

# **Co-Evolution Paths of Politics, Technology and Corporate Governance<sup>§</sup>.**

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## **Abstract**

*According to Mark Roe, politics influences corporate governance. The separation between control and ownership is only possible when there is a low "degree of social democracy". By contrast, systems characterised by strong employees' rights are necessarily balanced by strong and concentrated owners. However, as Roe also suggests, causation may also run in the opposite direction: from strong concentrated ownership to strong employees' protection. We argue that this form of two-ways cumulative causation may imply the existence of multiple co-evolution paths of Politics, Technology and Corporate Governance.*

*We focus on two stylized alternative co-evolution paths. In the first, the representation of both owners and employees is divided among many agents ("dispersed equilibrium"), while, in the second, their interests are expressed by few concentrated agents ("concentrated equilibrium"). We argue that there is both theoretical and empirical support for the thesis that the direction of causation from politics to corporate governance form is more relevant in a "concentrated equilibrium" while the direction of causation from corporate governance to politics is more relevant in a "dispersed equilibrium".*

*The paper is structured in three sections.*

*In the first section, we consider the theoretical arguments for which we expect politics to have an important anticipatory role in a "dispersed equilibrium" and a less relevant reactive role in a "concentrated equilibrium" and we consider some stylized facts concerning American and European Histories that seem to support this view.*

*In the second section, we show that there is empirical support for both the hypothesis that causation is running in both directions and also, within the limits of a cross section analysis, for the hypothesis that the relative relevance of the two relations is different in the two equilibria in a way consistent with the arguments developed in the first section.*

*Finally, in the concluding section, we argue that each system may have a comparative institutional advantage in particular types of technologies and in certain productive sectors and that, in turn, this specialization may stabilize the related economic and political arrangements. We conclude considering some effects of globalization on the two systems and, in particular, the consequences of the reinforcement of international IPR protection.*

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## 1. Introduction

Mark Roe (2003) has observed that the separation of ownership and control that characterises many American large firm is not simply due to "better" corporate laws that protect minority shareholders but to the absence of a "social democratic" political pressure that, in absence of strong and present owners, would induce managers to collude with employees. "Social democracy" complicates the well-known agency problem that characterises even the standard American public company. In Roe's approach the direction of causation moves mainly from political ideology to corporate governance forms (even if he points out that also the opposite direction of causation may be important). In our paper we want to stress the importance of the second direction of causation and the circumstances under which it seems to be more relevant.

European systems may be converging to a system where a weaker degree of "social democracy" may allow more separation between ownership and control. However, if social democracy is more a consequence than a cause of a weak separation between ownership and control, a weaker degree of social democracy may simply imply that Europe will lack both the American populist way and its own typical way to tame the power of owners. This may be a serious problem not only for social justice and social peace but also for the efficiency of economic enterprises. On both sides of the Atlantic, efficiency requires that some non-owners make important investments in their enterprises and have some control of their policies.

The paper is structured in the following way. In the following section we consider the relation between politics, corporate governance and productive capabilities of the different countries. We argue that, in general, these relations can be better characterised in terms of institutional complementarities (involving also technological and productive specialization) than as one-way relations and we spell out the general conditions under which we believe that a direction of causation is more relevant. We argue that there is a general argument for which the initial shock is more likely to have come from politics in the case of U.S. type "dispersed equilibria" and from corporate governance relations in case of the European type concentrated equilibria.

In the third section, we consider the empirical relevance of the influence of corporate governance forms on politics in a sample of 20 OECD. We find support for a strong relationship between the degree of social democracy and that of ownership concentration even when the possible spurious influence of reverse causality effect is taken into account. Then we try to consider the empirical relevance of each direction of causation.

Finally in the last section we consider the economic policy implication of our analysis for European corporate governance in a framework where, according to some, the pressure of globalization seem to imply a sort of obligatory convergence to the U.S. model of corporate governance.

## **2. Politics, Corporate Governance Rights and Capabilities**

In his book "Strong Managers, Weak Owners" Mark Roe (1994, p.4) observed:

"Although the defects of separation are today in the spotlight - without their own money on the line managers can pursue their own agendas, sometimes to the detriment of the enterprise - separation of ownership and control was historically often functional (and still is), because it allows skilled managers without capital to run the firm and separates unskilled descendants from control of the firm they could not run well. Sometimes successful founders became poor managers, because their accumulated wealth allowed them to slack off but still live well as historically was a problem in Britain."

Chandler (1990) illustrated this positive aspect of the separation between ownership and control, when he contrasted American and German managerial firms with British firms at the time of the second industrial revolution<sup>1</sup>. While Chandler distinguished between American "Competitive Managerial Capitalism" and "German Cooperative Managerial Capitalism" (where family control had a more important role than in the U.S.), in both countries salaried managers with little or no equity in the enterprises for which they worked participated in making decisions concerning current production and distribution, as well as in planning and allocating resources for future production.

As Roe and Chandler point out, the coordinating role of managerial hierarchies does not simply imply the usual problem that interests of the managers should be made consistent with those of the shareholders but also a broader and, somehow, opposite problem: that of the consistency between the "family allocation of control" and the internal meritocracy of the firm. In order to work well managerial hierarchies have to be organised according to fair rules of advancement in their career that may easily clash with the allocation of jobs that is done on the basis of family connections. In spite of the well-known agency problems, the separation between ownership and control had some

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<sup>1</sup> Chandler argument shows how the pre-existence of an old "organizational species" (that was formed in Britain at the time of the first industrial revolution) can inhibit the formation of a new "organizational species" that was needed to deal with the second industrial organization. For the relation between Chandler thesis and the evolutionary theories of speciation see Pagano (2001).

positive effects because it implied a prevalence of competence allocation rules over family connection rules. While small firms could easily work on the basis of a family allocation of control, this was much harder for large firms and this was a reason for which, in spite of all the agency problems, managerial capitalism was bound to prevail.

The clash between dynastic and competence criteria to assign jobs is an old one and it has certainly preceded the advent of modern market economies. Kings and feudal lords followed dynastic rules while the catholic church did not. Berman (1985) has advanced the fascinating thesis that the papal revolution that occurred at the beginning of the last millennium laid the foundations of modern legal systems and of the first capitalist economy that was developed in Italy in the thirteenth century. One key advantage of the Church was that (at least explicitly) jobs were not assigned on a dynastic basis but were rather given according to the capacity to carry out a (god-given) mission.

In many respects, America with its competing Churches and its early deeply rooted passion for spontaneous rule making was ideally suited to develop institutions where jobs were assigned on a meritocratic basis. Since the beginning<sup>2</sup>, it lacked also the sense of class divisions that underlies the dynastic assignment of many jobs in Europe. American populism created the ideal conditions to fight "economic royalists" who gathered "other's people money" to impose a new industrial dictatorship" (Roosevelt quoted by Roe p.40). Managers' (and, some times, even workers') meritocracy was protected against dynastic interference of wealthy owners who were prevented from concentrating their wealth and exercise much power in the American large firms. The absence of social democracy was somehow related to the feeling that there was not a strong dynastic barrier and able (but poor) people could get economic power in spite that they were not wealthy. In this sense, the absence of social democracy has been not only due to the ideological tradition of American populism but also to the fact (that thanks to this ideology) the economic system and the economic opportunities were really different. There was not a sense of a class bias in the achievement of economic power and no need of containing and eventually eliminating a well-defined centre of economic power. Politics influenced corporate governance but the opportunities offered by the corporate governance system did, in turn, influence politics.

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<sup>2</sup> "In New England, local communities had taken complete and definitive shape as early as 1650. Interests, passions, duties and rights took shape around each individual locality and were firmly attached thereto. Inside the locality there was a real, active political life which was completely democratic and republican. The colonies still recognised the mother country's supremacy; legally the state was a monarchy, but each locality was already a lively republic.

The towns appointed their own magistrates of all sorts, assessed themselves, and imposed their own taxes. The New England towns adopted no representative institutions. As at Athens, matters of common concern were dealt in the marketplace and in the general assembly of all citizens". (Tocqueville, 1994 p. 44). Also the role of competing churches, and in particular the role of puritans did not escape Tocqueville remarkably anticipatory analysis.

The two-way causation between politics and corporate governance is also evident in those countries where, unlike America, there were more class barriers and dynastic policies played an explicit role in both the political and economic sphere. In these economies family dynasties have exercised a power that has interfered with the logic of managerial meritocracy. Wealth, family connections, proper accents, social skills and even appropriate table manners have interfered with the assignment of jobs on the basis of the competence to fulfil a certain mission. One may call "social-democracy" the "political feeling" that people that have not been endowed with these assets have to be defended against the exercise of power of the privileged ones. Instead of blocking the concentration and growth of the power of the wealthy on the corporation, the system limits and, sometimes, challenges the exercise of their power (even if on the whole the exercise of this power is viewed as being legitimate). "Social democracy" may scare owners and make it impossible the separation of ownership and control that characterises the American corporation. However, "social-democracy" was itself a reaction to a system of exercising power that was far more impermeable to non-wealthy people than that characterising American public companies. This closer system is, in turn, the product of a view of the world that, unlike America, had heavily compromised capitalism with the dynastic legacies of pre-capitalist societies. Political ideologies influence the actual way of organizing production and generate new ideologies that again, in a possibly endless, process influence the feasibility and the efficiency of corporate governance.

Thus, dispersed ownership and low degree of "social democracy" are institutional complements. Similarly, concentrated ownership and high degree of "social democracy", are also institutional complements<sup>3</sup>. One way of explaining these relations of institutional complementarity is in terms of reciprocal disarmament and armament. Each group can achieve a higher capacity of exercising power<sup>4</sup> by concentrating dispersed interests. As Marcur Olson (1971) has pointed out, dispersed interests are bound to do worse than concentrated interests. The balance of power can stay the same if both owners and workers stay dispersed or if both are concentrated defining the two following possible equilibria:

*Dispersed ownership*  $\longleftrightarrow$  *Low degree of "social democracy"*

**(Dispersed Equilibrium)**

*Concentrated ownership*  $\longleftrightarrow$  *High degree of "social democracy"*

**(Concentrated Equilibrium)**

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<sup>3</sup> On the notion of institutional complementarity see Aoki (2001).

<sup>4</sup> For a view of power as positional good as case polar to that of public goods see Pagano (1999).

The (dis)armament of one party is a condition for allowing the dis(armament) of the other, and politics can play a role in pushing the institutions of corporate governance towards one equilibrium or the other.

However, this fundamentally symmetric view of the role of politics must be qualified by referring to the fundamental asymmetry of capital and labour. Politics is essential to tame capitalist concentration and to induce workers' unionization but it may be irrelevant in the concentration of capitalist ownership and in the diffusion of the workers' interests. Spontaneous economic forces, by which here we mean ordinary self-seeking behaviour in standard competitive markets, have a tendency to concentrate capital and to disperse labour (or, at least, to concentrate capital more than labour).

**Table 1**

	<b>Capitalist</b>	<b>Labour</b>
<b>Concentration</b>	Economic forces	Political action
<b>Dispersion</b>	Political action	Economic forces

The reason for the fundamental asymmetry, summarised in Table 1, is straightforward.

The ownership of capital can be concentrated, by the means of ordinary market transactions, in the hands of few owners and there will be a spontaneous tendency to do so whenever it increases profits. By contrast, because of non-slavery and self-ownership, the property of labour is necessarily dispersed and the concentration of labour cannot be achieved by the means of standard economic contracts. Politics is required to stop the concentration of capital or to further the concentration of labour interests in trade unions. Economic forces tend to concentrate capital and to disperse labour.

Thus, two possibilities are likely to arise:

a) Politics is able to anticipate the economic forces tending to the concentration of ownership and strong block holders blocking a "concentration" arms race with labour.

The result is a "dispersed equilibrium".

b) Economic forces anticipate political action. The result is a strong asymmetry between concentrated capital and dispersed labour. Political action (and in particular the need of achieving social peace in a democratic society) is stimulated by this asymmetry and results in the concentration and protection of labour interests.

This eventually leads to a "concentrated equilibrium".

Once we are in a "dispersed equilibrium" the successful dispersion of capitalist owners and that of the workers reinforce each other but, in the process of reaching equilibrium, causation is likely to have moved from politics to economics. It is necessary to have a strong policy to anticipate the concentration of capitalist's interests and, in this way, block the fundamental motivation for "social democracy". Similarly, once we are in a "concentrated equilibrium" centralized capitalist interests and "social democracy" reinforce each other but in this case causation is likely to have mainly moved from forms of concentrated corporate governance to political action. Here politics is likely not to have anticipated spontaneous capitalist concentration and is rather likely to have reacted to it by favouring a comparable concentration of interests on the workers' side. When politics is not able to anticipate capitalist concentration, it is likely to react to it later. The result is likely to be "some degree social democracy".

The historical conditions under which a dispersed equilibrium is likely to arise are rather special and, perhaps, they were approximated only by the United States<sup>5</sup>. When the need for large scale companies came about, no other country had so many citizens who had come from a massive and, sometimes, conscious exit from dynastic feudal relations. Many of them had been in search of religious freedom. Moreover, by revolting against the British colonial rule, they ancestors had also broken with the deference for established family dynasties. Only in America such a strong ideology against "economic royalists" and "industrial dictatorship" (Roosevelt quoted by Roe p.40) pre-existed the age of large scale capitalist firms. Some key elements of this ideology were (and still are!) the distaste for the type of concentrated dynastic interests that had characterised the old continent. Social admiration was moved from people who are born wealthy to the individuals who are "self-made". Thus, the meritocracy, related to the climbing of the managerial ladder of a "Berle and Means Corporation", was far more compatible with American ideology than any deferential, or even just passive, acceptance of dynastic concentrated interests of the capitalist families. Managers did not even need to plot against concentrated owners. They were the unintended beneficiaries of a political struggle against concentrated interests (Roe 1994). The public company ruled by managers was itself the unintended outcome of this struggle and prevailed because its internal promotion system was (more than dynastic succession) consistent with America ideology. The very special conditions of American history allowed American politics to anticipate the concentration of the owners' interests.

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<sup>5</sup> Again a reference to Tocqueville (1994, p.44) shows the early roots of the problem:  
"In most European nations political existence started in the higher ranks of society and has been gradually, but always incompletely, communicated to the various members of the body social.  
Contrariwise, in America one may say that the local community was organized before the country, the country before the state, and the state before the Union".

In the U.S., in a way predicted by the general argument about "dispersed equilibria", causation was mainly moving from politics to corporate governance.

The historical conditions for a "concentrated equilibrium" are quite common. In all other countries some form of concentration of ownership interests went together with the growth of large scale enterprises and family dynasties had either an involvement in the management of firms or an important role in the appointment of managers. Financial institutions helped the compatibility of the exercise of this power with the needs of large scale enterprises (often, exactly by putting in the hands of the "economic royalists" the availability of "other's people money"). This allowed only limited diversification of risks but the costs of this limits were (partially) compensated by the capture of many important management jobs by the ruling families and by a decrease of the agency problems (due to the separation between ownership and control) that characterised the "Berle and Means" corporation. The inability of politics to anticipate the "armament of capitalism" implied a corporate governance model that induced later a political reaction to arm labour by concentrating and organising its interests. Since, in most countries, politics could not limit the concentration of the ownership interests, the resulting model of corporate governance caused a "social democratic" political reaction. Thus, in most European countries the direction of causation is consistent with the general prediction concerning the achievement of concentrated equilibria.

In the next section, we will consider the consistency of empirical data with the reciprocal influence between politics and corporate governance and with the prevalence of the two different directions of causation that we have seen to characterise the advent of the "American dispersed equilibrium" and of the "European concentrated equilibrium".

### **3. The Empirical Relation Between Politics and Corporate Governance Systems**

#### **3.1. Econometric Strategy**

In this section we employ a simple econometric procedure in order to assess the empirical relevance of our theoretical predictions.

Methodologically, we use a pure cross-sectional model using a sample of 20 OECD countries<sup>6</sup>, and regress an index of social democracy on an index of ownership concentration and some controls (conditioning information sets) as follows.

$$\text{Social democracy}_i = \alpha + \beta \times \text{Ownership}_i + \gamma \times \text{Control}_i + \varepsilon_i \quad (1)$$

In our first specification, as a measure of *Social democracy*, we adopt an index of employment protection legislation (hereafter *EPL*) normalised to range from zero to six, with higher scores representing stricter regulation<sup>7</sup>. Then, consistently with Roe (2003), in paragraph 3.4, we substitute *EPL* for some alternative proxies such as the Gini index of income inequality and the general government expenditure as a percentage of GDP. *Ownership* is an index between zero and one that equals one if there is no controlling shareholder. In our main specification we use 20% as criterion for (direct plus indirect) control and large firms. In the sensitivity analysis (paragraph 3.4) we replicate the estimation results for both large and mid-sized firms, and either 10% or 20% cutoff levels. Finally, *Control* is a set of variables used as proxies for conditioning information that controls for other factors that may be associated with social democracy. We use four conditioning information sets: the policy information set, the macro-economy information set, the institutions information set and the full information set (policy plus macro-economy plus institutions).

Since, as we have argued in the previous section, the relation of causality may plausibly run in either direction (from strong concentrated ownership to strong union's representation or the reverse), the endogeneity of the explanatory variable (ownership concentration index) is likely to affect the estimation results of regression (1). Then, to address possible biases due to reverse causality, omitted variables, and measurement errors, we implement an instrumental variable procedure (two stage least square<sup>8</sup>). This strategy is essentially an econometric device for capturing the exogenous source of (cross-country) variation in the ownership structure that influences the degree of social democracy.

As instrumental variables we choose cross-country differences in legal systems (e.g., creditor rights, contract enforcement, and accounting standards). Indeed, as La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) show, differences in the legal origin may be associated with differences in legal protections of investors. In particular, laws in English legal tradition countries turn out to have the highest degree of protection of shareholders' rights; French legal tradition countries the least; while countries with either

<sup>6</sup> Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States.

<sup>7</sup> For data sources and description see the Appendix.

<sup>8</sup> Hereafter TSLS.

German or Scandinavian legal origin are located in the middle. These empirical findings are reproduced in Table 2. In columns 2 through 4, we report the average value of each of the four measures of ownership concentration used in the paper for the 20 countries included in our sample grouped by legal tradition. Furthermore, column 5 lists the average values of the Antidirector index (equal to zero for the lowest protection of minority shareholders and to six for the highest<sup>9</sup>).

**Table 2: Means by legal family**

Legal origin <sup>a</sup>	Widely held large		Widely held mid-sized		Antidirector
	20% cutoff	10% cutoff	20% cutoff	10% cutoff	
English	0.740	0.640	0.606	0.320	4.600
French	0.240	0.100	0.040	0.020	2.400
German	0.513	0.350	0.225	0.175	2.250
Scandinavian	0.313	0.075	0.200	0.050	3.000

<sup>a</sup> English: Australia, Canada, Ireland, United Kingdom, United States. French: Belgium, France, Greece, Italy, Netherlands, Portugal, Spain. German: Austria, Germany, Japan, Switzerland. Scandinavian: Denmark, Finland, Norway, Sweden.

As one can observe (with the only exception of the 10% cutoff level for large firms) English legal origin countries always show the largest index of ownership dispersion, while those with French legal tradition have the least. Accordingly, we use in our model two dummy variables for English and French legal origin relative to either German or Scandinavian legal family (that is captured in the constant term). Technically, in the first stage *Ownership* is regressed on a constant and the exogenous variables, providing:

$$\text{Ownership}_i = \delta + \theta_1 \text{British}_i + \theta_2 \text{French}_i + \varepsilon_i \quad (2)$$

Then regression (1) is estimated using the fitted values from (2) as *Ownership* variable. Here a remark on the interpretation of the TSLS procedure is useful. The instrumental variables do not need to be a crucial part of the story and are not conceived to be the causal determinant of the *Ownership* structure. They only serve as econometric device to purge the regressor from endogenous sources of variation. From a statistical point of view a “good” instrument must satisfy two fundamental properties:

*Property (i) Exogeneity:* The instrument must work on the dependent variable - i.e. *EPL* - only through the (endogenous) regressor - i.e. *Ownership*- and not directly.

*Property (ii) Relevance:* The instrument must be significantly correlated with the (endogenous) regressor.

Taking into account the above selection criteria, the literature supports our choice of instrumental variables as follows. On the one hand, it is well established that legal origin

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<sup>9</sup> Details are in the Appendix.

is an “exogenous endowment” as it is explained for instance by Levine et al. (2000). On the other hand, this variable has been proved to affect significantly cross-country differences in the degree of ownership concentration (see La Porta, Lopez-de-Silanes, and Shleifer, 1999). In order to assess empirically the statistical reliability of our instruments in the present context, we test if properties (i) and (ii) are satisfied by *Legal origin* with regard to equation (1). Results are reported in the following subsection.

### 3.2. Testing the Instruments

First, we want to find out if *Legal origin* is significantly correlated with the measure of ownership concentration. If it is not, the instrument is called “weak”. In presence of weak instruments the estimated coefficients from the identification test turn out non-standard and tests are misleading (Staiger and Stock, 1997).

Then, we employ tests on the first stage regression (equation (2) above) and implement the following three control checks:

- The first-stage F statistic must be significantly different from zero (Staiger and Stock, 1997; Stock and Yogo, 2001). As a rule of thumb F must be larger than 10 (Table 1 in Stock, Wright and Yogo, 2002).
- $\hat{\theta}$  must be significantly different from zero. The first-stage t-statistic, as a rule of thumb, must be greater than 3.5.
- The first stage  $R^2$  (Shea, 1997), as a rule of thumb, must be greater than 30%.

Results are in Table 3 below<sup>10</sup>. As one can notice the three requirements are respected.

**Table 3: First stage regression**

Dependent: <i>Ownership</i> (Number of obs. = 20)				
	Value	SE	t	Prob( t >t*)
$\hat{\theta}_1$	0.3935	0.1077	3.65	0.002
$\hat{\theta}_2$	-0.1696	0.0632	-2.68	0.016
$\hat{\delta}$	0.2125	0.0557	3.82	0.001
$R^2 = 0.7097$	$F(2, 17) = 18.16$		Prob( $F > F^*$ ) = 0.000	

<sup>10</sup> Heteroskedasticity-Robust Huber/White standard errors are used (White, 1980; Huber, 1981).

Second, we evaluate the exogeneity of all the instruments<sup>11</sup>. Accordingly, we estimate the following three regressions:

$$Ownership_i = \delta + \theta_1 British_i + \theta_2 French_i + \zeta_i \quad (2)$$

$$EPL_i = \alpha_1 + \beta_1 \times \overline{Ownership}_i + \eta_1 British + \varepsilon_{1i} \quad (3)$$

$$EPL_i = \alpha_2 + \beta_2 \times \overline{Ownership}_i + \eta_2 French + \varepsilon_{2i} \quad (4)$$

Where  $\overline{Ownership}$  is the predicted value from regression (2). For the two instruments to be exogenous, both  $\hat{\eta}_1$  and  $\hat{\eta}_2$  must be not statistically different from zero. In Table 4 we report estimation results of equation (3) and (4). As one can notice also the requirement of exogeneity is satisfied.

**Table 4: Instruments' exogeneity**

<b>Reg. (3) - Dependent: <i>EPL</i></b>				
	<b>Value</b>	<b>SE</b>	<b>t</b>	<b>Prob( t &gt;t*)</b>
$\hat{\beta}_1$	-5.3053	1.7886	-2.97	0.009
$\hat{\eta}_1$	0.5176	0.8963	0.58	0.571
$\hat{\alpha}_1$	3.3774	0.2601	12.98	0.000
$R^2 = 0.7842$	$F(2, 17) = 54.02$	$Prob(F>F^*) = 0.000$		
<b>Reg. (4) - Dependent: <i>EPL</i></b>				
	<b>Value</b>	<b>SE</b>	<b>t</b>	<b>Prob( t &gt;t*)</b>
$\hat{\beta}_2$	-3.9898	0.6790	-5.88	0.000
$\hat{\eta}_2$	0.2232	0.3864	0.58	0.571
$\hat{\alpha}_2$	3.0978	0.3563	8.70	0.000
$R^2 = 0.7842$	$F(2, 17) = 54.02$	$Prob(F>F^*) = 0.000$		

### 3.3. Estimation Results – Basic Regression

Once established the reliability of the legal origin as instrumental variable, we estimate regression (1), using the TSLS procedure with heteroskedasticity-robust error terms. In this paragraph we use the specification without control variables. Results are in Table 5. As one can observe beyond the t-tests, the F-test of joint significance of the parameters and the  $R^2$ , we report the Hansen statistic for overidentifying restrictions. The

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<sup>11</sup> The test is called in the literature Sargan test (Sargan, 1958).

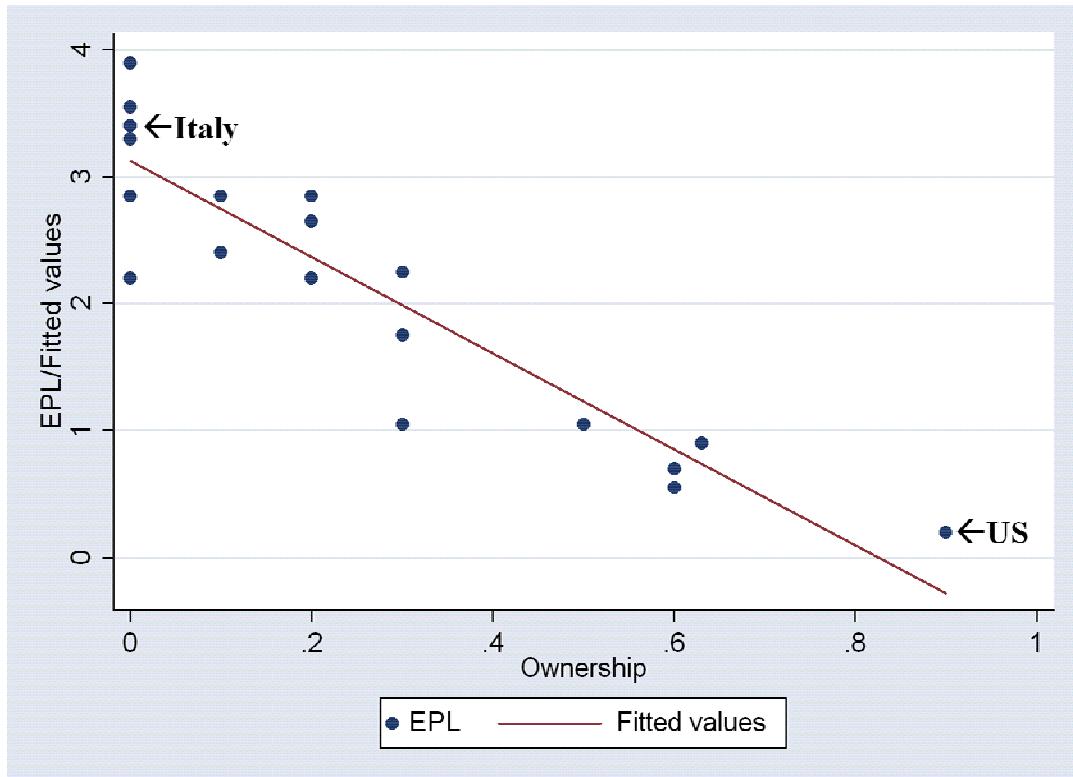
latter always confirms the results from the regression-based Sargan test listed in Table 4 (i.e. the null hypothesis that the system is overidentified is always strongly rejected).

**Table 5: Basic TSLS regression**

Dependent: EPL (Number of obs. = 20)				
	Value	SE	t	Prob( t >t*)
$\hat{\beta}$	-4.3346	0.5336	-8.12	0.000
$\hat{\alpha}$	3.2627	0.1383	23.59	0.000
$R^2 = 0.8193; F(2, 17) = 59.38$ (Prob = 0.000); $J^a = 0.625$ (Prob=0.429)				

<sup>a</sup>Hansen J statistic

We obtain that the measure of ownership dispersion exerts a significant and negative effect on the strictness of employment protection legislation. In other words, the more the ownership is concentrated in a certain country (smaller value of *Ownership*) the more likely it is to find in that country a high degree of employment protection (higher *EPL*). This result empirically supports our theoretical hypothesis that a high degree of social democracy may follow as a reaction to a strong concentrated ownership. In Figure 1 we show the fit of the model.



**Figure 1**

In Section 2 we have also claimed that in most European countries the causation is likely to work from corporate governance to politics, while the special historical conditions that may have favoured the achievement of the “Dispersed equilibria” in the U.S. support the opposite direction of causation. Then, if the U.S. is not included in the sample, we expect the negative effect of *Ownership* on *EPL* to become stronger in our model, whereas if Italy (that is one of the countries with the highest employment protection and the lowest ownership dispersion) is excluded, we expect a weaker correlation.

To test these predictions, we replicate the above results using two alternative samples of 19 countries: one without the U.S. and the other including the U.S. but not Italy. We find that the estimated cross-country coefficient is bigger in the former case (|4.7939|) and smaller in the latter (|4.2970|) than it was when we used the entire sample (|4.3346|). This result provides a first empirical support to our expectations. The estimation output is in Table 6.

**Table 6: Basic TSLS regression**

Dependent: <i>EPL</i>				
	Value	SE	t	Prob( t >t*)
<b>19 countries (without U.S.)</b>				
$\hat{\beta}$	-4.7939	0.6117	-7.84	0.000
$\hat{\alpha}$	3.3183	0.1442	23.02	0.000
$R^2 = 0.9683; F(1, 16) = 54.96$ (Prob = 0.000); $J^a = 0.173$ (Prob = 0.678)				
<b>19 countries (without Italy)</b>				
$\hat{\beta}$	-4.2970	0.5537	-7.76	0.000
$\hat{\alpha}$	3.2455	0.1538	21.10	0.000
$R^2 = 0.809; F(1, 16) = 53.88$ (Prob = 0.000); $J^a = 0.532$ (Prob = 0.466)				

<sup>a</sup>Hansen J statistic

Finally, refer to Roe (2003)’s regression (p. 136-137). Roe regresses the index of ownership concentration on an index of strictness of employment protection for the 1985-93 period<sup>12</sup> using a sample of 16 countries<sup>13</sup>, and obtains a negative and significant

<sup>12</sup> The data used by Roe (2003), which we also use for this test, are from *The OECD job study: Evidence and Explanations, pt. II: The adjustment Potential of the Labour Market* 74 (1994). We remark that here the average covers the 1985-1993 period.

<sup>13</sup>Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, United Kingdom, and the United States.

coefficient (-0.04,  $t = -5.24$ ). Then, he repeats the estimation procedure using a sub-sample of 13 countries that does not include the U.S., Canada and the U.K. (the three countries with highest ownership index and lowest employment protection index that may have biased the previous results). He finds a lower but still significant coefficient (equal to -0.02,  $t = -3.99$ ), validating the robustness of his previous conclusions. In the remaining part of the paragraph we test if the correlation in Roe's model holds even using instrumental variable estimation procedure that should be able to purge the regression from the biases due to the possible reverse causality effect.

Indeed, as we have just proved, since *EPL* is likely to be affected by *Ownership*, we have some clues to believe that the simple regression of the latter variable on the former turns out biased. Thus, we need an instrument for *EPL* that may be reckoned exogenous with respect to the corporate governance. After employing the usual test procedure, we find that the *Left* and *Right* indexes (respectively the cumulated number of the left and right seats as a percentage of seats held by all government parties from 1946 to 1994) are good candidates: on the one side, they are significantly correlated with *EPL*<sup>14</sup>; on the other, they reveal to be exogenous with respect to the ownership index that is referred to 1995<sup>15</sup>.

Our estimation provides a further confirmation of the robustness of Roe's conclusion, obtaining a coefficient equal to -0.0608 ( $t = -6.45$ ) for the entire sample (16 countries). Then, we repeat the same procedure without the U.S., obtaining a smaller coefficient (-0.0511,  $t = -6.68$ ), and with the U.S. but without Italy, obtaining a slightly larger coefficient (-0.06159,  $t = -6.44$ ). Although we are aware that it is very difficult to exclude problems stemming from possibly omitted variables and simultaneity bias, these results are again consistent with our theoretical expectations<sup>16</sup>.

It is here our concern to clarify that the last test does not say anything about which direction of causality is the most likely to be. It only gives us the following pieces of information:

- If the causality direction is from *Politics*  $\xrightarrow{\text{to}}$  *Corporate governance*, then the inclusion of the U.S. in the sample strengthens the cross-country correlation effect. This is due to the fact that the value of the ownership dispersion index for the U.S. (relatively to the U.S. value of the *EPL* index) is above the value that would be predicted

<sup>14</sup> First stage regression:  $EPL = 14.0367 - 2.3906 \times Right + 0.5183 \times Left$ .  
 $t=8.29 \quad t=-3.28 \quad t=2.61$

<sup>15</sup> Auxiliary regressions for the exogeneity test:  
(a)  $Ownership = 1.3054 - 0.0794 \times EPL - 0.1094 \times Right$ ; (b)  $Ownership = 0.6633 - 0.0336 \times EPL - 0.0237 \times Left$ .  
 $t=8.29 \quad t=-3.25 \quad t=-1.37 \quad t=4.53 \quad t=-2.59 \quad t=-1.37$

<sup>16</sup> We have also checked the robustness of the results once *GDP per capita* and *total GDP* are included into the regression. The main conclusions do not change.

with the data from the rest of the sample (as Figure 1 clearly shows). Therefore, if we look at this direction of causality, the effect comes out greater in the U.S. than in the other countries (i.e. in the U.S. some *further* conditions - not included in the regression – appear likely to have favored the diffusion of the public company).

- If the causality direction is from *Corporate governance*  $\xrightarrow{\text{to}}$  *Politics*, then the inclusion of the U.S. in the sample weakens the cross-country correlation relation. This is due to the fact that the value of *EPL* for the U.S. (given the U.S. value of the ownership index) is above the value that would be predicted with the rest of the sample. Therefore, if we instead look at this direction of causality, the effect appears smaller in the U.S. than in the other countries (so there must be *further* factors - not in the regression - that have prevented the value of *EPL* from being even smaller, proportionally to the value of the ownership concentration index).

Analogous (but opposite) reasoning follows for Italy.

### 3.4. Estimation Results – Regression with Controls

In this paragraph we challenge the robustness of our results by including a set of control variables that may affect, either through political or economic channels, the cross-countries differences in the degree of social democracy. We define our conditioning information sets as follows<sup>17</sup>:

- Policy information set: *Union; Right; Left*.
- Macro-economy information set: *Unemployment; Real GDP per capita; Total GDP*<sup>18</sup>; *Inflation; Openness*<sup>19</sup>.
- Institutions information set: *Antidirector; Creditor; Law Enforcement*.
- Full information set: Policy information set + Macro-economy information set + Institutions information set.

We underline that, when the policy information set is used, the sample shrinks to 17 countries due to data availability (Greece, Portugal, and Spain being excluded).

Results are shown in Table 7. For the brevity's sake, we do report only the coefficients associated with *Ownership* and the constant term.

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<sup>17</sup> See Appendix A for data description.

<sup>18</sup> *Total GDP* is a proxy for country size.

<sup>19</sup> The degree of international openness may be assumed as a proxy for market competition. It may be argued that it works as a force that reduces the power of the incumbents to protect their own interests (although with a different focus see also Rajan and Zingales, 2003).

**Table 7: TSLS regression with controls**

<b>Dependent: <i>EPL</i></b>				
	<b>Value</b>	<b>SE</b>	<b>t</b>	<b>Prob( t &gt;t*)</b>
<b>Policy conditioning set (Number of obs. = 17)</b>				
$\hat{\beta}$	-5.1375	1.1148	-4.61	0.000
$\hat{\alpha}$	3.1185	0.3281	9.50	0.000
$R^2 = 0.7863; F(4, 11) = 9.54$ (Prob =0.001); $J^a = 0.149$ (Prob =0.700)				
<b>Macro-economy conditioning set (Number of obs. = 20)</b>				
$\hat{\beta}$	-4.4333	0.4940	-8.96	0.000
$\hat{\alpha}$	10.6893	6.8047	1.57	0.116
$R^2 = 0.8398; F(6, 12) = 21.09$ (Prob = 0.000); $J^a = 1.072$ (Prob=0.301)				
<b>Institutions conditioning set (Number of obs. = 20)</b>				
$\hat{\beta}$	-4.5237	0.6982	-6.48	0.000
$\hat{\alpha}$	4.2584	.5383	7.91	0.000
$R^2 = 0.8314; F(4, 14) = 14.48$ (Prob = 0.000); $J^a = 0.014$ (Prob=0.906)				
<b>Full information conditioning set (Number of obs. = 17)</b>				
$\hat{\beta}$	-4.3491	0.6226	-6.99	0.000
$\hat{\alpha}$	-11.7628	11.4393	-1.03	0.304
$R^2 = 0.932; F(12, 3) = 30.57$ (Prob = 0.002); $J^a = 2.159$ (Prob= 0.1417)				

<sup>a</sup>Hansen J statistic

We find that the inclusion of control variables into the model does not affect significantly our previous conclusions.

### 3.5. Sensitivity Analysis

In this paragraph, we run a simple sensitivity analysis to test if our results depend on the particular choice of the variables used in the previous regressions. Then, we reproduce our estimation for many of the variables adopted by Roe (2003) as proxies of either ownership concentration or social democracy.

In Table 8 we report estimation output when the index for the diffusion of the widely-held companies previously adopted is substituted for three alternative indexes: first, maintaining the focus on medium-sized firms, the cut-off level is fixed at 10%; second, large firms are instead considered and either the 20% or the 10% level is used as control

criterion. As one can observe, the previous results prove to be robust, being the positive effect of the ownership concentration on the index of social democracy still very statistically significant.

**Table 8: Alternative measures of ownership concentration**

<b>Dependent: <i>EPL</i> (Number of obs. = 20)</b>				
	<b>Value</b>	<b>SE</b>	<b>t</b>	<b>Prob( t &gt;t*)</b>
<b>Widely held mid-sized firms – cut-off level 10%</b>				
$\hat{\beta}$	-8.3420	2.3921	-3.49	0.000
$\hat{\alpha}$	3.2987	0.2412	13.68	0.000
$R^2 = 0.2101; F(1,17) = 10.95$ (Prob = 0.004); $J^a = 0.240$ (Prob= 0.624)				
<b>Widely held large firms – cut-off level 20%</b>				
$\hat{\beta}$	-4.9543	0.8336	-5.94	0.000
$\hat{\alpha}$	4.3276	0.4632	9.34	0.000
$R^2 = 0.2160; F(1,17) = 0.2169$ (Prob = 0.000); $J^a = 0.015$ (Prob= 0.904)				
<b>Widely held large firms – cut-off level 10%</b>				
$\hat{\beta}$	-4.4926	0.6855	-6.55	0.000
$\hat{\alpha}$	3.4866	0.2617	13.32	0.000
$R^2 = 0.5740; F(1, 17) = 38.66$ (Prob =0.000); $J^a = 2.263$ (Prob = 0.132)				

<sup>a</sup>Hansen J statistic

Finally, we replicate the cross-country regression using both the Gini index and the general government spending as a percentage of GDP in place of *EPL*. The significance and the sign of the estimated coefficients again provide support to our previous conclusions. Results are summarized in Table 9.

However, we want to remark that the regression for the Gini index is not fully reliable since the instruments in this case do not pass the exogeneity test as it is also hinted by the Hansen test of overidentification (that does not reject the null of no overidentification). This may depend on the fact that the legal origin has a direct effect on the income distribution (or through other channels beyond the ownership structure).

**Table 9: Alternative measures of social democracy**

<b>Dependent: <i>Gini index</i> (Number of obs. = 20)</b>				
	<b>Value</b>	<b>SE</b>	<b>T</b>	<b>Prob( t &gt;t*)</b>
$\hat{\beta}$	0.0947	0.0336	2.82	0.005
$\hat{\alpha}$	0.2874	0.0137	20.94	0.000
$R^2 = 0.2028; F(1,17) = 7.16$ (Prob = 0.0155); $J^a = 7.922$ (Prob= 0.005)				
<b>Dependent: <i>Government expenditure</i> (Number of obs. = 20)</b>				
$\hat{\beta}$	-0.1700	0.0588	-2.89	0.004
$\hat{\alpha}$	0.4603	0.0202	22.82	0.000
$R^2 = 0.290; F(1,17) = 7.51$ (Prob = 0.013); $J^a = 1.115$ (Prob= 0.291)				

<sup>a</sup> Hansen J statistic

#### **4. Comparative Institutional Advantage and Technological Specialization**

Suppose that the U.S. and most European countries approximate the two different "concentrated" and "dispersed" equilibria considered in the first section. Can both systems survive in the age of globalization or, because of the pressure of an increasingly integrated economy, only the most efficient one will prevail?

According to some political views, the introduction of corporate legislation similar to that of the U.S. has the advantage to anticipate an inevitable global prevalence of the American model of Corporate Governance on the European system. However, these views can be challenged by observing that the American and the European systems are characterized by different comparative institutional advantages.

The American system encourages the investment in human skills of professional managers, the diversification of ownership and the concentration of large amounts of capital in the corporations. By contrast, it provides only very mild incentives for the human capital of owners and workers. Much specific knowledge concerning the company is concentrated in the hands of professional managers - phenomenon that in turn enhances the relative stability of managerial hierarchies in comparison to the frequent changes of firms' affiliation of both absentee owners and workers. While the figure of Taylor and of scientific management movement is often correctly associated to the de-skilling of workers, it can be equally seen as movement in favour of the skilling of professional managers that were asked to concentrate much of the knowledge that was traditionally

dispersed among the workers (and some owners). The conditions of asymmetric information between managers and workers were not solved by aligning workers' incentives but rather by concentrating information and all sorts of capabilities in the hands of the managers. The American system became therefore a top-down system in the sense that much valuable information was heavily concentrated and a considerable flow of instruction was running from top management to workers. The fact that globalization implies that many workers may now be employed in foreign countries has not meant that the model has been substantially abandoned but rather successfully extended using the opportunities provided by the global economy. Thus, a counterpart of the American "dispersed equilibrium" is that, while owners and workers do not concentrate their interests, there is a tendency to adopt technologies characterized by the concentration of much knowledge in the hands of managers and by a system of "top down" instructions to the workers. Such a technology makes in turn "efficient" to attribute substantial powers to managers creating a self-sustaining path of interaction among politics, technology and corporate governance.

The diversity of the European systems makes it very difficult to find some common characteristics. However, they seem to share a tendency to a less pronounced diversification of ownership, a related limitation in the size of their firms and stronger incentive by owners (and especially by their heirs) to invest in the human capital necessary to run the firms. At the same time, employment protection gives also some production workers the incentives to make firm-specific investments. By contrast, the investments in human capital of professional managers is discouraged and information, being more widely dispersed, has often to follow a bottom-up path. Like in the American case, the technology that is favoured by this form of corporate governance reinforces in turn the political interests that favour this form of political governance: "concentrated" owners and workers have a vested interest to find the political safeguards that protect their investments in physical and human capital. Thus, a counterpart of the European "concentrated equilibrium" is that, while owners and workers tend to concentrate more their interests, knowledge is more dispersed and a system of bottom-up transmission has a relatively more important role.

In each system the rights that are defined in the "concentrated" and "dispersed" equilibria tend to favour the adoption of technologies that in turn reinforce these rights. In both cases, the two systems tend to settle in institutionally stable "organizational equilibria"<sup>20</sup> characterised by a cumulative process of reinforcement between the "political" rights, the form of corporate governance and the technologies that are adopted. Thus, according the arguments that we have considered, both dispersed and concentrated organizational equilibria tend to be fairly stable in the framework of a closed economy.

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<sup>20</sup> On the concept of "organizational equilibrium" see Pagano (1993) and Pagano and Rowthorn (1994).

A limitation of the arguments is that we have developed them in the case of two closed economies. One may object that the same conclusion does not hold in the framework of a globalized economy. Under the pressure of increasing economic integration the least efficient systems will tend to become inevitably unstable and eventually be disrupted.

However, the tendency towards the elimination of the least efficient economic institutions and their convergence towards a single model of corporate governance should not be taken for granted. In the first place the two systems of corporate governance may have different absolute advantages in different sectors. In the second place, because of the substantial immobility of both the institutions and of the factors, what may matter for the survival of the institutions is not their absolute advantage but their comparative advantage. Thus globalization may paradoxically imply that, even when institutions are characterized by an absolute institutional disadvantage, they may spread within a country. In a global economy each country will tend to specialize in those sectors where it enjoys a comparative institutional advantage<sup>21</sup> (even if it has no absolute institutional advantage). In this way, it may spread its institutions within the boundaries of its economy.

Suppose that a country (for instance Italy, which we have seen occupy such an extreme position in the preceding section) is mostly characterized by concentrated equilibria where capitalist dynasties do not diversify among different business and try to manage directly their firms in the presence of strong unions.

Suppose also that the country is not very integrated in the global economy and it has a tendency to be locked in this concentrated equilibrium. In spite of this tendency, because of the low level of global integration, the country needs still to produce also in those sectors where the country-specific type of organization is difficult to apply. As a consequence, the country is forced to have some institutional diversity in the form of dispersed organizational equilibria and/or to adopt some institutional devices that enable it to run these sectors (typically, in the Italian case, state support for large private firms and nationalized investments were the ways that made possible to run sectors where the scale of firms was incompatible with concentrated family ownership<sup>22</sup>).

However, assume now that the economy gets more integrated and that it can specialize in those sectors where it enjoys a comparative institutional advantage (and not

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<sup>21</sup> On the theory of comparative institutional advantage see the essays contained in Hall and Soskice (2001). See also Bowles and Pagano (2005). Some empirical evidence on the institutional effect on international comparative advantage for OECD countries is provided by Belloc (2004).

<sup>22</sup> The Italian case is considered in detail in Pagano and Trento (2003).

necessarily a comparative traditional advantage<sup>23</sup>). In this case, the country by concentrating its production in these sectors will spread to the all economy the institutional arrangements that support them. Thus Globalization, far from imposing a unique model of corporate governance to each country, may push them to specialize in those sectors where they have a comparative advantage. Even if a "concentrated organizational equilibrium" (or a dispersed one) had no absolute advantages in any sector, its diffusion, due to its comparative advantage, may increase as a result of globalization (sadly, Italy may eventually abandon all the sectors that require large firms such as the car industry).

Two objections can, however, be raised against the argument that we have developed. The first concerns the limits to the feasibility to the specialization path set by the institutional comparative advantage of a particular country while the second concerns its desirability.

Globalization is compatible with and does even favour growing institutional diversity only if we interpret "globalization" as "closer economic integration" and not also as the prevalence of "a global system of rights". Obviously, the legal imposition of rights, which are compatible with only one or few systems of corporate governance, would decrease institutional diversity. More subtlety, the acceptance of some rights at global level may indirectly make it less advantageous to run a certain system of corporate governance. One example, which, in our view, deserves special attention, is the change in the definition and the level of enforcement of intellectual property rights at global level<sup>24</sup>.

A system of dispersed ownership and weak workers' rights that concentrates much information in the hands of the top managers is likely to entail a comparative institutional advantage in the acquisition and the production of codified knowledge that is applied with a top down transmission mechanism to the production process. By contrast, a system of concentrated ownership and strong workers' rights is likely to entail a comparative advantage in the production of tacit knowledge that is often applied, thanks to some bottom up transmission of information, to the improvement of the products. The argument that we have considered above would imply that, under the increased pressure of globalization, some countries will specialize in innovative processes requiring codified knowledge and other countries in innovative processes requiring tacit knowledge. However, the convenience of each governance system may crucially depend on the system of intellectual property rights that prevails in a global economy.

Suppose that (at least part of) the codified knowledge of the first type of countries is used in the production of the tacit knowledge of the second types of countries and

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<sup>23</sup> By comparative traditional advantage we refer to advantages due to cross-country differences in technological levels and factor endowments that are usually conceived by the international trade literature.

<sup>24</sup> For a more detailed analysis of IPR see Pagano and Rossi (2004).

consider the effects of two regimes: one characterised by weak intellectual property rights (which may approximate the situation of the eighties) and the other characterized by strong global intellectual property rights (which may resemble the situation of the nineties).

Under a regime of weak IPR, the "concentrated equilibria" countries that rely on tacit "bottom-up" knowledge can exploit and free ride on the countries that rely on top down codified knowledge. By contrast, under a regime of strong and "upstreamed" intellectual property rights, the countries that rely on codified knowledge can easily patent this knowledge and enjoy monopoly profits with the respect to the countries that use it as an input in the production of tacit knowledge. If globalization is interpreted as change from the first regime to the second regime characterized by the existence of strong and "upstreamed" global rights, then it may make it much less convenient and even unfeasible to run a system of corporate governance based on much information processed at the bottom.

## 5. Conclusion

A system of global rights may make it impossible for each country to specialize according to its institutional comparative advantage. But is it anyway desirable to specialize according to this path?

In order to give an (rather mixed) answer to this question it is convenient to reconsider briefly the main argument that we have proposed in this paper.

American populism (keep capitalistic dynasties under control!) and European social democracy (create workers' counter-power to powerful capitalist families!) have been two very different political strategies by which the two societies have made the concentration of power associated to large-scale production compatible with democracy. We have seen that, while one political strategy has somehow anticipated capitalist concentration and the second has reacted to it, they have both created some form of control of the power of the owners of capital and contributed to social peace. However, these two political strategies are very different. They are characterized by synergies with different systems of corporate governance that are, in turn, associated to different complementary technologies and to different comparative institutional advantages.

However, while there can be a tendency of each country to specialize according to its comparative institutional advantage, these advantages are not associated to natural resources endowments but to human institutions. Thus, it is an important policy issue whether some countries should try to change their corporate governance systems and the

associated institutional advantages. In particular, the prevalence of a global strong and up-streamed intellectual property rights may make this change desirable for some countries (but it is also perfectly legitimate to try, instead, to change the present global regime of IPR which is also not dictated by nature and has numerous disadvantages!).

However, while these changes are possible, one should never forget the complementarities between the politics, the technology and the model of corporate governance that characterize each country. Changes towards the American model may involve that countries based on more concentrated organizational equilibria forgive their own way of acquiring skills. Moreover, one should not forget that a shift to the American model should involve a disarmament of both workers' unions and capitalist family dynasties. A unilateral disarmament of unions and/or a decrease in the degree of social democracy would involve that Europe gives up its own way of checking the power of the capitalist dynasties and endangers the stability of the social and economic conditions of a reasonable political democracy<sup>25</sup>.

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<sup>25</sup> Moreover, in the present political situation, one cannot exclude that, if American populism gets increasingly captured by the Republical right, then the U. S. may eventually need some "degree of social democracy" to make capitalism consistent with political democracy.

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## **Appendix: Data description and data source**

All the variables are average values for the period 1990-1998 and most of them are in log-form. The only exceptions are: *Ownership* that is available only for the year 1995; the government spending that is mostly referred to 1999; and the Gini index that is for the period 1992-2000. All the variables are real taken in real terms.

- ***Ownership***. Given a sample of ten firms with stock market capitalization of common equity at the end of December of 1995 (of at least \$500 million or higher), the index is equal to one if there is no controlling shareholder using 20% (10%) as the criteria for (direct plus indirect) control. Source: La Porta, Lopez-de-Silanes, and Shleifer (1999).
- ***Employment protection legislation - EPL***. The index reflects the overall strictness of employment protection legislation and is normalised to range from 0 to 6, with higher scores representing stricter regulation. Source: OECD (2004).
- ***Union***: Net Union Density constructed as the ratio of Total Reported Union Members (gross minus retired and unemployed members). Source: Nickell and Nunziata (2001).
- ***Right***: Cumulative RTCAB score from 1946 to the year of the observation. RTCAB = Right seats as a percentage of seats held by all government parties. Source: Comparative Welfare States Data Set (1997).
- ***Left***: Cumulative LEFTCAB score from 1946 to the year of the observation. LEFTCAB = Left seats as a percentage of seats held by all government parties. Source: Comparative Welfare States Data Set (1997).
- ***Total GDP***: GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant U.S. dollars. Source: World Bank Development Indicators (2001).
- ***Real GDP per capita***: GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant U.S. dollars. Source: World Bank Development Indicators (2001).
- ***Inflation***: Consumer price index reflects changes in the cost to the average consumer of acquiring a fixed basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used. Source: World Bank Development Indicators (2001).

- ***Openness:*** The index is equal to (Export + Imports) /Real GDP. Data are in constant U.S. dollars. Source: World Bank Development Indicators (2001).
- ***Unemployment:*** Unemployment rate. Source: World Bank Development Indicators (2001).
- ***Antidirector:*** The index is formed by adding one when: (1) the country allows shareholders to mail their proxy vote to the firm; (2) shareholders are not required to deposit their shares prior to a General Shareholder's Meeting; (3) cumulative voting or proportional representation of minorities in the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call an Extraordinary Shareholders' Meeting is less than or equal to 10 percent; or (6) shareholders have preemptive rights that can only be waved by a shareholders' vote. The index ranges from 0 to 6" (from Table 1, La Porta, Lopez-de-Silanes, Shleifer, Vishny, 1998:). Source: La Porta, Lopez-de-Silanes, Shleifer, Vishny (1998).
- ***Law Enforcement:*** Assessment of the law and order tradition in the country produced by the country risk rating agency International Country Risk (ICR) Scale from zero to 10, with the lower scores for less tradition for law and order. Source: La Porta, Lopez-de-Silanes, Shleifer, Vishny (1998). Original Source: International Country Risk Guide
- ***Gini Index:*** "The Gini index measures the extent to which the distribution of income (or in some cases consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index score of zero implies perfect equality while a score of one implies perfect inequality." Source: World Resource Institute (2003)
- ***Government expenditure:*** General Government Expenditure as a Percentage of GDP. Data are referred to 1999 but Australia, Canada, Japan, Switzerland (1998), and the United States (1997). Sources: OECD (2001)
- ***Legal Origin:*** Dummy variables for British, French, German and Scandinavian legal origin. Source: World Bank (2002).