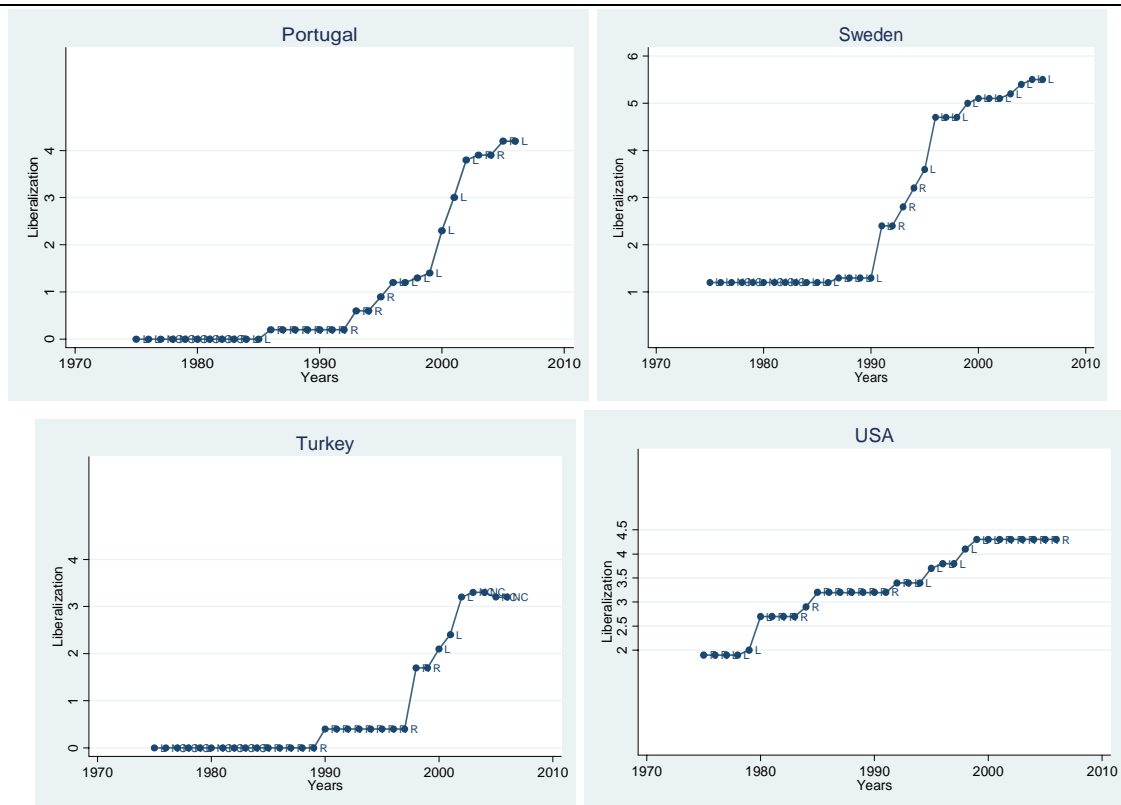
According to Figure 3, the historical evidence of liberalization policies adopted in seven network industries (communications, electricity, air transport, gas, post, rail and road) over the last two decades under left-wing governments – as in Australia, Canada, Czech Republic, Denmark, France, Greece, Hungary, Italy, Mexico, the Netherlands, Norway, Poland, Portugal, Sweden and even the USA – shows relevant exceptions to the empirical findings supporting the view that the right wing favors liberalization and the left wing is against it.

We point out that the stylized facts shown in the above figures are hard to reconcile with earlier empirical findings unambiguously attributing a significantly greater impact of right-wing governments upon liberalization than of left-wing ones, at least with reference to the most updated OECD sample we have reported and employed in our analysis (OECD, 2009).

To contribute to solving the above empirical puzzle, we investigate the following hypothesis:

Left-wing governments have been more active than right-wing ones in adopting liberalization of network industries.

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In doing so, we also explore whether homogeneous coalitions and majoritarian systems induce a higher level of liberalization of network industries than do heterogeneous coalitions and proportional electoral systems.

3. Data and empirical strategy

3.1 Data and variables

In order to perform the empirical analysis we collect a well-suited data set in which we link information on countries' liberalization outcomes to various characteristics of national governments. We use data from various sources over the 1975-2006 period. The base sample we use is the largest possible given the data availability (30 countries);[2] moreover, our sample period covers entirely the liberalization wave observed in Western countries in the last three decades through 2006, whereas previous analyses focused on a smaller number of countries and on a shorter period coverage.

To construct an index of economic liberalization (which we call *Liberalization* in our empirical analysis) we use the entry barriers index measured by the Indicators of Regulation in Energy, Transport and Communications – ETCR – (OECD, 2009) and calculate the variable *Liberalization* by subtracting the OECD (2009) entry barriers measure from its maximum value. The OECD (2009) entry barriers index is calculated by OECD as the simple average of seven sectoral indicators that, in turn, measure the strictness of the legal conditions of entry in the following non-manufacturing sectors: passenger air transport, telecommunications, electricity, gas, post, rail and road. Our final *Liberalization* index ranges from 0 to 6.[3]

To identify the government party's political orientation with respect to economic policy, we use information from the Database of Political Institutions (World Bank, 2008), which has been routinely used in cross-country quantitative studies (see, among

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[2] Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.

[3] For a comprehensive description of the ETCR indicators see Conway and Nicoletti (2006).

others, Dutt and Mitra (2005), Krause and Méndez (2005), and Giuliano and Scalise (2009)). We construct three dummy variables – *Left*, *Right* and *Other* – which respectively equal 1 if: the government party is defined as socialist, social-democratic, communist or left-wing (*Left*); it is defined as conservative, Christian democratic or right-wing (*Right*); or it is defined as centrist or does not fit into the two previously mentioned categories (*Other*).[4]

The relation between the executive's orientation and economic liberalization outcomes may be dependent also on a government's other characteristics, the omission of which might cause estimation bias. For example, as suggested by Bortolotti and Pinotti (2008), the effective lawmaking power of the government is (possibly) relevant to the executive's capacity to implement economic policies, so that a low legislative power may affect the executive's initiatives regardless of its political orientation. We cope with this problem by including a set of legislature-specific variables in the econometric analysis.

In particular, we consider the following variables.

GovHeterogeneity: this variable is defined as the probability that two deputies picked at random from among the government parties will be of different parties (source: World Bank, 2008);

Majority: this measures the margin of majority, that is the fraction of seats held by the government, calculated by dividing the number of government seats by total seats (source: World Bank, 2008);

AllHouse: this is a dummy variable that equals 1 when the party of the executive has an absolute majority in the houses that have lawmaking powers (source: World Bank, 2008);

YearsInOffice: this is defined as the number of years the chief executive has been in office (source: World Bank, 2008);

YearsLeft: this is the number of years left in the current term (source: World Bank,

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[4] A detailed description of the main variables that we use is provided in the Appendix.

2008);

Proportional: this is a dummy variable equal to 1 if representatives are elected based on the percentage of votes received by their party and/or the electoral system is specifically called 'proportional representation' (source: World Bank, 2008).

Several authors highlight that a government's economic policies do not depend only on the executive's political motivation and lawmaking power but are shaped also by the country's economic characteristics. We control for this possibility and consider a set of further covariates.

First, we use government debt as a percentage of GDP (*GovDebt*) in order to control for the central government's financial situation. This variable measures the entire stock of direct government fixed-term contractual obligations to others, outstanding on a particular date. It includes domestic and foreign liabilities such as currency and money deposits, securities other than shares, and loans; it is the gross amount of government liabilities reduced by the amount of equity and financial derivatives held by the government (source: World Development Indicators, World Bank, 2009).

Second, the country's general economic situation as measured by the gross domestic product may be important as well. Thus we include GDP converted to 2005 international dollars using purchasing power parity rates (*Gdp*), and its per capita value (*GdpPerCap*). Both these variables are obtained from World Bank (2009).

Third, labor market conditions are another factor potentially relevant to economic liberalization. For instance, Blanchard and Giavazzi (2003) point out that product and labor market regulation are likely to be linked. Accordingly, we consider an indicator of the degree of employment protection (*EmplProtection*), obtained from OECD (2008), the employment in industry as a percentage of total employment (*Employment*), obtained from World Bank (2009). *EmplProtection* is calculated as an unweighted average of 12 sub-indicators for regular contracts and six sub-indicators for temporary contracts; this variable is a synthetic index of the strictness of the country's employment protection legislation.

Fourth, we include a dummy variable that records whether a given country has a civil law legal system – *CivilLaw* – (source: La Porta *et al.*, 1998), whose potential relevance has been suggested by La Porta *et al.* (2008). In the same vein, Pitlik (2007) finds evidence that 'legal families' play a role in affecting market-oriented policies.

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Finally, we also include two dummy variables that record, respectively, the country's membership of the European Union (*EUMember*) and adoption of the euro (*Euro*) to test whether policy diffusion plays a role in affecting parties in office, irrespective of their political ideology, as a supranational driver of national governments' initiatives (Levi-Faur, 2003; Simmons and Elkins, 2004; Comin and Diaz Fuentes, 2006; Høj, Galasso, Nicoletti and Dang, 2006; Pitlik, 2007).

TABLE 1. Descriptive statistics (left-wing and right-wing governments).

	Right		Left		
Variable	Obs.	Mean	Obs.	Mean	Source
Liberalization	359	1.889	336	2.042	Authors' elaboration on OECD (2009) data World Bank (2008)
Majority	294	0.614	301	0.668	World Bank (2008)
AllHouse	358	0.276	331	0.280	World Bank (2008)
YearsInOffice	359	3.988	335	3.814	World Bank (2008)
YearsLeft	359	1.682	334	1.652	World Bank (2008)
GovHeterogeneity	354	0.288	326	0.194	World Bank (2008)
GovDebt	101	56.638	113	59.564	World Bank (2008)
EmplProtection	246	2.166	236	2.233	OECD (2008)
Employment	287	28.608	247	28.308	World Bank (2009)
Gdp	320	1.22e+12	284	8.78e+11	World Bank (2009)
GdpPerCap	320	23281.64	284	23242.69	World Bank (2009)
EUMember	359	0.200	336	0.300	Authors' coding
Euro	359	0.075	336	0.026	Authors' coding
Proportional	358	0.793	332	0.789	World Bank (2008)
CivilLaw	359	0.239	336	0.214	La Porta *et al.* (1998)

Note: we have dropped from the sample the Czech Republic's and Hungary's observations referring to the years of communist dictatorship, while Slovakia's observations refer to the period after it was declared a sovereign state; Switzerland is removed from the final sample because of missing data on the main political characteristics of the government.

Generally, policy initiatives take time to generate an observable economic (or legal) outcome (Potrafke, 2010). For this reason, we regress our liberalization variable on one-year-lagged covariates. So, on the one hand, we avoid attributing an economic outcome, resulting perhaps from a laborious political process, to an executive just elected; on the other hand, we do not incur endogeneity or reverse causality problems due to the simultaneous determination of liberalization and certain types of labor market institutions (as measured by *EmplProtection*) and/or the general economic conditions of countries (measured, for instance, by *Gdp*).

In our final dataset, the countries with the highest liberalization score at the end of the period considered are Denmark (5.7), Germany (5.6) and Sweden (5.5), while those

with the lowest are Mexico (2.4), South Korea (3.1) and Turkey (3.6). The countries that saw left-oriented governments most often between 1975 and 2006 are Austria, Canada, Mexico and Sweden; conversely, Belgium, Japan and South Korea show the highest number of right-oriented governments in the period under consideration. On average, the government heterogeneity index is about 0.25 and the margin of majority of governments is about 0.64 (both these indexes range from 0 to 1).

A synthetic description of all the variables is provided in Table 1.

3.2 Empirical strategy

Even if we include in our analysis all the variables which we deem potentially relevant to economic liberalization, it may be argued that unobservable or unmeasurable factors, such as national culture or traditions, also affect the economic policies of governments (La Porta *et al.*, 1999; Guiso, Sapienza and Zingales, 2006). Furthermore, time tendencies may shape countries' liberalization patterns regardless of the political beliefs of individual governments (e.g., the 'globalization wave').

To cater for this, we undertake a panel analysis in which we include country- and time-fixed effects. Time-fixed effects, in particular, capture the time pattern that is constant across countries. Having done so, what we finally obtain is an estimate of the marginal effect of country-specific and legislature-specific variables on the variations of liberalization outcomes across countries and years, also controlling for time tendencies.

Formally, we focus on the following population regression function:

$$\mathbf{E}\big(Liberalization_t \big| \mathbf{x_t}, c, s\big) = \beta_0 + \boldsymbol{\beta}\mathbf{x_t} + c + s \tag{1}$$

where $\boldsymbol{\beta}\mathbf{x} = \beta_1 x_{t1} + \ldots + \beta_K x_{tK}$, and x_{tj} indicates variable j at time t, and where the omitted variable country-specific c is time-constant, while the omitted variable time-specific s is constant across countries. In model (1) it is assumed that c has the same effect on the mean response in each time period and that s has the same effect on the mean response in each country.

In our context, the basic unobserved effects model (UEM) can be written as:

$$Liberalization_{it} = \beta x_{it} + c_i + s_t + u_{it} \ , \qquad t = 1975, 1976, \ldots, 2006 \qquad (2)$$

where $\mathbf{x}_{it}$ is a $1 \times K$ vector, c_i and s_t are unobserved components which account for the unobserved heterogeneity, and u_{it} are idiosyncratic disturbances that change across t and across i.

In a fixed-effects estimation, c_i and s_t are allowed to be correlated with $\mathbf{x}_{it}$, so that the assumption of zero correlation between the observed explanatory variables and the unobserved effects is not imposed. By doing so, we obtain results that are more robust than those obtained through a random effects analysis. However, as Wooldridge (2002) points out, this robustness comes at a price; specifically, we cannot include factors constant across countries and periods in $\mathbf{x}_{it}$. In our estimation, we respect this restriction.[5]

Finally, we calculate one-period-lagged values of the explanatory variables and include them in the operative model. Hence, making the response variable and the government's political orientation explicit, we can write model (2) in the following lag UEM form:

$$Liberalization_{it} = \beta_0 + \beta_1 Left\text{-}wing_{it-1} + \beta_2 Right\text{-}wing_{it-1} + \boldsymbol{\delta\kappa}_{it-1} + \lambda\boldsymbol{\omega}_{it-1} + c_i + s_t + u_{it} \qquad (3)$$

with $t = 1975, 1976, \ldots, 2006$, and where $\boldsymbol{\kappa}_{it-1}$ is a vector that contains the legislature-specific variables, $\boldsymbol{\omega}_{it-1}$ is a vector of controls referring to the country's economic characteristics, $\boldsymbol{\delta}$ and $\boldsymbol{\lambda}$ are vectors of parameters, β_0 is the model constant, c_i and s_t are unobserved components which account respectively for the unobserved country-specific (constant over time) and time-specific (constant across countries) heterogeneity, and u_{it} are idiosyncratic disturbances that change across t and i.

Notice that $Other_{it-1}$ is the benchmark class for the government's political orientation dummies.

As a robustness check, we perform two model specifications in which we consider also

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[5] Note that in one model specification, we include a country's legal family variable (*CivilLaw*) that is time constant. In order to perform this individual regression, we use a random effects model.

the one-year lagged deregulation level (observed in each country) and a linear time trend explicitly included as one of the covariates.

When we include the one-year-lagged deregulation level, model (3) becomes:

$$Liberalization_{it} = \beta_0 + \beta_1 Left\text{-}wing_{it-1} + \beta_2 Right\text{-}wing_{it-1} + \beta_3 Deregulation_{it-1} +$$

$$+ \delta \kappa_{it-1} + \lambda \omega_{it-1} + c_i + s_t + u_{it} \tag{3$'$}$$

The deregulation level is measured using an indicator obtained by subtracting the OECD (2009) ETCR index to its maximum value. The OECD (2009) ETCR index is calculated by OECD as the simple average of seven sectoral indicators that, in turn, measure the strictness of the legal conditions of entry, the level of public ownership, the characteristics of vertical integration and the market structure in the above mentioned non-manufacturing sectors. Including the one-year-lagged deregulation level allows us to estimate the autoregressive component of liberalization policies. By doing so, we can observe the effect of governments' political orientation independently of the existing regulatory conditions which executives find when elected.

When we include the time trend, model (3) can be written as:

$$Liberalization_{it} = \beta_0 + \beta_1 Left\text{-}wing_{it-1} + \beta_2 Right\text{-}wing_{it-1} + \beta_3 Trend_{it} +$$

$$+ \delta \kappa_{it-1} + \lambda \omega_{it-1} + c_i + s_t + u_{it} \tag{3$''$}$$

Including a time trend allows us to estimate the effect, if any, of time factors (independent of country-specific variables) influencing the average pattern of deregulation in OECD countries. As will be shown in the next section, estimation results remain substantially similar across different model specifications.

4. Results

The estimation results are presented in Table 2. We have considered 15 panel model specifications, which are constructed in such a way that multicollinearity problems are avoided. Notice that the model specifications from (1) to (15) show an increasing

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explicative power, as we progressively add control variables. In the last specification –
(15) – the *R*-square indicates that the proportion of variability in liberalization
outcomes that is accounted for by the statistical model is almost 80%.

In all the model specifications in which the governments' political orientation dummies
are included, we find that left-oriented governments have a positive and statistically
significant effect on the observed level of economic liberalization. Conversely, right-
oriented governments do not show statistically significant effects in most of the model
specifications, while they show a positive and statistically significant effect in models
(11), (13), (14) and (15). Notice, moreover, that the estimated effect of right-wing
governments on liberalization always shows a lower intensity and a lower statistical
significance than those of left-wing governments.

It is worth emphasizing that we estimate the effect of left-wing and right-wing
political ideology with respect to centrist or non-classifiable governments (as they are
defined in the Appendix); thus, what we are able to infer is the effect of a given political
orientation relative to another and not the absolute effect. It follows that our result
must be interpreted as a sign of an influence of left-oriented governments on
liberalization which is greater than that of right-oriented governments, while our
estimation result does not indicate that right-wing executives do not liberalize in
absolute terms.

With respect to the institutional determinants of liberalization in network industries,
we obtain several interesting results. First, we find that the government's
heterogeneity (*GovHeterogeneity*), which is a proxy of the political fragmentation of the
government, has a positive influence on liberalization. Second, model specifications (3),
(7), (8), (10) and (11) show that the margin of majority of the government's parties
(*Majority*) has a negative effect on the level of economic liberalization, which is
consistent with the previous result. Third, in model specifications (7) and (8) we also
find a positive effect of proportional representation systems (*Proportional*). The
variables *AllHouse*, *YearsInOffice* and *YearsLeft*, on the other hand, do not turn out to
be statistically significant.

When we move to consider pre-existing country economic conditions, we obtain
further interesting results. Model specifications (12), (13), (14) and (15), indeed, show
that the strictness of the employment protection legislation (*EmplProtection*) is a
negative and statistically significant influence on economic liberalization, and so too is
the relative amount of employment in industry (*Employment*), as shown in model (15).

Supranational drivers of liberalization initiatives may be important as well. In particular, model specifications (13), (14) and (15) show that EU membership (EUMember) plays a positive and statistically significant role in the reduction of entry barriers. A positive and statistically significant effect is also found for the introduction of the euro (as has already been suggested by Høj, Galasso, Nicoletti, and Dang (2006)), as is shown by model specification (12). Estimated coefficients suggest, in particular, that the effect of EU membership is greater than that of adoption of the euro.

Finally, models (12) and (15) reveal that the country's GDP (*Gdp*) has a negative effect, while models (12), (13) and (15) show that the GDP per capita (*GdpPerCap*) has a positive one. According to model specification (11), the legal family (*CivilLaw*) seems to be statistically irrelevant.

As a robustness check, in model specifications (14) and (15), we have added to country- and time-fixed effects respectively the one-year-lagged value of deregulation and a linear time trend, in order to estimate the (possibly) relevant effect of time patterns that are virtually constant across countries. While the estimated parameters relating to both these additional factors turn out to be positive and statistically significant, our main results do not change and are shown to be robust across the different specifications. Specifically, the positive effect exerted by the one-year-lagged value of deregulation indicates that liberalization policies follow a path in which past initiatives stimulate subsequent interventions, in a progressive process characterized by a ratchet effect. This confirms a strong path-dependency effect of liberalization policy in network industries.

The diagnostic analysis, furthermore, allows us to reject the null hypothesis of joint statistical insignificance of all the parameters, in all the considered model specifications. Consistently, our findings show that partisanship and political institutions have a significant, predictable impact on the intensity of liberalization policy in network industries, with left-wing parties choosing higher levels of liberalization compared to right-wing parties.[6]

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[6] Notice that unreported GLM estimations, in which we add alternatively time and country dummies, show substantially similar final results. These estimations are available upon request.

Variable	(1) PANEL Coef.	(Std.Err.)	(2) PANEL Coef.	(Std.Err.)	(3) PANEL Coef.	(Std.Err.)	(4) PANEL Coef.	(Std.Err.)	(5) PANEL Coef.	(Std.Err.)	(6) PANEL Coef.	(Std.Err.)	(7) PANEL Coef.	(Std.Err.)
Left	0.430	(0.197) **	0.473	(0.204) **	0.545	(0.225) **	0.432	(0.200) **	0.415	(0.198) **				
Right	0.240	(0.193)	0.161	(0.198)	0.342	(0.221)	0.242	(0.197)	0.212	(0.195)				
GovHeterogeneity			0.903	(0.354) **							0.689	(0.344) **		
Majority					-2.419	(0.381) ***							-2.513	(0.383) ***
AllHouse							-0.292	(0.187)						
YearsInOffice									0.025	(0.020)				
Proportional													2.913	(0.539) ***
YearsLeft														
GovDebt														
Employment														
EmplProtection														
Gdp														
GdpPerCap														
Euro														
EUMember														
CivilLaw														
Deregulation														
Trend														
Constant	1.648	(0.163) ***	1.466	(0.195) ***	3.240	(0.305) ***	1.729	(0.169) ***	1.565	(0.176) ***	1.785	(0.103) ***	1.352	(0.503) ***
Time and country FE	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Time and country RE	No		No		No		No		No		No		No	
Number of obs.	805		782		681		795		802		782		666	
F-Statistics	7.02		6.68		7.54		6.22		6.77		7.05		8.76	
H_0: $b_i=b_j=0$ (*p*-v.)	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
R-sq.	0.014		0.016		0.078		0.027		0.021		0.002		0.001	

Note: * = 0.10 confidence level, ** = 0.05 confidence level, *** = 0.01 confidence level.

TABLE 2. *(Continued)*

Variable	(8) PANEL Coef.	(Std.Err.)	(9) PANEL Coef.	(Std.Err.)	(10) PANEL Coef.	(Std.Err.)	(11) PANEL Coef.	(Std.Err.)	(12) PANEL Coef.	(Std.Err.)	(13) PANEL Coef.	(Std.Err.)	(14) PANEL Coef.	(Std.Err.)	(15) PANEL Coef.	(Std.Err.)
Left	0.488	(0.233) **	0.464	(0.206) **	0.515	(0.234) **	0.574	(0.224) ***	0.432	(0.161) ***	0.586	(0.273) *	0.446	(0.215) **	0.224	(0.096) **
Right	0.251	(0.230)	0.167	(0.202)	0.313	(0.230)	0.368	(0.221) *	0.226	(0.159)	0.526	(0.277) *	0.408	(0.218) *	0.180	(0.095) *
GovHeterogeneity			0.845	(0.368) **											-0.100	(0.141)
Majority	-2.597	(0.384) ***			-2.349	(0.391) ***	-2.311	(0.379) ***								
AllHouse			-0.160	(0.199)	-0.214	(0.196)	-0.239	(0.185)							0.042	(0.073)
YearsInOffice			0.020	(0.021)	0.038	(0.024)	0.042	(0.023) *							-0.008	(0.008)
Proportional	2.888	(0.537) ***														
YearsLeft			-0.010	(0.043)	0.013	(0.046)	0.010	(0.045)							-0.019	(0.016)
GovDebt											0.007	(0.006)	0.007	(0.004)		
Employment													0.058	(0.035)	-0.057	(0.014) ***
EmplProtection									-1.259	(0.119) ***	-1.056	(0.186) ***	-0.757	(0.148) ***	-0.326	(0.078) ***
Gdp									-0.001	(0.000) **	0.001	(0.001)	-0.001	(0.000) **	-0.001	(0.001)
GdpPerCap									0.001	(0.000) ***	0.001	(0.000) ***	-0.000	(0.000)	0.001	(0.000) ***
Euro									0.422	(0.149) ***						
EUMember											1.584	(0.237) ***	1.165	(0.183) ***	0.347	(0.074) ***
CivilLaw							-0.064	(0.428)								
Deregulation															0.967	(0.041) ***
Trend													0.259	(0.026) ***		
Constant	1.109	(0.535) ***	1.461	(0.239) ***	3.118	(0.348) ***	3.190	(0.385) ***	-1.278	(0.444) ***	-4.562	(1.005) ***	-3.852	(1.275) ***	1.834	(0.514) ***
Time and country FE	Yes		Yes		Yes		No		Yes		Yes		Yes		Yes	
Time and country RE	No		No		No		Yes		No		No		No		No	
Number of obs.	782		681		795		672		538		204		193		465	
F-Statistics	8.42		6.14		6.57		--		31.87		18.93		12.54		19.73	
H₀: $b_i=b_j=0$ (*p*-v.)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
R-sq.	0.001		0.023		0.088		0.091		0.416		0.415		0.241		0.793	

Note: * = 0.10 confidence level, ** = 0.05 confidence level, *** = 0.01 confidence level.

Our main findings contrast with some statistical results in extant empirical literature (e.g., Pitlik, 2007; Potrafke, 2010). While we find that left-wing governments have a positive impact on liberalization in network industries and that the effect of right-wing governments is lower in terms of both estimated intensity and statistical significance, previous investigations, considering a shorter period and a smaller sample, show the opposite. We believe that such a difference is mainly due to two elements.

On the one hand, we use different variables in order to account for the effect of governments' political ideology. For instance, the two indices used by Potrafke (2010) are compact variables which oppose left with right and which weight the ideology scores with the government party's relative share of seats in parliament; similarly, Pitlik (2007) measures political orientation of governments by means of a five-year averaged index of left-wing party cabinet positions over total cabinet seats.

The World Bank (2008) index that we use, in contrast, is composed of a set of three dummies that allow us to study separately the effect of right-wing and left-wing governments with respect to that of non-classifiable governments, which are considered as the reference group. Moreover, we do not weight the index for the relative lawmaking power of the executive's leading party, while we include various measures of lawmaking power of governments as separate covariates.

On the other hand, we consider a longer period than that examined by previous literature along with a larger set of factors. Our estimation results partially converge with those of Pitlik (2007) and Potrafke (2010) when we restrict our analysis to the 1975-1999 period, as unreported estimations show.

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5. Discussion

Our analysis confirms that *politics matter* for liberalization of network industries (Duso, 2002; Høj, Galasso, Nicoletti, and Dang, 2006; Pitlik, 2007; Potrafke, 2010). The conclusion we reach - that right-wing governments on average liberalize less than left-wing ones - while reversing related literature, is rather general, being found in all the specifications analyzed and taking into account the existing regulatory conditions that executives are faced with when elected. This means that our results are fairly robust and are not affected by initial local conditions, in one sense or another.

Figure 4 outlines the estimated liberalization trends of left-wing governments for each of the model specifications reported in Table 2, in which political orientation dummies are included. Trends are calculated considering the estimated effect of having a left-wing government rather than another one, starting from an initial situation of null liberalization, and considering this effect, for each time interval, with respect to the previous level of liberalization. As we can see, all the model specifications confirm a significant growing trend in left-wing liberalizations. The one referring to the last specification (15), which includes the largest set of control variables, shows a similar but flatter trend. Figure 4 also outlines the strong path-dependency effect we actually found for every political color in office. The level of past deregulation turns out to be particularly relevant, suggesting that liberalization processes follow a progressive path with a ratchet effect, both for the aggregate indicators and for sectoral ones.

 Moreover, as the estimated positive effect of the autoregressive component suggests, rather than observing strong discontinuity and shocks, we registered a gradual implementation of liberalization policies. This implies that once a liberalization process is launched, its intensity may depend on the political color of the party in office, but it is never retracted.

FIGURE 4
Estimated liberalization trends of left-wing governments (coefficients derived from Table 2).
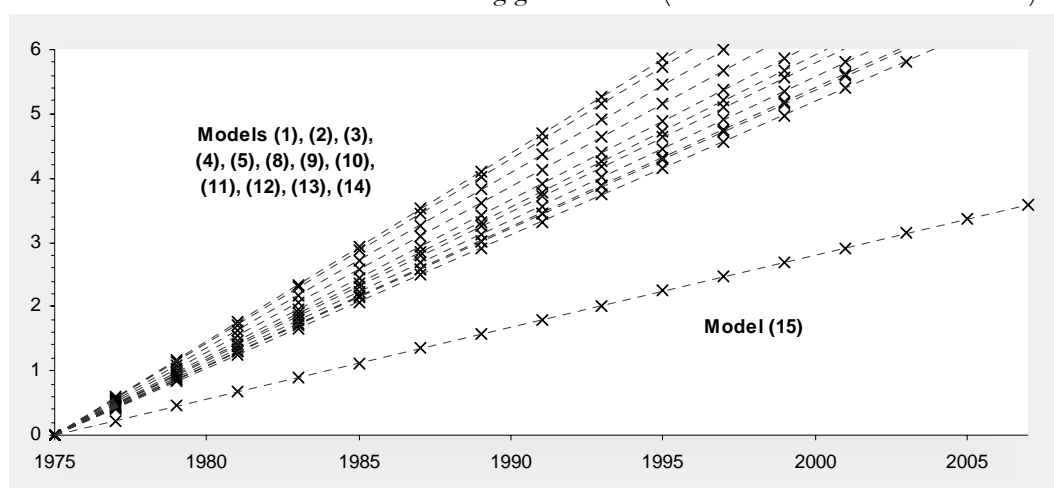
Surprisingly, we did not find a statistically significant effect of legal origins on network industry liberalization, contrary to what might be expected according to the general insights of La Porta *et al.* (1999) and Pitlik's (2007) findings for liberalization policies. We cannot however exclude that this could be due to the strong role played by the country-specific variables that we considered in our analysis, which are partially correlated with the legal origin of nations. Some legal scholars, in addition, have recently cast doubts on the assumption that legal origins are the foundation of legal institutions and economic outcomes (see, for example, Roe, 2006).

As to political determinants, our findings contrast with the empirical literature available so far (Pitlik, 2007; Potrafke, 2010), probably due, as we argued, to the broader dimensions of the sample we study - both in terms of OECD countries included and number of years covered – and to the different indicator we adopted for governments' political color, with respect to previous analyses.

The 'political economy of economic policies' so far has simply neglected the left-wing issue, falling into line with conventional wisdom, confirmed by the empirical literature, on significantly greater right-wing adoption of *other* market-oriented policies, such as privatization. However, the liberalization paths we observed in network industries force us to give a reason for the political-economic rationale behind them. Here, we do not attempt to solve this puzzle; rather we simply raise insights and questions - applying only to network industries - for further research on the issue.

Based on insights coming from the literature on political determinants of economic policy, we briefly outline five main motivations, not necessarily mutually exclusive, for

a *left-wing liberalization rationale* in network industries:

a) *liberalization as the result of crossing ideological divides and/or policy diffusion;*

b) *liberalization as a 'policy reversal';*

c) *liberalization as a signal towards swing voters under political competition;*

d) *liberalization as a weak, institutionally determined, market-oriented policy;*

e) *liberalization as a 'new' left-wing policy.*

In discussing left-wing motivations for liberalization in network industries we also analyze whether such motivations are consistent with the evidence we found, with particular reference to the apparent decline in right-wing liberalization intensity.

A. THE BREACHING OF IDEOLOGICAL CLEAVAGES AND THE ROLE OF POLICY DIFFUSION

A first possible motivation for a left-wing liberalization rationale in network industries is summarized in the following question: are left-wing policy-makers breaching ideological cleavages, by shifting their political platform 'to the right'?

This argument derives from the idea that economic liberalization may have created 'a new issue cleavage that has disturbed existing party systems. In some cases, it has narrowed and blurred partisan policy differences; in others, it has caused these differences to widen and become more distinguishable to the median voter. In yet others, it may have left the scope of partisan differences unchanged, but nonetheless prompted a partisan realignment. The alteration of the terms of political competition, in turn, has provoked changes in the nature of political representation' (Hagopian, 2001).

In a sense, this view entails the relationship between social class and voting behavior, and claims that a progressive decline is observed during the last decades over 'class voting' (Clark and Lipset 2001; Nieuwbeerta and De Graaf 1999), as social class schemes may undergo abrupt changes in post-industrial society (Butler and Savage 1995; Esping-Andersen 1993, 1999; Hout *et al.* 1995; Kriesi 1989; Manza and Brooks 1999). In this respect, the race towards liberalization policy (Pitlik, 2007), which has characterized OECD countries in the last three decades (Conway and Nicoletti, 2006), may be the result of changes in the social structure and hence in political competition. As a consequence, liberalization became a post-ideological 'must have' item in political

parties' policy toolkits, irrespective of traditional cleavages. According to this view, liberalization policies should be deemed as neither rightist nor leftist, but simply as a common mandatory feature of modern globalized economies (Ross, 2000).

As to globalization processes, since parties in office 'have to satisfy two constituencies, one internal and the other external, with the very existence of the latter inhibiting the development of the former' (Innes, 2002), policy diffusion and international 'clustering' may have induced or even reinforced the above effect, 'forcing' bipartisan liberalization.

The argument that supranational determinants might accelerate liberalization, regardless of governments' political color, is confirmed in our analysis of the role played in network industries' liberalization by European Union membership and by a country's adoption of the euro (Høj, Galasso, Nicoletti, and Dang, 2006). This evidence, in our view, confirms the relevance of policy diffusion theories, as well as the empirical relationship observed between globalization and liberalization (Levi-Faur, 2003; Simmons and Elkins, 2004; Clifton, Comin and Diaz Fuentes, 2006; Pitlik, 2007). However, it must be said that these two interdependent interpretations (the breaching of ideological cleavages and the role of policy diffusion) only partially fit with our findings. Indeed, as the result of bilateral political competition for the middle-class voter on the one side – which typically induces political parties not to compete on policies (Downs, 1957; Roemer, 2001) - and of international policy diffusion on the other, we should have found accordingly not only bipartisan liberalization, but also a similar intensity of liberalization adoption, for both left-wing and right-wing parties.

On the contrary, what we find is a significant right-wing/left-wing divide and asymmetric patterns, with an increasing intensity over time of left-wing liberalizations coupled with a decline in right-wing ones. This result reveals that something would be missed if we rely exclusively on the policy diffusion hypothesis as an explanation for the observed left-wing liberalization wave.

B. LIBERALIZATION AS A POLICY REVERSAL

A second rationale for left-wing policy-makers' implementation of a market-oriented swing in the shape of liberalization, has been identified, among others, by Rodrik (1993) and Cukierman and Tommasi (1998). It goes under the label of 'policy reversal'.

These authors argue that a *policy switch* between right-wing and left-wing parties, with respect to their traditional policy platforms, turns out to be optimal under given circumstances.

The intuition behind this is that governments have private information on the current state of the economy in general and on a political issue in particular. Given that, policy makers take their decisions in order to maximize the interest of the majority of voters. Thus, in order to gain consensus from the largest part of the electorate, governments have to transmit to the public their private information about the relative desirability of a given policy. However, the success of policy announcements will depend on the political party's credibility when transmitting information and motivation to the public. A political party will turn out to be more credible the greater is the distance of the policy announced from its political 'ideal point'. As a consequence, moderate right-wing policies are more likely to be implemented by right-wing parties (and similarly for the left), but extreme right-wing policies are more likely to be implemented by left-wing parties (and vice versa).

The reason for this is that, though a policy reversal, 'the public has less reason to suspect that the right-wing policy is proposed solely because of the natural ideological tendencies of the party in office, i.e., it may be perceived as an objectively motivated policy'. In this situation, 'extreme' policy options when announced by the political party which is traditionally less close to them, likely reduce political discontent. However, one of the main conditions for this outcome is that the policy switch that is desirable (for the majority of voters) 'should be considerable and relatively rare'.

We should then ask whether left-wing liberalization of network industries falls into the category of 'policy reversals'. The answer is negative on two grounds.

On the one side, it is true that liberalization is generally perceived to be closer to right-wing 'ideal points' rather than to left-wing ones. However, it is neither 'extreme' nor 'considerable' as other market-oriented policies, such as privatization, would be. In our view, liberalization rather envisaged a right-wing 'moderate' policy, and thus, according to Cukierman and Tommasi (1998) it should be routinely implemented by right-wing governments, which contrasts with our findings attributing a higher intensity for liberalization of network industries to left-wing parties in office.

On the other side, should liberalization deemed as an 'extreme' right wing economic policy, the theory of policy reversals may explain the asymmetric patterns observed respectively for left-wing and right-wing governments. However, this would

somewhat contrasts with the vast and convergent empirical findings, reported in section 2 above, showing how privatization (which in our view is more extreme than liberalization as to ideological cleavages) is generally adopted by right-wing governments.

However, to be a typical case of 'policy reversal', under the conditions outlined by Cukierman and Tommasi (1998), left-wing liberalization should be a 'relatively rare', one-shot policy, and thus we should expect dramatic shocks, concentrated in time, for left-wing liberalization, rather than the observed gradualism and continuity over time. All in all, the theory of policy reversals may hardly provide an unambiguous rationale for the observed path in left-wing and roght-wing liberalizations.

C. LIBERALIZATION AS A SIGNAL TOWARDS SWING VOTERS UNDER POLITICAL COMPETITION

Another possible interpretation for our results may rely on the argument that the asymmetric liberalization patterns observed between left-wing and right-wing parties reveal a *signaling strategy* adopted by left-wing parties to attract otherwise right-leaning middle class voters (Downs, 1957). Thus, this motivation for a left-wing liberalization rationale does not rely on convergent bipartisan liberalization, but rather on a specific left-wing strategy to win political competition. The argument might go as follows: by restructuring the economy and minimizing rent-seeking - through market discipline in liberalized sectors dominated by state-owned incumbents - left-wing parties may attempt to attract median voters otherwise tempted to vote for right-wing parties. This interpretation thus mirrors somehow the one provided by Biais and Perotti (2002) for the Right's privatization rationale, based on a strategic signaling to win support from (left-wing) median voters (see section 2 above). Moreover, this explanation is in line with the idea that political competition may induce political parties in office to adopt those market oriented policies which increase economic growth (Besley, 2007; Besley, Persson, Sturn, 2010).

However, it may only hold under specific conditions of political and electoral competition. In seeking to gain middle-class voters' support through liberalization, left-wing parties may risk losing some of their own constituents, who may decide to abstain from voting or may even choose to vote for another left-wing competitor,

should it be available. When the latter effect dominates, 'self-interested' left-wing parties will be induced not to compete for middle-class voters. Consequently, in a political arena where middle-class voters make the difference, a left-wing party may have interest in maintaining at least the portion of its own voters which is sufficient to win the elections (Belloc and Nicita, 2010b).

Our empirical results highlight the need for some caution on this conclusion, liberalization being negatively correlated with employment protection legislation and with the amount of employment in industry. Thus, on the economic side, strict legislation on employment protection may reduce, as a barrier to entry, new entrants' incentives to challenge incumbents' market power in network industries, thus weakening the credibility and even the expected impact of liberalization; while, on the political side, left-wing liberalizations may generate short-term adjustments and unemployment in a country's work-force, as a consequence of the restructuring of former legal monopolies, with offsetting effects on some left-wing constituents.

Left-wing parties' ability to credibly liberalize in order to gain the political support of otherwise right-leaning middle-class voters, may thus strictly depend on their ability to extend their traditional platform 'to the right', while constrained by their constituents' preferences.

In this respect, some authors argued that one way to measure the 'distance' between partisan constituents and middle-class voters is the level of income inequality (Biais and Perotti, 2002). The intuition is that unequal societies tend to be politically polarized, 'squeezing' the size, and thus the marginal value for political competition, of middle-class voters. Should this assumption turn out to be correct, we would expect, other things being equal, *more* left-wing liberalization in countries with *less* income inequality. In a companion paper we test this assumption and find a statistically significant negative correlation between the level of income inequality and liberalization rates by left-wing government (Belloc and Nicita, 2010b). Feedback effects in both directions (inequality-liberalization) cannot be ruled out, even if income equality 'explains' left-wing liberalization, while the opposite causal relation turned out to be non-significant.

Besides, since the nature of the ideological cleavage constraints by standard constituents depends, for left-wing parties, on whether or not there is credible competition on their left side of the political market (Stigler, 1972; Roemer, 2001), one should expect a less 'moderate' policy by left-wing parties in countries with multi-

party competition and low barriers to entry into the political competition arena (Palfrey,1984; Plümper and Martin, 2008), unless left-wing parties may form a winning coalition with 'centrist' parties (see below, D). As a consequence, when the probability of winning an election with a homogeneous coalition dominates, we should expect majoritarian systems to favor (left-wing) liberalization more than proportional electoral systems would (Osborne, 1995; Besley, 2007).

In this respect, our findings raise another puzzle, showing a positive and statistically significant influence of proportional electoral rules on liberalization. Thus, in order to test the validity of the interpretation of left-wing liberalization as a signal towards swing voters, one should investigate in detail the degree of electoral competition and the specificity of the countries' electoral systems.

It should be pointed out that we are focusing here on just one issue of parties' political platforms, while political competition is typically multi-dimensional (Roemer, 2001). A left-wing party may well use liberalization of network industries as a market-oriented *compensating* policy, within a political platform which massively redistributes toward traditional constituents through other policy tools. This would be consistent with our evidence that the heterogeneity of governmental coalitions exerts a positive influence on the liberalization rate (see below D).

To conclude, the significant left-wing liberalization wave registered from the Nineties onward could be explained as an attempt to find a strategic 'third way' positioning (Giddens, 1998), after the fall of communism. Italy, in this respect, is an important benchmark: the Nineties were largely characterized by left-wing governments, with the participation of former communist parties, who significantly launched liberalization and privatization programs and appointed Antitrust and Regulatory Authorities. However, our analysis and data set can neither support nor exclude this interpretation which, in order to be verified on specific grounds, needs to measure the evolution and distribution of voters' preferences in each country.

Finally, while the intuition that left-wing liberalization may act as a signal towards middle-class voters could explain – with the caveats outlined above – why left-wing governments liberalize, it does not provide any argument supporting our evidence that right-wing governments liberalize comparatively less and with decreasing intensity.

D. LIBERALIZATION AS A WEAK, INSTITUTIONALLY DETERMINED, MARKET-ORIENTED POLICY

The three motivations provided above all imply that left-wing parties take their policy decisions 'against' their own traditional ideological adherences. Thus the underlying assumption is that liberalization is a kind of pro-market policy mirroring a right-wing adherences .

A fourth different rationale for left-wing liberalization could be made with reference to the institutional political environment within which political parties decide their policies. This argument relies on the idea that when a heterogenous coalition is in office and/or when governments are elected under proportional electoral systems, the joint exercise of veto powers might select 'second-best' policies. Thus, the observed path on liberalization policies might be explained as the result of respectively, right wing and left-wing concessions, to other parties in the coalition.

FIGURE 5.

Economic liberalization and government heterogeneity.
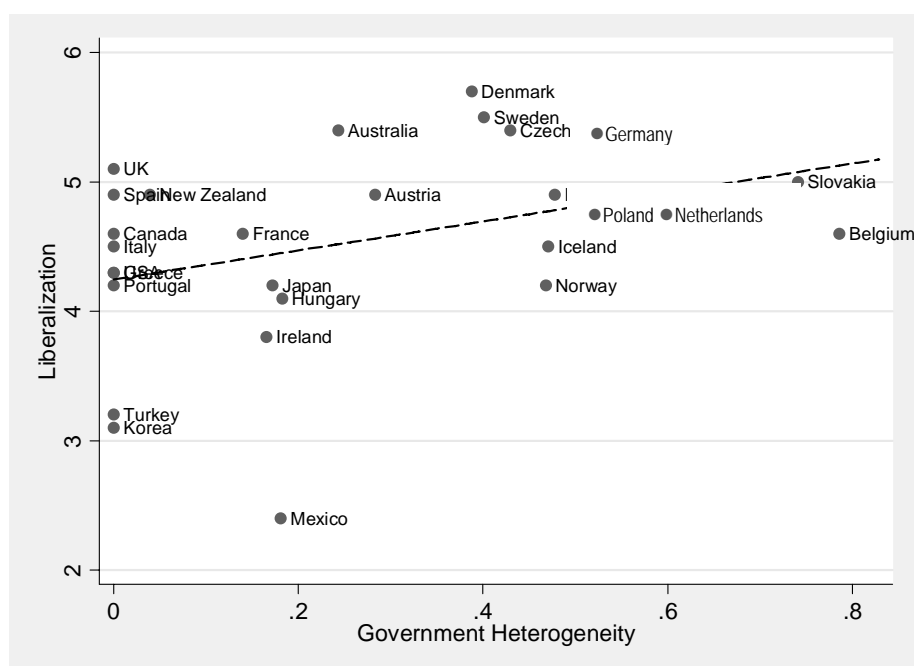
Note: data are the most updated available (2006). See Section 3 for variables' definition.

In particular, when left-wing parties are in office liberalization might be adopted either as a way to deter stronger market-oriented policy such as the decision to privatize (Bortolotti and Pinotti, 2008), or as a way of conceding 'some' market-oriented policy

to other coalition members with different political leanings, in exchange for redistributive policies towards left-wing constituents.

Similarly, when right-wing parties are in office, liberalization might be adopted as a second-best when other parties in the coalition contest decisions to adopt stronger big bang market oriented policies such as privatization.

Thus in some weak political-institutional settings, liberalization could be adopted as the weakest acceptable market-oriented policy by right-wing parties and as the strongest one by left-wing parties.

Our analysis of the role of government heterogeneity in promoting liberalization, confirms a positive and statistically significant effect on entry liberalization in the seven markets considered for the 30 countries analyzed. This result was further corroborated by the fact that the margin of majority of the government parties shows a negative effect on the level of economic liberalization, and it is also consistent with the positive and statistically significant correlation we find between the extent of liberalization and proportional representation systems.

Moreover, if we interpret the degree of heterogeneity of the coalition in office as a mesure of political competition, our results confirms the arguments that political competition may induce political parties in office to adopt those market oriented policies which increase economic growth (Besley, 2007; Besley, Persson, and Sturm, 2010).

However, our data set does not allow us to fully test empirically the above arguments. Futhermore two puzzle arise: why right-wing parties should libralize less than left-wing ones, under political competition? why left-wing parties liberalize more than right-wing ones even in governments characterized by homogeneous coalitions and in systems which adopt majoritarian electoral rules?

E. LIBERALIZATION AS A 'NEW' LEFT-WING POLICY

Finally, we focus on an opposing rationale to the first three (A, B, C) outlined above: the observed liberalization wave, rather than being a left-wing crossing of ideological cleavages, could be well motivated as a 'new' left-wing policy tool aimed at maximizing the interests of a left-wing party's *own* constituents *against* right-wing adherents.

This argument has been recently pointed out by Alesina and Giavazzi (2007), under the slogan 'Economic liberalism is left-wing'. The argument runs that '[the] Left should learn to love liberalism', since market-oriented policies imply shifting financing from taxpayers to the users themselves and, as such, they tend to eliminate rents and to increase productivity. As a consequence, 'goals that are traditionally held dear by the European left − like protection of the economically weakest and aversion to excessive inequality and un-earned rewards to insiders − should lead the left to adopt pro-market policies'.

These authors argue that liberalization policies (actually, not only the ones limited to network industries) reduce inequality, thus admitting that left-wing governments should implement these policies especially when a high level of income inequality is observed. Liberalization of network industries is thus deemed as a way to indirectly redistribute rents towards final low-income worker-customers, and to grant universal access obligations and minimal level of quality (Kwoka, 2005; Armstrong and Sappington, 2006).

However, Alesina and Giavazzi's argument disregards the real possibility that under high income inequality levels, it might be unlikely for a left-wing party to launch 'strong' liberalization programs - unless succeeding in 'advertising' these as 'policy reversals' (Rodrik, 1993; Cukierman and Tommasi, 1998). Precisely because their own constituents might be reluctant to sustain policies which *might be* welfare-improving in the long term, but that might be perceived as *being certainly* detrimental in the short term, left-wing parties may abstain from strong 'liberalization' under high income inequality. How inequality affects the preferences of core constituencies of parties of the Left and the Right and, as a result, the policy positions on liberalization adopted by parties of the Left and the Right, is crucial here.

As mentioned above, in a companion paper (Belloc and Nicita, 2010b) we have found that the degree of left-wing liberalization is negatively correlated with income inequality. We argued that causality is more likely to run from inequality to liberalizations of network industries, suggesting that left-wing parties tend to liberalize more in less unequal societies, rather than vice versa (Figure 6).

Our intuition on a positive correlation between inequality and policy polarization is confirmed by several studies (Pontusson and Rueda, 2005).

Under the assumption that inequality stimulates alignment to ideological cleavages and squeezes median voters (Biais and Perotti, 2002), and that rising inequality will be

associated with more redistribution (Romer 1975; Meltzer and Richard 1980), we ascribed our result to a political rationale that induces left-wing parties to 'polarize' their policies as income inequality grows (thus the opposite of 'political reversal').

FIGURE 6
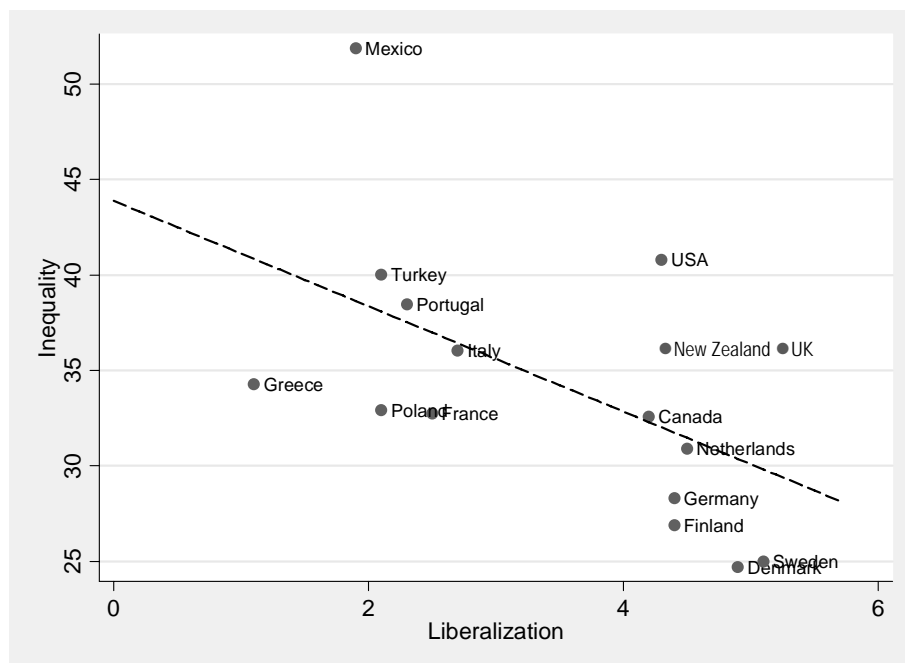
Note: data on income inequality (Gini index) are obtained by World Bank (2009). Both liberalization and Gini values refer to 2000. Only countries having a left-wing government in 2000 are included. Source of the graph: Belloc and Nicita (2010b).

Thus left-wing might decide to liberalize as inequality decreases and not because liberalization is a policy tool that reduces inequality. It is worth noticing that in this paper, we find a positive and significant effect of per capita GDP on liberalization.

Given that, a trade-off then might emerge between the economic impact of liberalization in reducing income inequality and a left-wing party's actual incentives to adopt 'strong' liberalization policies under high inequality.

The paradox here is that the likelihood of having left-wing liberalization policies will be higher precisely when they are needed less in Alesina and Giavazzi's view, as their redistributive impact will be less relevant for a society with lower income inequality. All in all, our findings in this paper can neither support nor exclude the argument that left-wing parties adopt liberalization as a redistributive policy tool. However if liberalization is really deemed to be a left-wing policy, this might explain the divergent path we observed in left-wing and right-wing intensity.

6. Conclusions

According to conventional wisdom, right-wing parties should, in principle, promote market-oriented outcomes, as this is embedded in their traditional ideological adherences. This prediction has been confirmed by many empirical findings with reference to privatization policies. Some recent empirical findings seem to confirm these results also for liberalization policies in network industries, arguing that the likelihood of liberalization increases under majoritarian rules and right-wing governments.

Firstly, looking at some stylized facts we have argued that these results contrast with single-nation case studies, such as Austria, Canada, France, Italy, Mexico and Sweden among others, where left-wing governments have significantly introduced liberalization in network industries.

Then we have investigated, through an econometric analysis, whether right-wing governments have been more active in adopting liberalization of network industries than left-wing ones, and whether homogeneous coalitions and majoritarian systems have induced a higher level of liberalization of network industries than heterogeneous coalitions and proportional electoral systems have done. Our sample included the largest and most updated data set available on 30 OECD countries, provided by the latest releases of ETCR economic indicators for the liberalization of seven network industries (OECD, 2009) and by political indicators of the World Bank's Database of Political Institutions (World Bank, 2009). This allows us to study a larger group of countries with respect to previous empirical studies and to perform the first econometric analysis that considers the entire liberalization wave observed in OECD countries from the Seventies to date. By so doing, we show that a study of the liberalization wave in its entirety reverses the findings reached so far by empirical literature on liberalization of network industries.

Contrary to traditional ideological cleavages, we find that right-wing governments liberalize less than left-wing ones. This result is confirmed when controlling for the existing regulatory conditions that executives find once elected.

In particular, in all the model specifications in which we have included the executive's political orientation dummies, we have found that left-oriented governments had a positive and statistically significant effect on the observed level of economic

liberalization, while right-oriented governments did not show statistically significant effects or showed a smaller one. We have found also that EU membership and adoption of the euro strongly encouraged liberalization policies.

We believe our findings are relevant in two main respects.

First, they question the conventional wisdom predicting that *all* market-oriented policies – including liberalization and privatization in network industries – are almost exclusively adopted by right-wing governments, as the consequence of traditional ideological cleavages for governments' policy choices. We show not only that left-wing governments do liberalize network industries, but that they progressively even increased the intensity of liberalization over time, in almost all the seven sectors studied. On the contrary, right-wing liberalization registered a smooth, but significant, decline. This conclusion implies that, for some reasons to be further investigated, liberalization of network industries differs from other market-oriented policies in terms of its political appeal and rationale. Thus, one first consequence of our investigation is that the measurement of political determinants of market-oriented policies in network industries should disentangle liberalization and other deregulation policies.

Secondly, our results raise a new puzzle with more general implications for the theoretical analysis of the political-economic meaning and extent of liberalization policy in network industries: why do left-wing parties in office liberalize, and why do they seem to liberalize, on average, to a greater extent than right-wing governments do?

In discussing our results we have, in particular, outlined five main alternative rationales for left-wing parties' liberalization of network industries. These theoretical insights have been recalled just to mention some relevant counter-arguments to the superficially self-evident thesis that right-wing governments should always maintain the same aligned incentives towards privatization and liberalization. We argue that existing theoretical arguments regarding political determinants of market-oriented policies do not provide unambiguous criteria to support the existence of a clear Left-Right divide on liberalization mirroring the one theorized and observed for privatization.

To conclude, a comprehensive theoretical framework is still needed in order to understand the economic and political rationale, respectively, for right-wing and left-

wing parties to hinder or promote liberalization policy in network industries.

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Appendix: main indicators' description.

TABLE 3. Description of the dependent variable and the government's ideology variables.

Variable	Description
Liberalization	We calculate the variable *Liberalization* by subtracting the OECD's (2009) entry barriers measure from its maximum value. The OECD's (2009) entry barriers index is calculated by OECD as the simple average of seven sectoral indicators that, in turn, measure the strictness of the legal conditions of entry in the seven non-manufacturing sectors. The OECD's (2009) sectoral indicators focus on sector-specific aspects of entry regulation, as follows. **Passenger air transport**: the focus is on open skies agreements with the USA, regional agreements, and restriction on the number of domestic airlines allowed to operate on domestic routes. **Telecom**: the focus is on the legal conditions of entry into the trunk telephony market, the international market, and the mobile market. **Electricity**: the focus is on the conditions of third-party access to the electricity transmission grid and on the conditions of the competition in the market for electricity. **Gas**: the focus is on the conditions of third-party access to the gas transmission grid, on the share of the retail market open to consumer choice, and on the existence of any regulation that restricts the number of competitors allowed to operate in the market. **Post**: the focus is on the existence of any regulation that restricts the number of competitors allowed to operate in the national market of basic letter services, basic parcel services, and courier activities. **Rail**: the focus is on the legal conditions of entry into the passenger and the freight transport rail markets. **Road**: the focus is on the criteria considered in decisions on entry of new operators.
Left	Dummy variable that equals 1 for parties that are defined as social democratic, left-wing, communist, socialist (source: World Bank, 2008).
Right	Dummy variable that equals 1 for parties that are defined as conservative, Christian democratic, or right-wing (source: World Bank, 2008).
Other	Dummy variable that equals 1 for parties that are defined as centrist, and for all those cases which do not fit into the above-mentioned categories (e.g. party's platform does not focus on economic issues), or no information (source: World Bank, 2008).