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ABSTRACT

Although economies, business practices, and living standards have converged since WWII, corporate structures continue to differ among the advanced economies of the world. Looking at the diversity of corporate structures of large-sized firms around the world (and over time) would fascinate Charles Darwin. This work develops a critical review of the literature on political determinants of corporate governance through the Darwinian theory (including some Lamarckian aspects). As Darwin, in his work *On the Origin of Species*, explicates the diversity of species of tortoises, finches, and iguanas of the Galapagos Islands, so Darwinism may contribute in understanding the origin and the persistence of corporate diversity. In particular, this article takes into account politics-driven *variations*, their *inheritances*, and the subsequent *selection* of advantageous ‘corporate’ attributes.

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Keywords: Corporate governance, Darwin, politics, path-dependency.

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“O Nature, O Nature,
Why do you not then give
That which you promised then?
Why to such a degree
Do you beguile your children?”

Giacomo Leopardi (1828), *To Silvia*

1. Introduction

Darwinism is a theory of the diversity of species (Mayr 1988: 265). The corporate diversity around the world and over time would fascinate Charles Darwin. There are at least two *species* of corporate governance in large-sized corporations:¹ one—the *diffused shareholder species*—is characterised by anonymous shareholding and thick, liquid trading markets, and relations among actors of firms are coordinated primarily via highly competitive market arrangements; the second one—the *blockholder species*—relies on strict control exerted over the management by a principal shareholder and on collusive and non-market interactions among stakeholders.² Most of the world’s economy operates through the blockholder species. The diffuse shareholder species found in the US is relatively unusual, and even in the US, it is of rather recent origin (cf. (La Porta *et al.* 1997, 1998, 1999, 2000, 2002, 2008—hereinafter LLSV; Gourevitch 1996). Moreover, countries have not simply held to one system but have changed over time.³

This work, in accordance with the so-called ‘politics-school’ (Roe 1994, 2003, 2005, 2006; Gourevitch 2003; Rajan and Zingales 2003; Pagano and Volpin 2005; Gourevitch and Shinn 2005; Perotti and von Thadden 2006; Pagano 2012; Belloc and Pagano 2013; Roe and Vatriero 2016), originated by the contributions of Veblen, Berle and Means, analyses the corporation as mostly a ‘political construct’;⁴ this means that corporate

¹ This work focuses on public companies because they are the “most politically salient firms in every jurisdiction” (Davies *et al.* 2009:306) and because the institutional differences in corporate governance are more evident in large (the largest) business firms than medium or small firms—La Porta *et al.* (1997, 1998, 1999, 2000, 2002, 2008) find that this is indeed the case.

² These two models of corporate governance are named, e.g., the neoliberal model vs. the Rhenis-Alpine-Japanese model (Albert 1990), outsider model vs. insider model (Franks and Mayer 1995), market-system vs. hierarchical-control system (Allen and Gale 2000), common-law vs. civil-law (La Porta *et al.* 1997, 1998, 1999, 2000, 2002, 2008), Anglo-American corporate governance vs. Continental European corporate governance (Aguilera and Jackson 2003), and external diffuse shareholder model vs. internal concentrated blockholder model (Gourevitch and Shinn 2005).

³ As documented by Pagano and Volpin (2005), and Pagano and Volpin (2006), who extended the LLSV indicator up to 2002. Evidence also comes from longitudinal studies of ownership concentration in specific countries (e.g. Barca and Becht 2001; Morck 2005).

⁴ Adolph Berle writes in the preface of *The Modern Corporation and the Private Property*: “Corporations are essentially political constructs.” (Berle and Means 1932:xxviii). The path-breaking contribution of Thorstein Veblen is recognised by Berle and Means: in the first footnote of their book, authors write that for Veblen, corporations are “master instruments of civilization”.

governance arrangements inside the firm among constituents (in particular, managers, owners, and workers) interact deeply with a nation's politics (cf. Roe 2003). In this respect, party systems, political institutions, political orientations of governments, distributional coalitions, ideologies, and interest groups are the primary determinants of the relationships among managers, owners, workers, and other stakeholders of the firm; by this token, political forces account for the differences of corporate governance species among advanced industrial countries. This analysis based on politics is not the usual interpretation:⁵ politics is generally considered an exogenous factor of corporate governance in the standard literature (see Coffee 2001); on the contrary, this article affirms that not only does politics affect the corporate governance species, but also that politics depends (at least in part) on corporate governance species. There is, in other words, a circular causation process between politics and corporate governance. Moreover, such a process is characterised by a Lamarckian evolution that takes into account purposive variations: agents support (e.g., vote for) politics that are aligned with their interests.

This article contributes to the literature and the debate with respect to the following two main aspects. First, it reconciles and reorganises different and heterogeneous contributions concerning political determinants of corporate governance. This reconciliation can be useful to understand but also to predict the evolution of corporate governance. In particular, one should expect a convergence of corporate governance structures solely if we expect a convergence of political conditions. Secondly, the article sheds light on the selection of institutions by including a Lamarckian artificial selection. In the Darwinian theory, but also in the evolutionary economic theory (which borrows from Darwin and evolutionary biology), individuals are 'fixed/exogenous types': their rational decisions stand only for rational adaptation to a given environment, and changes occur only through random mutations or alien invasions. In contrast, this paper takes into account an idea of Lamarckian artificial selection: individuals have the opportunities to change (and not only to adapt to) their environment, and such changes are in accordance with their economic maximisation objectives.

Darwinism is a possible inspiration for economics (so as economics inspired Darwinism⁶). A growing body of literature indicates that the evolution of economic institutions shares some of the complicated intellectual challenges that characterise the Darwinian evolution of species in biology (e.g. Vromen 1995; Roe 1996; Hodgson 1999; Nicita and Pagano 1999; Samuelson 2002; Pagano 2012). In particular, the article applies three main Darwinian principles: variation, inheritance, and selection.⁷ In accordance with Darwin, there must be sustained and abundant variations among the members of a species—in biology, variations involve genetic recombination. Second, there must be some mechanism through which characteristics are passed on via heredity

⁵ Roe and Vatiello (2016) illustrate some limit of this approach based on politics. Among others, too many political explanations are local and historical.

⁶ Darwin credited economists, e.g. Thomas Malthus and Adam Smith, for their crucial influence on the formulation of his theory (cf. Gould 1993).

⁷ For instance, Darwin writes:

[o]wing to this struggle for life, any *variation*, however slight and from whatever cause proceeding, if it be in any degree profitable to an individual of any organic beings and to external nature, will tend to the preservation of that individual, and will generally be *inherited* by its offspring. The offspring, also, will thus have a better chance of surviving, for, of the many individuals of any species which are periodically born, but a small number can survive. I have called this principle, by which each slight variation, if useful, is preserved, by the term of natural *selection*. (Darwin 1859 in 2004:74, italics is added).

through the generations—in biology, heredity involves genes and DNA. Third, a selective mechanism (e.g. natural selection) operates because the variations that are preserved are those bestowing an advantage in the struggle to survive.

Darwinian principles of variation, inheritance, and selection may include many different economic perspectives. For instance, Alchian (1950) argued that uncertainty and innovation fuel *variation* and that competition *selects* the firms that make profits.⁸ Nelson and Winter (1982, 2002) affirm that imitation, habit, and routine produce *heredity* in the industry and that managers *select* among observed behaviour patterns. Chandler (1977) argues that the emergence in the US of modern large companies, characterised by managerial hierarchy, derives from both technological and institutional *variations* in the US (that did not occur in the EU); respectively, the exponential expansion of transportation and the communication industry between the end of the 19th century and the beginning of the 20th century, and the introduction of antitrust policies (cf. also Williamson 1985: 107-114).

The Darwinian principles (variation, heredity, and selection) in this article are reflected, respectively, by politics-driven institutional shocks, complementarities among institutional domains that lead to path-dependence phenomena, and the emergence (i.e. selection) of multiple Nash equilibrium profiles. Moreover, the analysis embraces the co-evolution between corporate governance (i.e. species) and politics (its environment), by including a Lamarckian approach.

The rest of paper is structured as follows. Section 2 explains the motivation and furnishes the main ideas of the paper. Section 3 applies the Darwinian principle of variations to the corporate governance analysis, by focusing on political variations due to working-class pressures. Section 4 illustrates the parallel between the Darwinian principle of inheritance and economic concepts of path-dependence and institutional complementarity. The study of selection is presented in Section 5: In this section, I illustrate a parallel between ‘artificial’ selection and political equilibrium. Section 6 is dedicated to remarks.

2. Motivation and intuition

While the ‘Modigliani and Miller Theorem’ asserts that in the absence of capital market imperfections and taxation, firm value is independent of financial structure, in the real world with positive transaction costs, the financial structure matters because it contributes to the definition of the costs and benefits of the corporate governance structures. Shleifer and Vishny (1997) summarise corporate diversity in terms of the mechanisms available to minimise agency problems. In the diffused shareholder species, the separation between ownership and control calls for institutional mechanisms, such as a market for corporate control and contractual incentives, to align the interests of anonymous shareholders and managers. In contrast, in the blockholder species, the majority shareholder retains a greater capacity to exercise direct control on

⁸ For a similar view of natural selection by Milton Friedman and Gary Becker, see Vromen (1995: 13-40).

management; this produces fewer market-oriented rules (e.g. takeovers), weaker managerial incentives, and a greater supply of debt than the diffused shareholder species. As a result, whereas in the blockholder species, non-dominant shareholders may suffer from potential misbehaviour of the blockholder, in the diffused shareholder species, dispersed shareholders may suffer from managerial misbehaviour (Roe 2005). Even if the agency cost theory may furnish an explanation of why different species might *in theory* converge (e.g. it could derive from the competition among corporations with different governance structures), it does not investigate the origin of the diversity—namely, why two (or more) corporate governance species emerge(d)—and why different species might *in practice* not converge (e.g. for the emergence of multiple equilibrium profiles, or divergence of political determinants).

The Darwinian argument as proposed here and applied to the analysis of corporate governance structures, in particular, is able to revise three crucial predictions of the current literature:

1. The prediction of convergence: Hansmann and Kraakman (2001) predict the convergence towards a shareholder-oriented model in which managers should be charged with the obligation to follow the interests of shareholders.⁹ The idea is that the diffused shareholder species is the inevitable path for all countries.¹⁰
2. The prediction of efficiency: The competition in product-and-capital markets should force corporations, and in particular big corporations that operate in the international markets, to adopt rules, including corporate-governance mechanisms, that minimise costs in the drive for efficiency. The prediction is that firms with competitive advantages under the most efficient structure of corporate governance should displace those governed by alternative-governance structures. This is the functional explanation of institutions (cf. Vromen 1995) as a means of minimising transaction costs (what Williamson 1985 calls the ‘Efficiency Branch’).
3. The prediction of legal origin: In a series of articles, Shleifer and his co-authors (LLSV) seek to show that the current corporate governance species originates from the medieval distinction between common and civil law systems:¹¹ This article illustrates that such an explanation can be included in an idea of political origin and can be extended by involving further political determinants.

Ultimately, this article is sceptical about arguments that predict convergence towards a single model and, above all, towards a single optimal equilibrium. In particular, institutional complements¹² can conceivably determine the *best-fitting* (rather than most-efficient) corporate governance system, and therefore systems will (continue to) differ depending on which local complement dominates.

⁹ Further corporate constituencies, such as creditors, employees, suppliers, and customers will have their interests protected by contractual and regulatory means rather than through participation in corporate governance

¹⁰ The hypothesis of convergence is advanced also by Easterbrook and Fischel (1991), and Pagano and Volpin (2006).

¹¹ In particular, the legal origin theory affirms that common-law systems protect shareholders and creditors (and therefore lead to diffused corporate ownership) better than civil-law countries do. By the late 2000s, important policy-makers at international development agencies such as the World Bank had based their policy recommendations on this theory (cf. Roe 2006; Deakin and Pistor 2012).

¹² Two institutions are complementary when the ‘performance’ of one institution benefits from the presence of another institution and vice versa (cf. also Pagano and Vatrio 2014).

Research questions concern the following: (i) why a clear convergence towards one corporate governance species has not naturally occurred thus far; (ii) why different corporate governance species may survive; and (iii) why the legal origin theory is insufficient to explain the diversity of corporate governance species. The thesis advanced in this paper is that corporate diversity is the result of an evolution deriving from the inheritance (i.e. path-dependence) of several variations of political environments, which leads to the (Lamarckian) selection of multiple, sometimes inefficient, and local equilibria.

In the process of their evolution, biological systems carry the baggage of their own history. Hence, in order to understand the nature of an organism, we must know something about its evolutionary past. Analogously, corporate governance everywhere continues to bear the imprint of the historical path through which it has evolved, and reflects as well the influence of a variety of (non-efficiency-oriented) political determinants. The general idea in Figure 1 is that history affects politics, where politics involves many aspects such as ideologies, systems of government, and political parties. Politics defines policies about different aspects of life such as health policies, foreign policies, etc. Some of these policies, i.e. economic policies, affect the corporate governance species. Hence, corporate governance depends on the policies and on the politics that shape those policies. Political conditions directly or indirectly (by policies) affect economic outcomes, i.e. the corporate governance species (Figure 1).

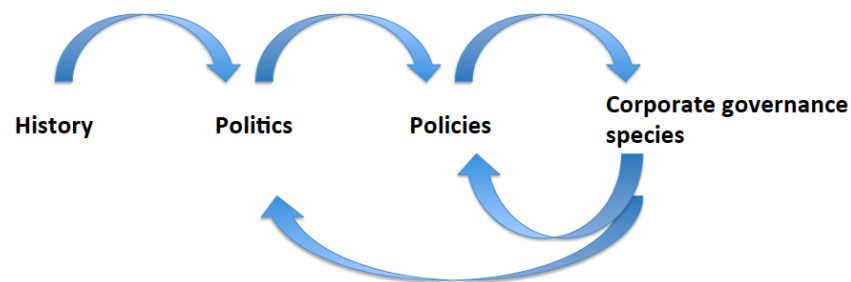


Figure 1. The evolution from politics to corporate governance species, and back

An example of these relationships is provided by LLSV. Because France in the 12th and 13th centuries was less peaceful than England, in France there was a greater need for protection and control of law enforcers by the state—consequently, French politics adopted a civil law system characterised by fact-finding by state-employed judges and, later, a reliance on codes rather than judicial discretion. In contrast, English politics developed a common law system that relied on fact-finding by juries, independent judges, and judge-made law rather than strict codes (see Glaeser and Shleifer 2002; Roe 2007; Siems 2007). Accordingly, political (broadly speaking) and medieval *variations* between France and England produced different jural systems, which in turn affect current economic outcomes.

Moreover, my work, by analysing politics-driven variations, takes into account the circularity between politics/policies and corporate governance species (Figure 1), namely the co-evolution between the species (i.e. the corporation) and its environment

(i.e. the political context). The idea is that the corporate governance species calls for certain policies and prefers certain politics: constituents of the corporation (i.e. workers, managers, and owners) as voters, interest groups, and/or lobbyists support policies and politics that are best aligned with their interests (e.g. shareholders seek high dividends, workers seek good wages and job stability, and managers seek autonomy and prestige). Moreover, such preferences change over time: for instance, the progress of financial markets and corporate governance configurations implied the expansion of ‘specialised’ interest groups, such as the rise of the coalition of managers.

In particular, I focus on two channels through which is expressed the influence of corporate governance species on politics: the first is based on the class conflicts and coalitions between workers and owners, while the second is based on the cross-class conflicts and coalitions among agents of the same innovation sector. Hence, there is a mutual dependence between politics and policies on the one hand, and economic outcomes (namely, the corporate governance species) on the other hand. Such a dependence represents a form of co-evolution between species (the corporate governance structure) and environment (political context).

The circular (and cumulative) causation process or path-dependence between politics and corporate governance means that the species (i.e. corporate governance) adapts to the environment (i.e. the political context) and the environment in turn adapts to its species. In this sense, the actual species *inherited* characteristics both of past species *and* the past environment. This circularity may lead to an equilibrium in terms of adaptation, and such an equilibrium leads to the definition of the economic species. This does not mean that path-dependence is always inefficient, but that institutional complementarities may not engender a tendency towards systemic efficiency because these complementarities produce different and often (in)efficient economic equilibria (Aoki 2001; Milgrom and Roberts 1990).¹³

In addition, in Darwinian theory, ‘natural selection’ stands for an idea of local or partial efficiency. Darwin refers to natural selection as any attribute that favours survival, such as a better use of resources, a better adaptation to weather and climate, superior resistance to diseases, or a greater ability to escape enemies. It means that ‘nature’ selects the most well-adapted and most fitting species according to the local environment, and not the most efficient in an absolute sense. It implies the emergence and persistence of corporate governance arrangements that are the best-fitting for an environment, but not necessarily the most-efficient.

Finally, the concept of selection in this paper also includes human reasons rather than natural ones: one can say that institutions are selected by people, not by nature. Indeed, institutions change because individuals are moved by an effort to realise their aspirations via politics. This means that the evolution of institutions in general and

¹³ Although this paper will focus on the institutional complementarity argument, multiple and local equilibria may emerge for a further argument that is based upon the convexity property. The causation between environment and species, both in biology and in economy, may potentially violate the nonconvexity property. As in biology, many pathways of interactions among constituents of ecosystems involve transformation possibilities that constitute nonconvex sets (this circumstance is known in biology as ‘fitness landscape’), so in the perspective of this paper, the interactions among constituents of corporations (i.e. managers, workers, and shareholders) and between the corporation and its environment may potentially violate the convexity property. This violation may make more difficult the achievement/selection of efficient outcomes, as in the case of externalities and nonconvex properties (e.g. see Starrett 1972). I am indebted to an anonymous referee for this idea.

corporate governance in particular is characterised by a Lamarckian mechanism because the members of species (e.g. constituents of corporations) consciously and purposively affect their environment. In biology, there are no Lamarckian species or ‘artificial’ selection, while in socio-economic systems, agents can, and apparently do, purposively (i.e. artificially) modify the underlying codes (their environment) that enable meaningful social interactions.¹⁴ One might affirm that interest groups via politics can produce inefficient corporate governance species. However, the aim of this article is not to assess the efficiency of one particular species of corporate governance rather than another; it is interested in arguing that multiple equilibrium profiles may emerge and that the corporate governance of large corporations is the result of a political selection rather than a ‘natural’ convergence towards Pareto optimality.

3. The political variations

In accordance with politics-school, political forces account for the differences in choice of corporate governance species among advanced industrial countries: political conditions precede corporate governance.

A first example of political variation that affects the current economic outcome is described by legal origin theory (LLSV). From the differences in political context between France and England in the 12th and 13th centuries, two legal families have appeared: common law and civil law. According to LLSV, this distinction between legal families led to different qualities of protection for shareholders, and, above all, to different structures of corporate governance.

Several scholars are sceptical that the medieval variation illustrated by the legal origin theory is sufficient¹⁵ to explain the variety of corporate governance structures around the world. Indeed, it is difficult for legal origin with its time-invariant nature to explain financial change over time (La Porta *et al.* 2008 admit such difficulty). It implies invariable influence of legal origins over financial development. Similarly, Roe (2003, 2006) noted that the politics in LLSV’s argumentation exists only in the initial (medieval) choice of the legal system (common vs. civil law) and no longer plays a role in shaping the actual content or use of law after the initial choice of systems. In this respect, the historical distinction between the common law and civil law systems considered by the legal-origin theory can represent only one part of the evolution of corporate governance regimes and not the entire history.

The politics-school explanation of the variety of corporate governance regimes goes beyond the notable legal-origin theory and suggests several politically-driven variations. The proposed Darwinian approach is able to reconcile these different contributions. In accordance with the politics-school’s thought, the question is whether the dominant

¹⁴ A widespread accusation against the Darwinian account of evolution is that it is blind (e.g. Coase 1978). However, Darwinism does not deny intentionality or Lamarckism; it simply insists that it has evolved in a causal process, and that intentions themselves are caused (Hodgson and Knudsen 2006).

¹⁵ And robust! See Spamann (2010), Siems (2014), and Holderness (2014). See also Vatiero (2015), which illustrates that the legal origin theory weakly explains the Swiss corporate governance species.

interests in a polity have reason to favour or disfavour a corporate structure. From here, the political theory comes in several major formulations, such as the median voter theory (Perotti and von Thadden 2006), the role of ideology (Roe 1994), the left-right conflict (Roe 2003), the dominant coalition characteristics (Gourevitch and Shinn 2005), and the nature of political representation (Pagano and Volpin 2005). Each theory furnishes substantial consistent empirical data.

Perotti and von Thadden (2006) offer evidence of the “great reversal” phenomenon noted by Rajan and Zingales, stressing that in the first half of the 20th century, due to hyperinflation in several financially developed countries, the middle class became concerned with the labour-income risk associated with free markets. Those countries (such as Germany) with an impoverished middle class turned to a more corporatist system with a suppressed financial market, whereas other countries (e.g. the US) escaped high inflation and hence maintained more market-friendly institutions, despite the fact that some of them, such as the Netherlands and Switzerland, have the ‘wrong’ legal system origin (i.e. civil law).

Roe (1994, 2003, 2006) explores the idea that the American and European corporate governance species are the result of political variations (i.e. the visible hand of politics). In the case of the US, for Roe (1994) the populism and federal system favoured smaller local interests over concentrated private (economic) power, which in turn affected American finance and the structure of the country’s large firms. The result was that banks and insurers were not players in American corporate ownership, pushing the large firm to grow not via one-stop shopping at a major financial institution, but via diffuse securities markets. On the other hand, in Continental Europe, Roe (2003) affirms that the corporate governance species derives from the pressure of the working class, which called for workers’ representation, job security, income distribution, social welfare, and social stability, to name a few. These variations among policies on labour (versus capital) were due to 20th century World Wars, occupation, and communist influence. In particular, “social democracies”,¹⁶ such as those in Continental Europe, pressured corporate managers and gave voice to the claims of workers. Roe (2003) adds that social democratic policies increased the incentives to concentrate ownership in corporations. That is, owners of capital responded by concentrating ownership to ensure that managers act in the interests of the firm’s owners rather than giving away the store to workers.

A different view is proposed by Gourevitch and Shinn (2005). They affirm that the corporate governance practices are the result of coalitions among corporate actors (cf. also March 1962). For instance, the coalition of workers and managers can dominate owners, as in corporatist states, such as Germany, Japan, and the Netherlands. Or, the recent introductions of shareholder value practices in stakeholder-oriented governance contexts suggest a coalition of employees and investors to promote greater transparency.

In addition, divergences of corporate governance regimes may be the result of the political mechanisms of preference aggregation rather than of political preferences.

¹⁶ By social democracy, Roe (2003) means a nation committed to private property, but where distributional considerations are vital, where labour is typically powerful, and where government action to foster economic equality is central on the political agenda.

Pagano and Volpin (2005) affirm that insiders at large enterprises are aligned together against outsiders. The insiders are those owning large blocks of the company's stock, the firm's managers, and its employees. They unite to oppose the influence of outside stockholders and, hence, do not support corporate and securities law protections that would facilitate outside investors' participation, protection, and voice. The three do not vote for the same political party, but their parliamentary representatives make deals that unite their interests. The intuition behind these results is that proportional voting pushes political parties to cater more to the preferences of social groups with homogeneous interests; for instance, managers and employees. Under a majoritarian system, by contrast, there is keen competition for the votes of the pivotal district, that is, a district dominated by a group that is not ideologically committed, like anonymous shareholders.¹⁷ Hence, the findings of Pagano and Volpin suggest that a proportional system produces weak shareholder protection and strong employment protection, i.e. an outcome favourable to managers and workers and unfavourable to the dispersed owner. In contrast, a majoritarian system produces the opposite: strong shareholder protection and weak employment protection, i.e. the outcome preferred by diffused shareholders.¹⁸

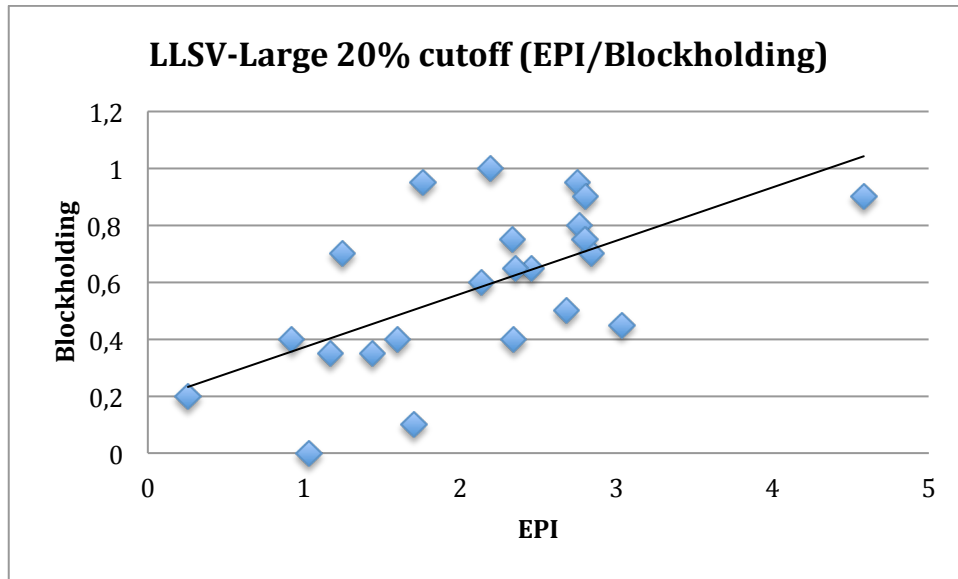
4. Inheritance: path-dependences and institutional complements

In biology, there must be some mechanism by which adaptive solutions are copied or passed on. This is the basis of the Darwinian principle of inheritance, which refers to a broad class of mechanisms by which adaptations are retained, preserved, passed on, or copied through time. In economics, Darwinian inheritance reflects the concepts of path-dependence and institutional complements. These concepts furnish the opportunity to apply an evolutionary approach to describe the emergence of multiple corporate governance equilibria: since different institutional environments exist, different corporate governance species emerge, and the best-fitting (rather than the most-efficient) species will survive.

In accordance with Roe (2003), Ahlering and Deakin (2007), Aoki (2001), Gelter (2009), Gospel and Pendleton (2005), Belloc and Pagano (2013), and Pagano (2012), countries characterised by stronger protection for employees' legal and political rights tend to have more concentrated corporate ownership arrangements. In other words, owners may react to a higher participation of labour in the control of companies (determined by politics) by creating a higher concentration of corporate ownership in order to safeguard their quasi-rents. This is the explanation of the emergence of the European corporations characterised by a structure with a higher level of capital concentration and workers' voice. This suggests a causality relation running from workers' protection to corporate ownership arrangements.

¹⁷ A similar argument is in Iversen and Soskice (2006) and Mueller (2006).

¹⁸ As noted by Boix (1999), the evolution of electoral rules predicts the evolution of working-class pressures: the proportional representation was adopted in those countries in which the new entrant (the Left party) was strong, while the ex-ante plurality/majority system survived in those countries in which the Left party was weak.



In graph 1, we use corporate ownership data on the 20 largest firms (20% cutoff) from La Porta *et al.* (1999)¹⁹ and the employment protection index, referring to the year 1995, from OECD (2013). The 23 countries analysed are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, the UK, and the US. $y = 0,1844 + 0,1873 * EPI$; R-Square: 0,37441; p-value < 2%; n. obs.: 23.

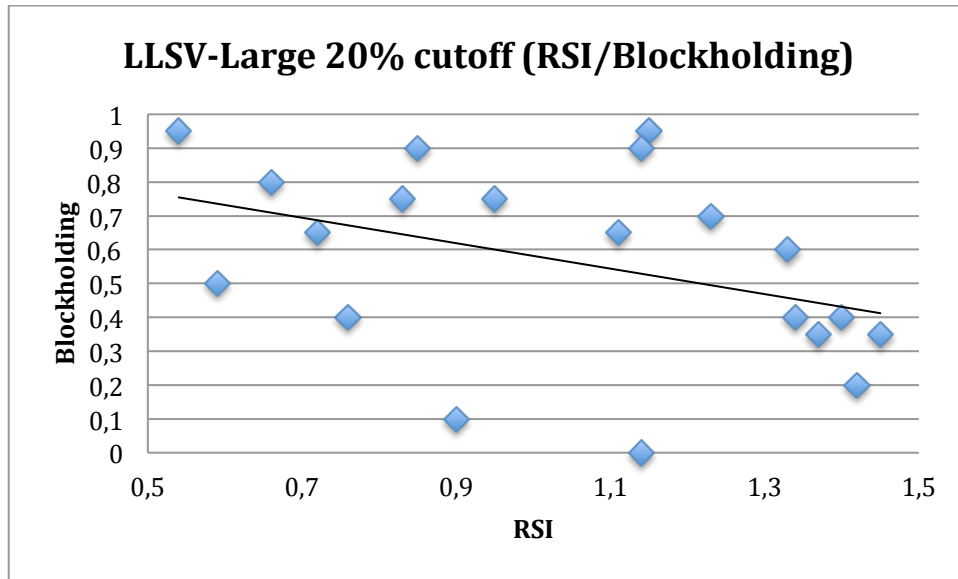
Graph 1. The complementarity between labour protection (EPI) and corporate ownership

However, causation may run in the reverse, as well: a certain degree of concentration of owners' interests may easily encourage some sort of worker reaction in terms of higher employment protection. In particular, the concentration of ownership in the capital market may urge employees to call for protection via politics. That is, a past increase in the participation of labour in the control of large companies implies a future concentration of corporate ownership; and a past increase of concentration of corporate ownership causes a future request by employees of more voice in the corporation. Graph 1 illustrates this correlation between the domain of corporate ownership and employment protection.

In addition, one recent piece of literature affirms that the type of corporate governance is complementary to the type of innovation (Carlin and Mayer 2000, 2003; Mayer 2000; Hall and Soskice 2001; Gospel and Pendleton 2005; and Pagano 2012). In short, corporate governance can be seen as a technology similar to a manufacturing technique or, even better, an inventory management system: 'Armed' corporate governance, such as examples in Europe, as characterised by large shareholders and a high level of workers' protection, supports activities with a 'modular' step-by-step progression (i.e. incremental innovation) that require 'cooperation' among stakeholders. On the other hand, a 'disarmed' species of corporate governance, such as that in the US, characterised by dispersed owners and weak employee protections, stimulates all-or-

¹⁹ It would be useful to check the results illustrated in Graphs 1 and 2 with additional (and more recent) data. Unfortunately, corporate ownership data sources have many mistakes and, above all, there is no clean off-the-shelf database (see Dlugosz *et al.* 2006).

nothing innovation (i.e. radical innovation), providing greater flexibility of work and of capital.



In graph 2, we focus on corporate ownership data on the 20 largest firms (20% cutoff) from La Porta *et al.* (1999) and on the radical specialisation index (see below). Twenty countries are analysed: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the UK, and the US. $y = 0,9577 - 0,3761 * RSI$; R-Square: 0,15612; p-value < 10%; n. obs.: 20.

The radical specialisation index (RSI) denotes the specialism of a country in selected radical sectors (biotechnology, pharmaceuticals, medical technology, and computer technology) relative to selected incremental sectors (transport, civil engineering, and mechanical elements), by using data from the years 2004-2013 on the number of granted patents by European Patent Offices. The index is calculated as follows:

$$RSI_i = \frac{\frac{PatRad_i}{PatRad_n}}{\frac{Pat_i}{Pat_n}}$$

where i indicates the country, n all countries of the sample, and $PatRad$ and Pat stand for, respectively, the number of patents in selected radical sectors, and the number of patents in all selected sectors.

Graph 2. The complementarity between radical innovation (RSI) and corporate ownership

The distinction of these two kinds of innovation is not based on long- or short-term returns (both sectors may require long-term investments), but on the effect of innovation. In the case of radical sectors, an innovation implies substantial shifts in production and the elaboration of novel goods. This can be seen in the information technology, pharmaceutical, biotechnology, chemistry, and medical sectors. In contrast, incremental innovations determine constant but small-scale improvements to existing products and production processes. This can be seen in the following sectors: transport, mechanical elements, electrical machinery, civil engineering, and chemical engineering. Hall and Soskice (2001) assert that the diffused shareholder species causes radical innovation, while the blockholder species causes incremental innovation. However, if the aforementioned causation exists from corporate governance to the development of a kind of innovative sector, it occurs both ways. Graph 2 illustrates this complementarity.

Nations characterised by radical innovations and productive factors (labour and capital) are more flexible. In contrast, in those nations with more developed incremental sectors than radical ones, economic agents require a higher level of protection and stability of their assets (both capital and labour). That is, while incremental sectors are based on committed assets (both capital and labour), radical sectors are characterised by more flexibility of assets. This is relevant for the definition of corporate governance equilibrium via politics: as it will be explained below, preferences and interests may follow the production technologies and, hence, can be dissimilar for owners in different sectors and for labour in different sectors (Hall and Soskice 2001).

5. Selection: efficiency, equilibrium and artificiality

Darwin destroyed the idea (on which the late-18th and early-19th century biology was based) of fixed species stemming from a timeless and universal Plan of Creation, and simultaneously swept away the claim to seek ahistorical laws of organic forms. On board the *HMS Beagle*, Darwin determined that some of the different species of Galapagos faunae had clearly descended from a single ancestral species and that these species had changed their form through descent with modification.²⁰

What Darwin called ‘natural selection’ refers to any attribute that favours survival, such as a better use of resources, a better adaptation to weather and climate, superior resistance to diseases, or a greater ability to escape enemies. Darwin’s choice of the word ‘selection’ was not particularly fortunate. It suggests some agent in nature who, being able to predict the future, selects ‘the best’ biological characteristics. This implies that what exists, that is what is selected, must be efficient.²¹

But this is not what Darwinian selection is and does. Selection is not necessarily globally efficient and does not produce (near) optimal outcomes, nor is it convergent, nor globally stable as an equilibrium (cf. Dow 1987, Vromen 1995). Natural selection should not be too strongly equated with notions of perfection.²² The rejection of the belief in a world designed by a wise and benign Creator implied the rejection of the belief in a perfect/efficient world.

Darwin refers to an idea of local or partial efficiency; that is, according to the local conditions and environment.

²⁰ Darwin infrequently used the term ‘evolution’, but on the whole, he preferred phrases like ‘descent with modification’. An anonymous referee suggests that while in biology speciation arises from common ancestry—‘the tree of life’, corporate form is a forest and not a tree because there are many local origins. However, the common ancestry in this paper is represented by the small firm that decides to grow/modify into a large-sized firm in different forms (diffused shareholding vs. blockholding) along with the political environment.

²¹ It seems to support an idea of selection process that leads to a convergence towards an efficient equilibrium: Much of the literature of corporate governance adopts a Darwinian view of organizations. Firms that survive in competitive markets are presumed to have optimal governance structures. Firms that fail to adapt their governance structures to changes in the business environment supposedly face extinction, leading to a natural selection of efficient organizational forms. (Kole and Lehn 1997: 421).

²² The fact that the selection does not produce perfection was clear in Old-Institutionalists like Veblen and Commons, and it represents one of the main contrasts with (or, perhaps, one of the main limits of) Williamsonian New-Institutional Economics (cf. Vromen 1985).

Natural selection tends only to make each organic being perfect as perfect as, or slightly more perfect than, the other inhabitants of the same country with which it has to struggle for existence. And we see that this is the degree of perfection attained under nature... *Natural selection will not produce absolute perfection*, nor do we always meet, as far as we can judge, with this high standard under nature. (Darwin 1859 in 2004:223, italics is added)

Hence, “[e]volution cannot achieve engineering perfection because it must work with inherited parts available from previous histories in different contexts” (Gould 1985: 210).

In biology, the notion of species is simply expressed by saying that “at a given locality different populations coexist [and] do not interbreed with each other” (Mayr 1988: 318; cf. also Mayr 1991: 29). Note that the economic notion of equilibrium (i.e. Nash equilibrium) is quite similar: it is a circumstance of absence of incentives for any actor involved to unilaterally change his or her strategy/behaviour. Both the economic equilibrium and the biological species represent an idea of stability. But while in biology the environment is largely exogenous, in economics, there is a co-evolutionary process between corporate governance (i.e. species) and politics (its environment): namely, the environment affects the species but the reverse causation also holds.

This co-evolution of politics and corporate governance is strictly related to an idea of artificiality of selection. Simple organisms cannot anticipate biological debacles; in contrast, humans are said to be subject to cultural evolution because intelligence allows us to anticipate and adapt to environmental changes. The institutionalist John R. Commons (1897, 1924) repeatedly proposed that institutional evolution involves ‘artificial’ rather than ‘natural’ selection:

The term ‘natural selection’ is a misnomer, as Darwin himself perceived.^[23] It means merely survival. ‘Selection’ proper involves intention, and belongs to human reason. Selection by man we call artificial. (Commons 1897:90).

The essential characteristic of artificial selection in accordance with Commons is that humans consciously manipulate the criteria or environment of selection; this is the case with politics.

The equilibrium of corporate governance affects the politics because it concerns corporate decisions, which drive the creation and distribution of corporate surplus. Although voters cannot influence corporate choices directly (outside the state-owned sector), they may confer control rights to those investors whose interests are best aligned with their own, whether these are dispersed equity holders, banks, large shareholders, or the state. This indirect influence may be expressed by several channels. The first is based on the class conflicts between workers and owners, as noted by Mark Roe: workers’ interests and their political preferences conflict with owners’ interests and their political preferences. The second channel concerns sectors, by involving cross-class conflicts as deriving from complementarity between innovation and corporate governance: interests follow the investment in innovation and therefore they may be different among members of the same social class—in particular different strategies for

²³ However, as Commons acknowledged, Darwin himself established the idea of artificial selection, which occurs when a human breeder selects strains of a plant or animal according to favoured attributes for further propagation. Hence, it would be a misunderstanding to view artificial selection as an *alternative* to natural selection (Hodgson 2004, Hodgson and Knudsen 2006): artificial and natural selection are not mutually exclusive.

profit-maximising.²⁴ Countries with specialisation in incremental sectors are characterised by policies favouring blockholding and workers’ protection, while countries that specialise in radical innovations (politically) prefer reducing constraints to the flexibility of productive factors. Finally, mechanisms of preference aggregation matter (Pagano and Volpin 2005): proportional voting pushes political parties to cater more to the preferences of social groups with homogeneous preferences, e.g. insiders. Under a majoritarian system, by contrast, there is keen competition for the votes of the pivotal district, that is, the district dominated by a group that is not ideologically committed (e.g. anonymous and distant shareholders).

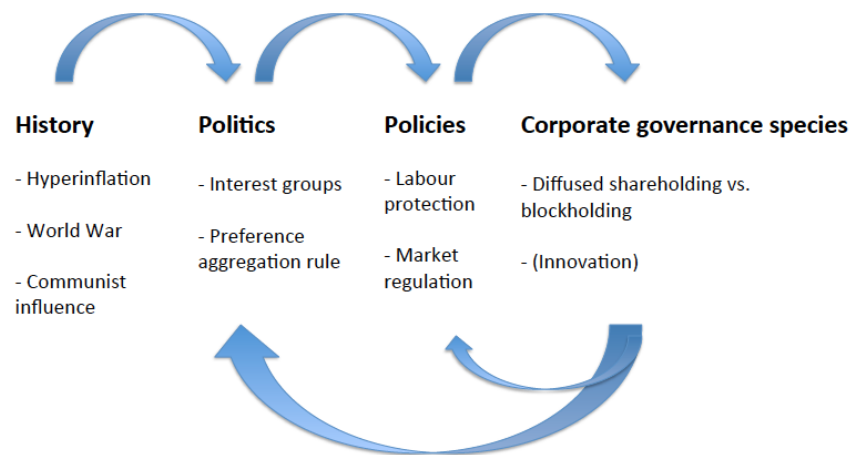


Figure 2. The equilibria between politics and business

In this respect, three main causes of suboptimal equilibrium can be stated. The first one is bounded rationality.²⁵ It means that individuals intend to bring about institutions that are aligned with their interests, but individuals cannot foresee what specific institutions will be most aligned with their interests—Williamson himself affirms that bounded rationality refers to behaviour that is “intendedly rational, but only limited so” (Williamson 1987: 618). Bounded rationality could bring about inefficient outcomes.²⁶

A second cause of sub-optimal equilibrium depends on institutional complementarity. For institutional complementarities, multiple Nash equilibria may emerge, and this may not engender a tendency towards systemic efficiency. Furthermore, because of institutional complementarities, small changes may have durable consequences on ‘hybrid’ situations, e.g. a disequilibrium profile may set off a circular and cumulative causation process leading rapidly to an equilibrium. On the other hand, large changes may not produce institutional or economic readjustments because of the costs of

²⁴ More in detail, in accordance with varieties of capitalism theory as proposed by Hall and Soskice (2001), different political environments promote different decision-making structures within the firm and consequent different performance outcomes.

²⁵ The Lamarckian perspective is consistent with an idea of bounded rationality.

²⁶ The achievement of efficient equilibria under bounded rationality is more difficult if we also consider the nonconvexity property. Refer to Footnote 13.

switching from one equilibrium to another; in this case, the initial condition may have persistent ‘lock-in’ effects.

A third cause is (again) politics-based. Politics serves particular interests rather than social efficiency. This is lucidly expressed by North (1990:16): “institutions are not necessarily or even usually created to be socially efficient; rather, they, or at least the formal rules, are created to serve the interests of those with the bargaining power to devise new rules”.²⁷ Since institutional changes are the outcome of strategies aimed at improving the situation of some or all components of the dominant elite, such changes will occur not only when they produce global efficiency improvements, but if they produce advantages for the dominant elite. Accordingly, large corporations and their governance are the result of a political selection more than a natural convergence towards Pareto optimality.

Hence, differences among corporate governance regimes derive from the outcome of the political arena, and the differences in the political arena (at least in part) are based on the diversity of corporate governance species. Figure 2 summarises this paper’s general argument. History (e.g. hyperinflation, World War, etc.) created the conditions for pressures by interest groups over politics. Such political outcome has defined and continues to define policies: this article has focused on the circular causation between labour protection policies and corporate ownership, even if a similar argument can be advanced between market regulation and corporate ownership.²⁸ In more detail, strong pressure from the working class brought about via politics the emergence of the blockholder species, such as the European corporate governance species. In contrast, in countries in which the working class pressure was weak (e.g. the US), a diffused shareholder species (still) persists. Finally, each corporate governance species supports the political context from which it derives, in a co-evolutionary process between species and environment.

6. Concluding remarks

The Economist wrote:

The debate over how companies are best governed is at least as old as companies themselves. That there is no one best system of governing them is suggested by the fact that the world’s greatest companies have grown up under a number of very different regimes. (The Economist, Idea: Corporate governance, 7th Sept 2009).

At times, the German and Japanese model has performed very well, at other times not. At times, the US model has done superbly, at other times not. For instance, Jensen (1989) predicted the ‘eclipse’ of corporations with diffused shareholders and a move to

²⁷ There is, in fact, no mechanism that ensures that political processes will only produce and retain efficient arrangements (see Olson 1982). This may represent, in Acemoglu’s (2003) words, a failure of the ‘political Coase Theorem’.

²⁸ See Roe and Vatrio (2016). The general idea is that weaker product markets and the concomitant monopoly rents can affect corporate governance by establishing a fertile field where controlling shareholders can cooperatively split rents with incumbent workers. Thus, large owners and incumbent workers can ally politically in order to frustrate competition policy.

corporate ownership with high levels of debt. Some governance mechanisms fare better under certain economic and institutional conditions and worse under others. And conditions change. Changing circumstances alter the incentives that affect policy—the inducements to change or preserve the rules. Since countries vary in their internal political dynamics—institutions, preferences, parties, and interest groups—their policy outcomes vary, and thus their corporate governance systems will differ. This means that, if a convergence does occur, it will not be a natural process (i.e. natural selection), but it will depend on an ‘artificial’ evolution deriving from a convergence of politics among countries.

This article employs Darwin’s theory to explain the origin and persistence of the diversity of corporate governance species. Complex population systems found in both nature and society face locally scarce resources and the problem of survival. These systems may include every population, from amoebas to humans, through economic institutions. In particular, there are three general principles common to both social and organic evolution: variation, inheritance, and selection. These Darwinian principles are able to explain forces that shape corporate governance and ownership around the world. This article has illustrated how Darwinian principles—variation, heredity, and selection—may be related to three economic issues concerning the evolution of corporate governance. These are, respectively, 1) institutional shocks and their dependency on politics; 2) the path-dependence argument; and 3) the emergence of multiple equilibria. This leads to the (Lamarckian) selection of multiple, local, and inefficient equilibria. This article argues that the biological approach works well in explaining the *political* origins (of diversity) of the corporate governance species.

Similar to the tortoises, finches, and iguanas of the Galapagos Islands of Darwin’s book, so (quite similarly) the species of corporate governance are the result of the selection of advantageous attributes inherited from past local variations. However, unlike the inhabitants of the Galapagos Islands, (the members of) corporate governance species are able to affect its environment, i.e. the politics. This co-evolution between politics and corporate governance accounts for the institutional and economic diversity among advanced industrial countries.

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