Variation, inheritance and (natural) selection are three main constituents of Darwinian biological viewpoint. The aim of this work is to show that such Darwinian principles are fully relevant for the analysis of corporate governance regimes around the world: as Darwin in his *On the origin of species* explicates the diversity of species of tortoises, mockingbirds and iguanas of Galapagos islands, so Darwinism may explain why different corporate governance species emerge and persist in different institutional environments. In particular, we will furnish a political economy view, which holds that coalitions of economic agents with political power choose and shape institutions (e.g. the institutions of corporate governance) in their own interest, i.e. political conditions precede corporate governance.
“On the one hand, the owners of passive property, by surrendering control and responsibility over the active property, have surrendered the right that the corporation should be operated in their sole interest. [...] At the same time, the controlling groups, by means of the extension of corporate powers, have in their own interest broken the bars of tradition which require that the corporation be operated solely for the benefit of the owners of passive property.”

Berle, A.A. Jr. and Means, G.C. (1932), 355, italics is added

1. Introduction

The Origin of Species of Charles Darwin is a work on the origin of diversity (Mayr 1982). The main idea of this article is that principles of Darwinian approach – variations, heredity and (natural) selection – are fully relevant to describe the diversity of corporate governance regimes around the world. As Darwin explains why different species of Galapagos tortoises, mockingbirds and iguanas inhabited different islands, so “Darwinism”1 may explain why different corporate governance species emerge and persist in different institutional environments.

Coase (1937:388) argues that within firms, voluntary exchange transactions are replaced by obeying the directions of the ‘entrepreneur-coordinator’ and suggests that firms are “islands of conscious power in the ocean of unconscious cooperation”. Grossman and Hart (1986), Hart (1996), and Hart and Moore (1990) show that power involves the exercise of rights that are not contractible, the so-called residual rights of control. Accordingly, the corporate governance concerns “the structure of rights and responsibilities among the parties with a stake in the firm” (Aoki 2000: 11).

The Law and Economics literature contrast two dichotomus models of corporate governance: Anglo-American vs. Continental European corporate governance (Aguilera Jackson 2003) – they are also labelled outsider vs. insider model (Franks and Mayer 1995), market-system vs. hierarchical control system (Allen and Gale 2000), common-law vs. civil-law model (La Porta et al. 1997, 1998, 1999, 2000, 2008 hereinafter LLSV), or liberalized-market vs. coordinated-market economy (Hall and Sockice 2001): the former is characterised by dispersed shareholding and thick, liquid trading markets, and relations among actors of firms are coordinated primarily via formal contracts and highly competitive market arrangements, while the latter relies on a hard control exerted over the management by a principal or a coalition of shareholders and on collusive (as opposed to competitive), strategic, and non-market interactions among stakeholders. While the former system may be found in the US and UK, the latter has been experienced widely around the world (LLSV). By this token, an American exceptionalism rises: as a century ago academics like Werner Sombart asked why the US was exceptional in that it did not experience socialism, so today academics “worry about a different form of American exceptionalism: why is there so little block holding in the United States” (Becht and De Long 2005: 613).

Many authors have proposed answers to why corporate governance varies so around the world (cf. Denis and McConnell 2003). In particular, Shleifer an Vishny (1997) conceives different corporate governance species in terms of mechanisms available to minimize agency problems. In the Anglo-American species the separation between ownership and control calls for institutions, such as market for corporate control and contractual incentives, to align the interests of diffused shareholder (the principal) and manager (the agents) (e.g. Jensen and Meckling 1976, Fama 1980). On the contrary, in the Continental European species, blockholders retain greater capacity to exercise direct control on management; it produces fewer market-oriented rules (e.g. takeovers), weaker managerial incentives, and greater supply of debt than Anglo-American corporate governance species.

1 See Mayr (1991) for a wide discussion on different meanings of “Darwinism”.

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Note that, while the ‘Modigliani and Miller Theorem’ asserts that in the absence of capital market imperfections and taxation the firm value is independent of the financial structure, in the real world with positive transaction costs the financial structure matters because it contributes to definition of costs and benefits of the corporate governance structures. In particular, while in the Continental European species, non-dominant shareholders may suffer of potential misbehaving of large shareholders, in the Anglo-American species of corporate governance, dispersed shareholders may suffer of managerial misbehaviours (Roe 2005).

However, thought the agency cost theory may furnish an explanation of why different species might converge or not (e.g. it could derive from the competition among corporations with different governances), it does not investigate the origin of the diversity, namely why two (or more) corporate governance species emerge(d). The claim of this work is that such diversity, as well as in biology, is the result of the selection of advantageous characteristics (relatively to the environmental conditions) inherited from past variations. This paper shows the opportunity to introduce a Darwinian approach in the explanation of diversity of corporate governance regimes.

The remainder paper is structured as follows. The next section discusses some links between economics and biology. Section 3 shows in details motivations of our work and some intuitive results. Section 4 surveys the literature on political explanation of corporate governance. In section 5, we review the arguments on politics-driven path-dependence in the case of corporate governance species. Section 6 illustrates in economic terms the meaning of Darwinian selection. Finally, section 7 is dedicated to our remarks.

2. The voyage from economics to biology…and back

Late-eighteenth and early-nineteenth century biology was faced with the concept of fixed species. Darwin destroys the idea of fixed species due to timeless and universal Plan of Creation, and simultaneously sweeps away the claim to seek ahistorical laws of organic form. On board Beagle, captained by Robert Fitzroy² who remained a lifelong opponent of his view, Charles Darwin, looking at the distribution and geological relations of the present to the past inhabitants of South America, fingers out that the some 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.³ Galapagos inhabitants provided Darwin with the theory of common descent and the answer to the “mystery of mysteries”:⁴ individuals with hereditary characters that are better suited to existence and reproduction in a particular environment, and with relation to the other organisms in that environment, are more likely to survive and produce offspring. In short,

“Owing 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).

And again,

“if variations useful to any organic being do occur, assuredly individuals thus characterized will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they

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² Robert Fitzroy had been commissioned to survey the coasts of Patagonia, Tierra del Fuego, Chile, and Peru to provide information for making better charts. The voyage was to completed within two or three years but actually lasted five. The Beagle left Plymouth on December 27, 1831, when Darwin was twenty-two years old, and returned to England on October, 1836.

³ Darwin infrequently used the term “evolution”, but on the whole he preferred phrases like “descent with modification”.

⁴ The “mystery of mysteries” phrase was used in a February 20, 1836 letter from John Herschel to Charles Lyell, in which Herschel wrote that mystery of mysteries is the replacement of extinct species by others. In the Darwin’s introduction of the book On the Origin of Species, the author writes of facts which “seemed to throw some light on the origin of species—that mystery of mysteries, as it has been called by one of our greatest philosophers” (Darwin 1959 in 2004:9) though he did not identify Herschel at the time.
will tend to produce offspring similarly characterized. This principle of preservation, I have called, for sake of brevity, natural selection” (Darwin 1859 in 2004:145, italics is added).

And finally,

“Whatever the cause may be of each slight difference in the offspring from their parents – and a cause for each must exist – it is the steady accumulation, through natural selection, of such differences, when beneficial to the individual, that gives rise to all the more important modifications of structure, by which the innumerable beings on the face of this earth are enabled to struggle with each other, and the best adapted to survive.” (Darwin 1859 in 2004:190, italics is added)

As reported in quotations, Darwinian approach is based on three principles/mechanisms: variation, inheritance and (natural) selection (see e.g. Vromen 1995, Hodgson 1999). First, there must be sustained and abundant variations among members of a species – in biology variations involve genetic recombination. Second, there must be some mechanism through which characteristics are passed in heredity on through the generations – in biology heredity involves genes and DNA. Third, a selective mechanism (e.g. the natural selection) operates because variations that are preserved are those bestowing advantage in struggling to survive.5

It is worthy to underline that the relevance of these principles derives from the fact resources in the environment are scarce in the economic sense. While in the land of Cockaigne – in which every form of scarcity is eliminated because you only have to reach out a hand toward the tree of abundance to get what you want – the struggle for existence (as well as the economic competition) would not exist and therefore no-selection of fitting characteristics would occur and variations and inheritance would not affect the evolution of species,

“[a] struggle for existence inevitably follows from the high rate at which all organic beings tend to increase … on the principle of geometrical increases, […]their numbers would quickly become so inordinately great that no country could support the product. Hence, as more individuals are produced than can possibly survive, there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of distinct species, or with the physical conditions of life. It is the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms” (Darwin 1859 in 2004:75-76)

From Malthus’s doctrine “follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be naturally selected” (Darwin 1859 in 2004:13).

Hence, in perceiving the struggle for existence, Darwin had been strongly influenced by the economics (of Thomas Malthus) for which resources available for a population tended to be outstripped by the reproductive rate and growth of that population (cf. also Mayr 1982, 1991, Hodgson 1999). Because beings do not have access to all environmental resources at once, they face an omnipresent problem of local and immediate scarcity and the struggle of existence becomes the result of an economy of nature:6 “for as all organic beings are striving, it may be said, to seize on each place in the economy of nature, if any species does not become modified and improved in a corresponding degree with its competitors, it will soon be exterminated” (Darwin 1859 in 2004:116). Since resources are scarce, nature chooses (that is, selects) under scarcity, and the struggle for surviving is a complex form of (economic) competition.7 By this token, natural selection, as the

5 In Darwin, no clear line of demarcation has as yet been drawn between species and varieties (cf. also Mayr 1982, 1991). Darwin looks at “the term species, as one arbitrarily given for the sake of convenience to a set of individuals closely resembling each other, and that it does not essentially differ from the term ‘variety’, which is given to less distinct and more fluctuating forms” (Darwin 1859 in 2004:64). In short, “varieties are species in the process of formation, or are, as I have called them, incipient species.” (Darwin 1859 in 2004:126), namely species are well-marked and permanent varieties.

6 Darwin used the concept of “economy of nature” (e.g. Darwin 1859 in 2004:116) to stress the fact the struggle of existence depends on the distribution, rarity and abundance of resources. Economics defines itself as the science of choice under scarcity, alleging that its principles can apply to all economies where choice and scarcity exists (see for instance the definition of economic in Robbins 1932).

7 Some years before the voyage of Darwin, Giacomo Leopardi completed his poem To Silvia, in which the meaning of scarcity in nature is expressed in lyrics:

“O Nature, O Nature,
Why do you not then give
competition, is a source of order because it stimulates the “preservation of favourable variations and the rejection of injurious variations” (Darwin 1859 in 2004:94).

However, as economy inspired biology, so biology represents a possible inspiration for the economics of the future (Anderson 1995): Alfred Marshall in his Principles writes that biology is “the Mecca of the economist” and that economics “is a branch of biology broadly interpreted” (Marshall 1961: 772). Thorstein Veblen is the first theorist to apply extensively (and repeatedly proclaim the need of applying) Darwinian biology to economics (Veblen 1896, 1898, 1899; see also Hodgson 1999, 2008). He argued that “[Economics], taken generally, is to shape itself into a science of the evolution of economic institutions” and that “[t]he struggle for existence, and therefore the fact of selective adaptation, is in fact inseparable from the life process, and therefore inseparable from the life of mankind; but while its scope remains unaltered, the forms under which it expresses itself in the life of society change as the development of collective life proceeds” (Veblen 1896:100).

Darwinism addresses complex population systems found in both nature and society (Hodgson and Knudsen 2006A; Hodgson 2008). These systems involve populations of non-identical entities that face locally scarce resources and problem of survival. They include every biological populations, from amoebas to humans, through economic institutions. A growing literature proves that the evolution of (economic) institutions shares some of the complicated intellectual challenges that characterize the Darwinian evolution of species in biology\(^8\) (e.g. Roe 1996, Bergstrom 2002; Robson 2002; Samuelson 2002; Hodgson 2008; Hodgson and Knudsen 2006A; Pagano 2012). This literature argues that any evolutionary process is consistent with a few general principles common to both social and organic evolution: variation, inheritance (or continuity) and selection.

3. Motivation and intuition

Darwinian principles of variation, inheritance and selection may include many and different economic concepts, proving the usefulness of a Darwinian approach. For instance, Alchian (1950) argued that uncertainty (i.e. imperfect foresight and human inability to solve complex problems) and innovation fuel variation – namely under uncertainty each firm has set of choice which is identified with a distribution of potential outcomes, not with a unique outcome – and the competition selects the firms that make profits (see Penrose 1952 for a critical analysis). Nelson and Winter (1982, 2002) show that the imitation, habit, and routine produces heredity in the industry and that managers select among observed behavior patterns according to what type of behaviour is favoured by management. Chandler (1977) argues that the emergence of the US modern large company, characterized by managerial hierarchy (i.e. the visible hand), derives from both technological and institutional variations in the US (which did not occur in EU); the exponential expansion of transports and communication industry between the end of the 19\(^{th}\) century and the beginning of the 20\(^{th}\) century,\(^9\) and the introduction of antitrust policies.\(^{10}\)

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\(^{8}\) As noted by Hodgson, “Darwinism is not essentially about biological metaphors or analogies. Instead it relies on common abstract features in both the social and the biological world. It is essentially a contention of a degree of ontological communality, at a high level of abstraction and not at the level of detail” (Hodgson 2008:400, italics is not added).

\(^{9}\) Railways determined a real national market while telegraph allowed company to raise profits from stock-turn rather than mark-up. Moreover, the development of stock-turn procedures implied a more relevant role of management and the complexity of management of railways offered a model for other public company. Finally, since high funds for the infrastructure, railway accessed largely by capital market which enjoyed of a strong development, and the invention of telegraph increased the velocity of capital exchange. On the contrary, a weaker internal market for the national barriers and the fact that investments in infrastructure was financed largely by public finance did not determine an equivalent effect in the European economies.

\(^{10}\) High sunk costs and relatively low variable costs in the railway sectors threatened railway companies of strong competition. US companies tried to create cartels to reduce the pressure of competition. Since the end of 19\(^{th}\) century, in the US (differently from the
In this work we focus on variations of corporate governance regimes deriving from politics. In accordance with the so-called “politics school” (Gourevitch 2003), originated by works of Veblen and of Berle and Means, the corporation is mostly a political construct, and corporate-governance arrangements inside the firm among constituents (in particular, managers, owners and workers) interact deeply with a nation’s politics. Nations, as a matter of polity and politics, may follow the interests of certain stakeholders, in particular, workers and owners (Roe 2005). In this respect, party systems, political institutions, political orientations of governments and coalitions, ideologies, and interest groups are the primary determinants of the relationships among managers, owners, workers, and other stakeholders of the firm, namely political forces account for the difference in choice of corporate governance species among advanced industrial countries.

The choice of investigating variations brought about politics relies on two opportunitues: (i) the possibility to show the co-evolution between species (i.e. corporation) and its environment (i.e. the political environment) and (ii) the necessity to consider purposive “Lamarckian” variations in the evolution of corporate governance species. First, while there is little doubt that there are parts of the external environment of firms which are not altered by firms, e.g. geographical factors, there are other aspects of the environment that can be altered by corporations, e.g. the state of employment and of competition in its and related markets, or that cannot be perceived without the influence of firms, e.g. the state of technology, and the tastes of consumers. The political environment represents a case in which the species (i.e. corporation) affects its environment. Secondly, variations may be the consequence of purposive and conscious choices – particular outcomes are prefigured or predicted in advance, such as in self-organizations (Kauffman 1993). Lamarckians (rather than Lamarck) emphasizes on will, choice, anticipation, or volitional activity in the process of evolutionary change (Hodgson 2004). Darwinism does not deny intentionality and Lamarckism, it simply insists that it has evolved in a casual process, and that intentions themselves are caused (Hodgson 2004, Hodgson and Knudsen 2006B). In biology, there are no Lamarckian species, while in socio-economic systems, social agents can, and apparently do, modifying the underlying codes that enable meaningful social interaction. In the case of corporate governance species, agents modify consciously and purposively their political environment by electoral systems.

Following Hirschleifer (1977:2) the isomorphism between economics and biology involves the intertwining of two levels of analysis.

“On the first level, acting units or entities choose strategies or develop techniques that promote success in the struggle for competition for advantage in given environments. The economist usually calls this process “optimizing,” the biologist, “adapting.” The formalizations involved are equations of constrained maximization. The second, higher level of analysis examines the social or aggregate resultant of the interaction of the striving units or agents. The formalizations here take the form of equations of equilibrium.”

In this work we consider the conscious adaptation of entities (i.e. corporations) to political environment, and vice-versa, and study resulting (selected) equilibria.

EU cartel was punished (e.g. by Sherman Act). Hence, while in the EU cartel favoured a coordination among distinguished firms and a reduction of competition, in the US companies had to find a different tool of coordination and reduction of competition. Until the Clayton Act, it was represented by merges and corporate integrations. Hence, in the US large company merged in larger company, while in the EU small or medium firms created cartels. Finally, larger company increased the role of management (the visible hand in the Chandler’s terminology).

The environment of a species is not merely its physical environment, but also the many other species that constitute its prey, its predators, its competitors.

It is these possibilities of consciously altering the environment by firm (and men) that may create difficulties in comparing the economist to the biologist: “men can consciously optimize – or so we often like to think – whereas, for all but a few higher animals, the concepts of “choice” or “strategy” are only metaphorical” (Hirschleifer 1977:4). Hence, a widespread accusation against the Darwinian account of evolution is that it is blind (e.g Coase 1978). Nevertheless, Darwin did not treat humans as if they were incapable of self-reflection, reason, foresight, purpose or planning (Hodgson and Knudsen 2006B).

By Lamarckism traits are acquired within a generation through learning and imitation (Hodgson and Knudsen 2006B): a giraffe spent its life intentionally stretching to reach the highest branches and such an acquired characteristics would pass by imitation to the next generation. Many prominent social scientists have described socio-economic evolution as Lamarckian (e.g. Hirschleifer 1977, Nelson and Winter 1982, 2002).

Roe (1996:665) writes that “Genes are Darwinian, but civilization is Lamarckian”.

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Roe (1994) explored the idea that the American corporate governance species is (also) the result of the visible hand of American politics, in particular of political decisions about the organization of financial intermediaries. American democracy characterized by populism and federal system which favoured smaller and local interests over concentrated private (economic) power, affected American finance, which in turn affected the structure of their large firms: “American politics deliberately weakened and shattered financial intermediaries, thereby making managers more powerful than they otherwise had to be” (Roe 1994:x). The Sherman Act (which is the first, and by far the most important, piece of anti-monopoly legislation), the McClarren Act (which constraints interstate banking in the US), the Glass-Steagall Act (which separates commercial banks from investor banks), the Security and Exchange Act (which defines permissible behaviour among directors, shareholders and lenders) pushed American economy down a path different from that of Japan and Germany, namely they knocked the US off its Nippon-Rhenis trajectory and toward the current Anglo-American one (cf. e.g. Gourevitch 1996). Mark Roe (2003) notes that, on the contrary, “social democracies,” such as those in Continental Europe, pressure corporate managers and gives voice to claims on the corporations employee job security, income distribution, social welfare and social stability, to name a few. Owners of capital respond by concentrating ownership to insure that managers act in the interests of the firm’s owners rather than giving away the store to workers. In addition, actors of these corporate structures (workers, blockholders, managers, etc.) do not vote to policies favouring modern pro-shareholder institutions—such as incentive compensation, hostile takeovers, shareholder wealth maximization norms, etc.—because it is not their interest to promote purely shareholder values. As a result, a structure with higher level of capital concentration and workers’ voice emerges and persists in the European corporations. Hence, the choice of focus on politics as determinant of corporate governance is motivated by the fact that politics is generally considered an exogenous factor of corporate governance, while we show that, not only it affects the corporate governance species, but also that it depends (at least in part) on corporate governance species. There is, in other terms, a circular and cumulative causation process between politics and corporate governance. Moreover, such a process is characterized by a Lamarckian evolution which takes into account purposive variations. In our case, vote expresses the purposes of agents. Once defined our focus on variations, we need to illustrate the consequent concepts of heredity and selection in economic terms.

The principle of heredity implies that there are interdependences between past and future. In economics, such interdependences are termed as institutional complements and they lead to “path-dependency” (e.g. Bebchuk and Roe 2004). Two institutions are complementary when the “performance” of one institution benefits from the presence of another institutions and vice-versa (cf. also Pagano and Vatiero 2014). As a consequence, choices in one domain act as exogenous parameters in other domains and constitute the institutional environment in which institutional choices are made. In this setting, “one type of institution rather than another becomes viable in one domain, when a fitting institution is present in another domain and vice-versa” (Aoki 2001: 225). The term “fitting” used by Masahiko Aoki invokes an evolutionary approach to institutional contexts. As long as institutional complementarities are deep and strong, they can affect, or conceivably determine, the best-fitting institutional arrangements, and that system will differ depending on which local complement dominates. Hence, the current corporate governance regimes, as a biological evolution of species, inherited (at least in part) the characteristics of past arrangements. It can be proved that conditions of institutional complementarity lead to (select) multiple equilibrium profiles (Aoki 2001, Milgrom and Roberts 1990). That is, for the institutional complementarity the competition may not select one corporate governance system. Moreover, the competition under conditions of institutional complementarity may not select the most efficient system. In other words, institutional complementarities may engender, not a tendency towards systemic efficiency, but the emergence of different and (in)efficient business practices — at least in part — by the so-called Freiburg School and proposed again with the birth of European Community.

By populism Roe refers to “a widespread Jeffersonian attitude that large institutions and accumulation of concentrated economic power are inherently undesirable and should be reduced, even if concentration is productive” (Roe 1994: 29). Jefferson’s democracy relies on a society where wealth is diffused and economic power can not be monopolized. Antitrust (see also Pagano 2012) and financial fragmentation policies are part of this large movement in American society to limit concentration of economic power. A similar movement arise also in Austria at the end of the 19th century and in Germany before the WWII; it is represented by a liberal though which was stopped by two World Wars, the failure of Weimar Republic and the rise of Nazi regime, but it was preserved (underground) by the so-called Freiburg School and proposed again with the birth of European Community.

economic equilibria. Finally, because of institutional complementarities, small changes may have durable consequences on “hybrid” situations, e.g. disequilibrium profile may set off a circular and cumulative causation process leading rapidly to an equilibrium; on the other hand, big changes may not produce institutional or economic readjustments because of the costs of switching from one equilibrium to another; in this case the initial condition may have persistent “lock-in” effects.

In short, in our work, Darwinian principles of variation, heredity and selection are reflected by (politics-driven) institutional shocks, interdependences among institutional domains and the emergence (i.e. selection) of multiple Nash equilibria.

4. Political (and not only legal) origin

In accordance with politics-school, political forces account for the difference in choice of corporate governance species among advanced industrial countries: political conditions precede corporate governance. A first example is represented by legal origin theory. The legal origin theory (LLSV) proves that common-law countries – by relying on adaptive judges, wide judicial discretion, light regulation, and private contracting – protect shareholders and creditors better than civil-law countries – by relying on rigid codes. This theory traces relies on different legal families to 12th-13th century in England and France (Glaeser and Shleifer 2002): Since the crucial difference in political context between the two nations at the time – France was less peaceful than England – in France there was a greater need for protection and control of law enforcers by the state. Consequently, France adopted a civil law system characterized by fact-finding by state-employed judges and, later, a reliance on codes rather than judicial discretion. In contrast, England developed a common law system that relied on fact-finding by juries, independent judges and judge-made law rather than strict codes (see Siems 2007). These two systems were exported in other countries (cf. Xu 2011). Hence, in accordance with the legal-origin theory, the medieval “variation” between common and civil law (based on different political conditions) is reflected in current economic outcomes (e.g., corporate finance outcomes).

However, as noted by Roe (2003, 2006), the politics in this argumentation exist only in the initial (medieval) choice of the legal system (common vs. civil law) and no longer play a role in shaping the actual content or use of law after the initial choice of systems. In this respect, the historic distinction between the common-law and civil-law systems considered by the legal-origin theory is only a part of the evolution of corporate governance regimes but not the whole history. The politics school explanation of variety of corporate governance regimes goes beyond the notable legal-origin theory and suggests several political-driven variations. Thinking has come from a number of different angles: There is not one political origin, but several. The proposed Darwinian approach is able to reconcile different contributions on the political origin of variety of corporate governance. Indeed, many scholars are sceptical that the politics and the variations illustrated by the legal origin theory are sufficient to explain the variety (cf. Xu 2011 for a survey). It is

\[17\] In Damaska’s (1986) words, civil law is “policy implementing” whereas common law is “dispute resolving”. In more details, La Porta et al. (1997:1118-1119) writes that:

“The civil legal tradition is the oldest, the most influential, and the most widely distributed around the world. It originates in Roman law, uses statutes and comprehensive codes as a primary means of ordering legal material, and relies heavily on legal scholars to ascertain and formulate its rules... The common-law family includes the law of England and those laws modeled on English law. The common law is formed by judges who have to resolve specific disputes. Precedents from judicial decisions, as opposed to contribution by scholars, shape common law.”

Compared with civil law countries, the greater respect for jurisprudence as a source of law in common countries suggests that judges have broader interpretation powers and courts are more able to mould and create law as circumstance change. Common law stands for the strategy of social control that seeks to support private market outcomes, whereas civil law seeks to replace such outcomes with state-desired allocations (cf. La Porta et al. 2008).
difficult for legal origin with the time invariant nature to explain financial change over time (La Porta et al. 2008 admit such difficulty).

For instance, Rajan and Zingales (2003) have shown that the relative importance of capital markets and intermediaries in individual countries has evolved and reversed over time. They examine financial development in developed countries over the twentieth century, and find that in 1913, in contrast to the prediction of LLSV, civil law countries had more developed financial markets than common law countries. However, compared with common law countries, the financial markets in civil law countries declined more between 1913 and the early 1990s. This kind of ‘great reversal’ is hard to explain by the theory of LLSV, which implies invariant influence of legal origins over financial development. Rajan and Zingales (2003) present an interest group theory to explain the rise and the fall of financial markets in developed countries. They argue that incumbents, both in the financial sector and in industry, have a vested interest in preventing financial development because a more efficient financial system, while facilitates entry and encourages competition, leads to lower profits for incumbents. Hence, incumbents of civil law countries (and in particular of European countries) have tried to inhibit financial developments. In addition, in civil law countries is easier for a small group representing private interests to influence politics because system is so centralized that is easier to be captured, while in common law countries politics is less easy to be captured because it is dispersed and subject to local influences.

Perotti and von Thadden (2006) offer evidences of the “great reversal” phenomenon, stressing that in the first half of the 20th century, due to hyperinflation in several financially developed countries, the middle class became concerned with labour-income risk associated with free markets. They argue that when financial wealth is sufficiently concentrated, there is political support for high labor rents and a strong governance role of banks and large investors. In this respect, the inflation shock after the WWI had a different effect on the financial holding of the middle class in different countries. Those countries such as Germany with an impoverished middle class turned to a more corporatist system with suppressed financial market, whereas other countries (e.g. the US) escaped high inflation and hence maintained market friendly institutions, despite some of them, such as the Netherlands and Switzerland, have wrong legal origin (i.e. civil law).

For Roe (2003, 2006), the variation of post-WWII policies on labour (versus capital), due to 20the century war, occupation and communist influence, explain the variety of corporate governance regimes better than legal-origin theory. In particular, Roe suggests that stronger employment law and social democratic policies increased the incentives to concentrate ownership in European countries.

Finally, Ugo Pagano (2012), starting from works of Barrington Moore, argues that the roots of the diversity of corporate governance species can be found in the different aristocratic and democratic origins at the time of the Second Industrial Revolution, when large firms started to become dominant in some sectors, and the political prestige of the aristocracy and the aristocratic aspirations of the bourgeoisie were still evident in Europe, though not in the US.

5. The meaning of inheritance: path-dependence and institutional complements

Influenced by the friend geologist Charles Lyell’s interpretation of geologic change as the steady accumulation of minute changes over enormously long spans of time, Darwin applied the David Hume’s concept that “the future will resemble the past”.

“On the theory of natural selection we can clearly understand the full meaning of that old canon in natural history, Natura non facit saltum [Nature makes no jumps]. This canon, if we look only to the present inhabitants of the world, is not strictly correct, but if we include all those of past times, it must by my theory be strictly true.” (Darwin 1859 in 2004:228).

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. These mechanisms often involve
genes and DNA. In their evolution, complex systems carry the baggage of their own history. Hence to understand the nature of an organism, we must know something about its evolutionary past (Hodgson 2001: 332). In economics, entities have some capacity to retain and pass on to others workable solutions to problems of survival. In economics, interdependences between past and future lead to a pattern that Gunnar Myrdal and institutionalists such as William K. Kapp termed “circular and cumulative causation” and are now called “path-dependency” (see also Vatiero 2009).

In accordance with Aoki (2001) and Roe (2003) distant shareholders (blockholders) are institutional complements to low (high) employment protection. In the case, a past increase of participation of labour in the control of big 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. In particular, Roe states that countries characterized by stronger employees’ legal protection and political rights (stronger social democracies, in his terminology) tend to have more concentrated corporate ownership arrangements via the politics:

[…] politics could, say, determine a particular labor structure, which might call forth only one type of ownership or management structure. For example, German codetermination – by which labor takes half of the board seats – demand concentrated ownership, because shareholders would do poorly if they failed to meet the boardroom’s labor block with their block. (Roe 2003: 5)

In other words, to a higher participation of labour in the control of companies (determined by politics), owners may react by creating a higher concentration of corporate ownership in order to safeguard their quasi-rents. This suggests a causality relation running from workers’ protection to corporate ownership arrangements. However, causation may run in the reverse as well: a certain degree of concentration of owners’ interests may easily encourage some sort of reaction of workers in terms of higher employment protection (cf. Roe 2003, Aoki 2010, Belloc and Pagano 2009, 2013, and Pagano 2012). In particular, the concentration of ownership in the capital market may urge employees to call for protection via the politics.

[E]arly in the twentieth century, the visible power of Germany’s large banks, people’s envy and resentment of rich industrialists, and the disorientation and anomie induced by Germany’s rapid transformation from an agricultural nation into an industrial one helped to call forth codetermination to tame the bankers and industrialists, and to give the workers a voice in the strange new industrial enterprises (Roe 2003: 112-113).

The complementarity between the domains of corporation ownership and of workers’ voice furnishes the opportunity to apply an evolutionary approach to describe the emergence of multiple corporate governance equilibria: since different institutional environments, different corporate governance species emerge and best-fitting (rather than most-efficient) species will emerge and survive. That is, the current institutional arrangement in the domain of corporate ownership structure is (in large part) an inheritance of past institutional arrangement related to the domain of labour, and vice versa. Institutional complementarity theory therefore may furnish a mechanism of heredity between past and future of corporate governance species.

Moreover, 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; 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 ones in Europe, characterized by large shareholders and high level of workers’ protection supports activities with a “modular” step-by-step progression (i.e. incremental innovation) that requires “cooperation” among stakeholders, while disarmed species of corporate governance, such as one in the US, characterized by dispersed owners and weak employees’ protections stimulates all-or-nothing innovation (i.e. radical innovation), providing greater flexibility of work and of capital. 18 Hall and Soskice (2001) assert that the

18 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 totally new goods. This can be seen in the information technology, pharmaceutical, biotechnology, chemistry, and medical sectors. On the contrary, incremental innovations determine constant but small-scale improvements to existing products and production processes (e.g., transport, mechanical elements, electrical machinery, civil engineering, and chemical engineering).
disarmed species of corporate governance is a complement to radical innovation, while the armed species is an institutional complement to incremental innovation. However, if the aforementioned causation exists from corporate governance to the development of a kind of innovative sector, it occurs both ways. The development of a radical innovative sector calls for diffuse shareholding, while the development of an incremental innovative sector favours the concentration of capital (Aoki 1990, 1994, Hall and Soskice 2001). Corporate governance and innovation are institutional complements. A consequence of this prediction is that in nations with more developed incremental sectors (than radical ones) economic agents will call for protection and stability of their assets (both capital and labour) via politics, while in nations characterized by radical innovations, politics should favour the flexibility of assets.

Hence, the influence of corporate governance species on politics may be expressed by at least two channels: the first one is based on the conflicts and coalitions between workers and owners, as noted by Mark Roe: Interests are primarily defined as labor versus capital. The second one focuses on sectors, studying cross-class conflicts or coalitions as deriving from complementarity between innovation and corporate governance as suggested by Hall and Soskice: Interests follow the investment in innovation and therefore they may be different for members of the same social class.

The outcome of corporate governance affects voters because it affects 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 dispersed equity holders, banks, large shareholders, or the state. It means that a political majority (based on class-division and/or cross-class conflicts) can influence the corporate governance structure. In the Anglo-American species the surplus is shared among flexible stakeholders, while in the European species it is smoothed among committed ones. In the first case, economic agents will vote for favouring flexible assets, in particular in the case of radical sectors which characterize Anglo-American species, while in the second case, agents will vote for protecting committed assets, in particular in the case of the incremental sectors that characterize European industry.

In addition, divergences of corporate governance regimes may be the result of not preferences but the mechanisms of preference aggregation, such as electoral laws, federalism, legislative-executive relations, and party systems (Pagano and Volpin 2005). Pagano and Volpin’s findings suggest that a proportional system produces weak shareholder protection and strong employment, i.e. an outcome favourable to managers and workers and unfavourable to the dispersed owner. A majoritarian system produces the opposite: strong shareholder protection and weak employment protection, i.e. the outcome preferred by diffused shareholders.19 It means that the proportionality of the voting system leads to a lessened degree of shareholder protection, while it is associated with a stricter workers-rights legislation. Hence, committed stakeholders’ interests will be strengthened by a proportional electoral system, while owners’ interests of flexible assets will be better supported by a majoritarian system.

6. Selection: efficiency, equilibrium and artificiality

Darwin’s choice of the word “selection” was not particularly fortunate. It suggests some agent in nature who, being able to predict future, selects “the best”. It seems to support an idea of external (that is natural) selection process which leads to a convergence toward an efficient equilibrium. But, this is not what Darwinian selection is and does. Selection is not only natural and it does not necessarily neither globally efficient or (near) optimal outcomes, nor convergent, nor globally stable as equilibrium. 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, and a greater ability to escape enemies.

19 The intuition behind these results is that proportional voting pushes political parties to cater more to the preferences of social groups with homogenous preferences, that is, managers and employees. Under a majoritarian system, by contrast, there is keen competition for the votes of the pivotal district, that is, district dominated by not ideologically committed group.
Natural selection is often referred to as “the survival of the fittest”, a term coined not by Darwin, but by social philosopher Herbert Spencer. “The survival of the fittest” means that if the selective pressure is high enough, some firms survive and some die, depending on the payoffs associated with a particular strategy, and only most efficient survive. The surviving firms are efficient because only the efficient survive. “What survives is presumptively efficient: if it were inefficient, the practice, the law, or the custom would be challenged by its more efficient competitors” (Roe 1996:641). It implies that whatever organization form is most efficient it will be the one observed. The competition of both product and financial markets may bring about a convergence to one “species” of corporate governance: competitive advantages of firms under the most efficient type of corporate governance regime should displace those governed by alternative governance structures. In other words, the competition has the role to select and converge towards efficient institutional arrangements (Hansmann and Kraakman, 2001). Treating Darwinian natural selection in this way leads to a ‘Panglossian view’ according to which all institutions and arrangements that exist are elevated to the status of the best possible ones.

Dow (1987) objects the assumption that what exists (that is, what is selected) must be efficient. Following Simon (1983), he argues that only a weak form of selectionism is tenable: “in a relative sense, the fitter survive, but there is no reason to suppose that they are fittest in any absolute sense” (Simon 1983:69; emphasis in original). Weak form selectionism entails ‘survival of the fitter’, while a strong form entails ‘survival of the fittest’. Natural selection should not be too strongly equated with notions of perfection. In particular, we should refer to an idea of local or partial efficiency, that is according to the local conditions and environment.

“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)

And again,

“Natural selection in each well-stocked country must act chiefly through the competition of the inhabitants one with another, and consequently will produce perfection, or strength in the battle for life, only according to the standard of that country.” (Darwin 228)

Therefore, Darwin refers to an idea of efficiency which is relative to the given environment (and history). The reject of the belief in a world designed by a wise and benign Creator implied the rejection of the belief in a perfect/efficient world. Possibly suboptimal phenomena due to the path-dependence are widely acknowledged: “Evolution cannot achieve engineering perfection because it must work with inherited parts available from previous histories in different contexts” (Gould 1985: 210).

In this respect, works have emphasized the role of historical conditions in shaping path-dependency and diversity in corporate governance patterns (e.g. Bebchuk and Roe 1999, Schmidt and Spindler 2002, Beck et al. 2003; Djankov et al. 2003). This literature is sceptical that corporate structures have converged to one corporation model thus far and, furthermore, proves that differences have persisted thus far. Institutional complements can conceivably determine the best-fitting (rather than most efficient) corporate governance system, and therefore systems will differ depending on which local complement dominates. Since institutional complementarity, multiple Nash equilibria may emerge and it may engender not a tendency towards systemic efficiency. Then, current corporate governance regimes inherited (at least in part) the characteristics of past institutional arrangements and institutional patterns may sustain even inefficient equilibria.

Moreover, the achievement of efficiency is more complex for the fact that the environment in the case of corporate governance species, i.e. the politics, serves particular interests rather than socially 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”. This may represent, in Acemoglu’s (2003) words, a failure of the
“political Coase Theorem”\textsuperscript{20} Accordingly, the big corporation and its governance are the result of a political selection more than a convergence toward the Pareto optimality. Moreover, in our case, a co-evolutionary process between corporate governance (i.e. species) and the politics (its environment) holds, namely the environment affects the species but also the reverse causation holds. Co-evolution retains notions of fitness between species and environment, and vice-versa. As suggested by Veblen’s perspective, both the agent and his environment is at any point the outcome of the last process (Hodgson 1999:98-99).

A further aspect of evolution is represented by the notion of equilibrium. In economics, an equilibrium (i.e. Nash equilibrium) is defined by the absence of incentives for any actor involved to unilaterally change his or her behaviour given a structure of game. In biology, the notion of equilibrium is sometimes expressed by saying that ‘fitness is equal at the margin’, that is individual organisms are maximizing their fitness in accordance with the environment (cf. Vromen 1995:6). In both cases, the idea of equilibrium is local: While in economics, incentives derive from the structure of game (which defines the environment for players), in biology, fitness depends on the environmental factors. Hence, through selection, a population as a set of entities will gradually adapt in response to the criteria defined by an environmental/local factor as well as a player in a game will respond to other given players’ strategies.

Finally, the concept of selection should include also human reasons rather than natural ones. In a certain sense one can say institutions are selected by people, not by nature. The institutionalist Commons (1924, 1934), repeatedly proposed that institutional evolution involves “artificial” rather than “natural” selection. He rejected the Darwinian ‘natural selection’ metaphor on the grounds that what it is involved in socio-economic evolution is artificial selection. The term ‘natural selection’ is a misnomer, as Darwin himself perceived. It means merely survival. ‘Selection’ proper involves intention, and belongs to human reason. Selection by man we call artificial (Commons 1897:90). As Commons acknowledged, Darwin himself established the idea of artificial selection,\textsuperscript{21} which occurs when a human breeder selects strains of a plant or animal according to favoured attributes for further propagation.\textsuperscript{22} The essential characteristic of artificial selection is that humans manipulate the criteria or environment of selection; the selection process is under the control of a human agent (see also Coase 1978). In more generally terms, institutions change because the individuals are moved by an effort to realize their aspirations. In the case of corporate governance species, such artificiality of selection derives from the fact that individuals can express and support their aspirations via politics.

7. Concluding remarks

Economic species are the product of unique historical circumstances. Evolution is not progress toward some ahistorical ideal, but sequential path-dependent trajectories, just as Darwin said it was (Hodgson 2001). In this paper, we have proved that the Darwinian approach based on principles of variation, heredity and selection can be useful to describe the diversity of corporate governance regimes.

We have focused our investigation on political variations, including the notable legal origin theory and conciliating different contributions of politics-matters thesis. Studying the politics as the environment has allowed us to take into account the co-evolution between species and its environment involving a Lamarckian approach. Finally, we have shown that the selection of corporate governance species, and more generally of economic species, is (also) artificial because by political elections agents can express their interests and does not lead necessarily to one efficient equilibrium.

\textsuperscript{20} Extending the Coase theorem to the political sphere, Acemoglu defines as “political Coase theorem” the view that “political and economic transactions create a strong tendency towards policies and institutions that achieve the best outcomes given the varying needs and requirements of societies, irrespective of who, or which social group, has political power” (Acemoglu 2003: 621).

\textsuperscript{21} It would be a misunderstanding to see artificial selection as an alternative to natural selection (Hodgson and Knudsen 2006B); artificial and natural selection are not mutually exclusive (Hodgson 2004).

\textsuperscript{22} In this respect, the role of the manager can be compared to the role of the breeder as in Darwin’s description of artificial selection.
Bibliography


