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Reinhard H. Schmidt/Gerald Spindler

Path Dependence, Corporate Governance and Complementarity

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* The authors are Professor of International Banking and Finance at the University of Frankfurt, and Professor of Law at the University of Göttingen, respectively. This paper is an extended version of a comment on the paper by Bebchuk and Roe quoted in note 1 below. This comment was written after that paper was presented at a conference at the Goethe-University in Frankfurt (Germany) in May 1998.

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Abstract

In a series of recent papers, Mark Roe and Lucian Bebchuk have developed further the concept of path dependence, combined it with concepts of evolution and used it to challenge the wide-spread view that the corporate governance systems of the major advanced economies are likely to converge towards the economically best system at a rapid pace. The present paper shares this skepticism, but adds several aspects which strengthen the point made by Roe and Bebchuk.

The present paper argues that it is important for the topic under discussion to distinguish clearly between two arguments which can explain path dependence. One of them is based on the role of adjustment costs, and the other one uses concepts borrowed from evolutionary biology. Making this distinction is important because the two concepts of path dependence have different implications for the issue of rapid convergence to the best system.

In addition, we introduce a formal concept of complementarity and demonstrate that national corporate governance systems are usefully regarded as – possibly consistent – systems of complementary elements. Complementarity is a reason for path dependence which supports the socio-biological argument. The dynamic properties of systems composed of complementary elements are such that a rapid convergence towards a universally best corporate governance systems is not likely to happen.

We then proceed by showing for the case of corporate governance systems shaped by complementarity, that there even is the possibility of a convergence towards a common system which is economically inferior. And in the specific case of European integration, "inefficient convergence" of corporate governance systems is a possible future course of events.

Keywords: Corporate governance, convergence, economic systems, complementarity

JEL classification: G 38, K22, P50,

I. Introduction

There are essentially three overriding substantive themes which shape the international academic debate on national corporate governance systems:

(1) What constitutes a good, or workable, or efficient, corporate governance system?

(2) Which of the prototypes of corporate governance systems that we know is economically more efficient, or simply better?

(3) Is there a tendency towards a convergence between the different national corporate governance systems, and if so, can this convergence be expected to be rapid and relatively smooth?

Behind these substantive issues, there is the methodological issue of how one can usefully describe and analyze corporate governance systems in general and specific national corporate governance systems in particular.

"A Theory of Path Dependence in Corporate Governance and Ownership" by Lucian Bebchuk and Mark Roe in this volume[1] and related earlier work by Mark Roe on path dependence and corporate governance[2] make valuable contributions both at the conceptual or theoretical level and at the substantive level. We see the main theoretical contribution in the way in which four concepts: path dependence, efficiency, evolution and convergence, are integrated. In his book "Strong Managers, Weak Owners"[3] from 1994, Roe had demonstrated that institutional features which we observe today are shaped by historical events which may, from today's perspective, appear to be accidental in nature and which may have caused today’s institutions to appear inefficient. The general lesson of that book is that history and politics matter, and that they probably matter more than purely

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[1] See Mark Roe and Lucian Bebchuk, A Theory of Path Dependence In Corporate Governance and Ownership, The Center for Law and Economic Studies Working Paper No. 131, Columbia Law School (4/7/98) (henceforth quoted as Bebchuk & Roe, working paper). References in our paper are mainly to the version of 1998. A thoroughly revised version of the Bebchuk & Roe paper was published as A Theory of Path Dependence In Corporate Ownership and Governance , 52, Stanford L. Rev. 127 (1999) (henceforth referred to as the SLR version) and is reprinted in this volume with slight modifications (JEFF: PLEASE CORRECT THIS IF THIS IS *NOT* THE CASE OR IF IT SHOULD NOT APPEAR HERE. IN THE FOLLOWING, I TRY TO INDICATE WHERE CORRECTIONS MIGHT BE RELEVANT. BUT I WOULD NOT BE TOO SURPRISED IF THE PAPER IN THE BOOK WERE THE ORIGINAL ONE, SINCE THERE IS A WORKING PAPER NO 131 ON COLUMBIA'S WEB SITE FROM DECEMBER 1999 WITH THE SAME TITLE AS THE TITLE OF THE 1998 PAPER BUT THE CONTENT OF THE SLR-VERSION. (OWNERSHIP AND CORPORATE GOVERNANCE INSTEAD OF CORPORATE GOVERNANCE AND OWNERSHIP) SO I AM UNFORTUNATELY STILL A BIT CONFUSED. HARRY (SCHMIDT)).

[2] See in particular Mark Roe, Chaos and Evolution in Law and Economics, 109 Harv. L. Rev. 641 (1996) and Path Dependence, Political Options and Governance Systems, in: Comparative Corporate Governance: Essays and Materials 165 (Klaus J. Hopt/Eddy Wymeersch eds., Berlin/New York: de Gruyter 1997).

economic or efficiency-related considerations, and certainly more than the conventional wisdom in economics and in the law and economics community in America would suggest. In connection with efficiency, evolution and convergence, the concept of path dependence creates a solid theoretical basis for the mainly empirical accounts provided in that book and related papers.

Bebchuk & Roe's contribution at the substantive level are the implications which they derive by applying these concepts to one of the most fundamental questions in the area of corporate governance. Based on their insight into the importance of path dependence, Bebchuk & Roe challenge the predominant view among economists and law and economics scholars that the corporate governance systems in the major industrial countries are likely to converge rapidly to what is typically considered to be the most efficient system, namely the Anglo-Saxon one.[4]

The present paper is strongly inspired by the stimulating work by Mark Roe and in particular by an earlier version of the paper in this volume. Our paper also addresses both the conceptual and the substantive issues. We wish to emphasize at the outset that we completely concur with Roe and Bebchuk & Roe that path dependence is important as a concept and as a fact of life, and that convergence towards the "best" corporate governance system is *not* likely to happen soon. However, there are also some points of disagreement on which we would like to focus in this paper. They may not lead to a different assessment of the main propositions in the Bebchuk & Roe paper, but we believe that they might turn out to be important for the future course of the debate which it has initiated.

After explaining that it "might appear natural" to expect that corporate governance systems will converge relatively quickly since "nations and firms" are under pressure to adopt the "most efficient corporate governance rules and structures" in order to be internationally competitive, Bebchuk & Roe make it very clear that this is not their view.[5] However, towards the end of the earlier version of their paper, Bebchuk & Roe qualify their rejection of the established view considerably by admitting

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[3] Cf. Mark Roe, Weak Owners, Strong Managers: The Political Roots of American Corporate Finance. Princeton N.J.: Princeton University Press, 1994.

[4] As an example from the academic literature, see Henry Hansmann, Reinier Kraakman: The End of History for Corporate Law, working paper presented at the Tilburg University 1999 Conference on Convergence and Diversity in Corporate Governance Regimes and Capital Markets. Referring to the entire financial system, Raghuram Rajan and Luigi Zingales (The Politics of Financial Development, mimeo, University of Chicago, 1999) make the same point. A great many statements of a similar nature can be found in the popular press; see e.g. D. Roche: "The 'Global' World is Anglo-Saxon"; in: Wall Street Journal Europe, 05.01.2000, and "Bidding for the Future", in: *The Economist,* Feb. 12, 2000, 75.

[5] The citations are from p. 5 of the working paper version; in the SLR version similar statements about "what might be thought" can be found on pp. 134f. JEFF: PLEASE INSERT THE CORRESPONDING PAGE FROM THE VERSION IN THE VOLUME, if that is the same as the SLR version)

that the possibility to achieve great improvements in terms of efficiency brings with it "limits of persistence" of what might be inefficient institutional arrangements such as a specific national corporate governance system.[6] It can safely be assumed that this view is shared by many observers who would readily concede that convergence is not likely to be automatic and more or less frictionless and who would thus basically accept the path dependence argument.

Here we disagree, as we want to demonstrate in this paper. Our reservation is based on a different understanding of what constitutes, and causes, path dependence. We will therefore first discuss how we interpret the conceptual underpinning of path dependence (section II), and then proceed to show why using the concepts underlying path dependence more systematically than Roe and Bebchuk & Roe do in their papers, leads to different and possibly even more unexpected conclusions with respect to the convergence of corporate governance systems. We will argue in section III that the concept of path dependence has to be supplemented by an additional theoretical concept so far not discussed at sufficient length in the literature on corporate governance systems. The additional concept is complementarity. In section IV we then show that complementarity is crucial for understanding the dynamic properties of corporate governance systems[7] and that, if complementarity is recognized as a cause of path dependence, one can derive that increasing efficiency pressure may even lead to a convergence towards an *in*efficient system.

II. Two explanations of path dependence

In his earlier theoretical papers, Mark Roe has demonstrated that path dependence leads to observable results which are at odds with simple efficiency considerations. When he and Bebchuk & Roe contrast the outcomes of processes shaped by path dependence with those which one would expect under the sole influence of efficiency, they refer to a conventional notion of economic

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[6] See p. 27 of the working paper and p. 147 of the SLR version.

[7] More generally, complementarity is crucial for understanding the characteristics and the dynamic properties of entire legal systems, financial systems, and other similarly complex systems. For legal systems see Gerald Spindler, Recht und Konzern (Law and groups of companies) (Tübingen: J.C.B.Mohr 1993), and for financial systems see, for example, Giangiacomo Nardozzi, National Specificities and Current Tendencies in Financial Systems, in: Finance and the Enterprise 247, 258-259 (Vera Zamagni ed., London: Academic Press 1992), Guiseppe Conti, Alternative Financial Systems in Industrial Economies, 1970-1985, ibid, 207, 227, Andreas Hackethal/Marcel Tyrell, Complementarity and Financial Systems: A Theoretical Approach, Finance Working Paper No. 11, University of Frankfurt 1998, and Andreas Hackethal/Reinhard H. Schmidt, Finanzsystem und Komplementarität, forthcoming in the special issue of the German journal *Kredit und Kapital* on "Neue finanzielle Arrangements: Märkte im Umbruch" (New Financial Arrangements: Markets in the State of Transformation) . The fields in which complementarity has recently been recognized as important include corporate structures and strategies, see Paul Milgrom/John Roberts, The Economics of Modern Manufacturing: Technology, Strategy, and Organization, 80 (3) Am. Econ. Rev. 511 (1990), and Michael E. Porter, What is Strategy?, Harv. Bus. Rev. 74, 61-78 (Nov.-Dec. 1996).

efficiency,[8] which is essentially static and closely connected to the standard economic concept of equilibrium. The combination of efficiency and equilibrium underlies most discussions in economics in general and in the new institutional economics in particular.[9] Although the standard efficiency concept is static, it suggests that convergence from a given institutional arrangement to the most efficient - or simply "best" - one is to be expected; and in a perfect neo-classical setting, a generalization from a static to a dynamic, or multi-period, equilibrium is indeed straightforward. It would not change the qualitative results and would thus equally suggest convergence. Thus the conventional static concepts include what one might call an implicit view of institutional dynamics.

The concept of path dependence which is employed in the papers by Roe and Bebchuk & Roe is also based on the combination of efficiency and equilibrium. However, it adds two elements to the standard economic approach. One is that of "realistic" assumptions like those of bounded rationality and imperfect and incomplete markets. The second addition is institutional dynamics. Outside of a perfect neoclassical setting, dynamic issues pose genuine problems. An analysis including theses two elements leads to different conclusions than the standard static efficiency analysis. This suggests that one ought to take a closer look at the nature and the causes of path dependence. In the earlier work of Roe and in the joint paper by Bebchuk & Roe we see elements of two different interpretations of path dependence, which should, in our view, be carefully distinguished.

1. Path dependence as a consequence of switching costs

The central argument for path dependence goes like this: Factors determining efficiency change over time (wolves are no longer where they used to be, to use Roe's instructive example). Therefore a once efficient arrangement (the winding path which avoids the wolves' den) becomes "inefficient" from today's perspective. However, given that the possible efficiency or welfare gain brought about by changing an institutional arrangement (by building a straight road) may not be sufficient to cover the costs of adjustment, "society" might *rationally* keep the seemingly inefficient institutions (the winding road).[10] So in spite of the initial appearance, what we observe in reality may be efficient in a broader sense, namely with the adjustment or switching costs being taken into account. To this

[8] It is not exactly the concept of Pareto-efficiency, but does not differ significantly from this concept as amended by the Kaldor-Hicks-criterion. So one could simply replace the technical term “efficient” by the colloquial "better".

[9] As a source, see, for example, Eirik G. Furubotn/Rudolf Richter, Institutions and Economic Theory 458, 475 (Ann Arbor: Michigan University Press 1997), who discuss the efficiency and equilibrium concepts used in most of that literature.

[10] Cf. Roe, supra n. 109 Harv. L. Rev. 641, 643 (1996).

methodological rule Roe adds the empirical conjecture that apparent inefficiencies are frequent and important, and - or rather because - switching costs can be high and are probably higher than advocates of the conventional evolutionary argument implicit in American-style law and economics tend to believe.[11]

Note that in this standard account of path dependence there is nothing which prevents the reader from interpreting "society" as a *single* rational, efficiency-oriented decision making unit. Therefore, similar considerations also apply to the production technology employed in an owner-managed firm or the energy conservation devices used in a private home, which may appear inefficient today. Details of how the production plant or the home were originally built determine which improvements may have been advisable in the meantime and thus ultimately also how the plant or the home look today.[12]

Adjustment or switching costs are a fact of life, and there can be no doubt that they "matter". Roe's paradigmatic story of the winding path - and more so our story of the plant or the home owner - suggests that the notion of path dependence is quite simple and that the adjustment or transformation or switching costs which lead to path dependence are mainly a technological fact. We therefore call the first interpretation of path dependence the "switching cost story".

However, switching costs are not by definition technological in nature. There is a difference between the technical and the social aspects of institutional development, and the paradigmatic example of the path whose course depends on history tends to obscure this difference. A simple technology-based explanation of path dependence is not enough when the decision as to whether or not to switch from an existing institutional arrangement to a “better” one is not made by one single economic unit. In social or political processes, adjustment costs - and thus path dependence - are attributable to, among other things, sunk costs[13], entrenched property and decision rights of interest groups and network externalities.[14] All of these non-technical features are likely to impede efficiency-enhancing

[11] See Roberta Romano, The Genius of American Corporate Law (Washington: AEI Press 1993), as probably the most prominent proponent of the view which Roe criticizes.

[12] It is in the spirit of the economic paradigm to assume that, as rational decision makers who carefully compare the costs and benefits of making improvements, the owners have, over the course of time, undertaken all those improvements which appeared worthwhile to them at the time at which decisions concerning these improvements could have been made.

[13] Note that sunk costs may be the result of an intentional action, or a commitment device, designed and implemented in order to make future changes difficult.

[14] Network externalities are especially relevant in the case of common standards. Examples of technical standards like QWERTY, video cassette or computer software systems illustrate that markets do not seem able to leave a given path which was once chosen even if products prove to be technically suboptimal. The relevant literature discusses why this might be so; see Paul A. David, Clio and the Economics of QWERTY, 75 (2) Am. Econ. Rev.

changes.[15] Thus, whether an improvement in efficiency or aggregate welfare comes about or not depends crucially on the details of the relevant processes.[16]

2. Path dependence as a consequence of evolutionary myopia

Roe also offers a second concept or explanation of path dependence. This concept is based on recent developments in evolutionary biology.[17] The main proposition here is that the processes of evolution lead systems only to local optima. By definition, a local optimum may be different from a global optimum. As what constitutes the nearest, and seemingly most attractive, local optimum depends on the starting point at which a given biological or social system happens to be at a given point in time, and as the set of obtainable local optima changes over time, different systems can develop in different ways. Thus, the development of such a system is path dependent. All that is needed for the biologists' story to be convincing is the assumption of a certain degree of myopia on the part of the entities which are assumed to behave *as if* they made rational choices under external pressure. Note that evolutionary mechanisms which may lead to path dependence can be assumed to work even in the absence of all switching costs as long as switching costs are not defined in such a broad way that they include all consequences of myopia.

Another important element of the biologists' story is that, in the course of time, options which existed at some date, and may even have been "better" then, may disappear if they are not "chosen". This would certainly give rise to path dependence. As a consequence, social processes of evolution may lead to a situation in which the relevant social system only reaches a local optimum which is, or at least was at least at that time, not the global optimum. As Roe writes, "[m]odern evolutionary

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332 (1985), Stan J. Liebowitz/Steven E. Margolis, Network Externalities: An Uncommon Tragedy, 8 (2) J. Econ. Persp. 133 (1994) and Günter Knieps, Standards und die Grenzen der unsichtbaren Hand, 45 Jahrbuch für die Ordnung in Wirtschaft und Gesellschaft (ORDO) 51 (1994).

[15] They are discussed by Bebchuk & Roe, supra n. 1, on pp. 21-23 of the working paper and pp. 139-141 of the SLR version. [JEFF, PLEASE INSERT THE REFERENCE TO THE VOLUME WHICH YOU ARE EDITING, IF THAT SHOULD BE APPROPRIATE HERE IN LIEU OF THE REFERENCE TO THE SLR VERSION!!]

[16] At least on a theoretical level there are cases in which social decision processes are similar to single-person decision processes. One of these is when there is a system of complete and perfect markets; in this case all decision makers are unanimous as to what is the best social arrangement. Another case, which is addressed implicitly by Bebchuck & Roe, when they discuss "rules that destroy positional advantage" on p.28 of their working paper and p. 148 of the SLR version, is that of a powerful, but somewhat benevolent, dictatorship. The dictator does not (have to) discuss his decisions with others, and he can disregard existing property rights when he makes decisions based only on his assessment of *aggregate* welfare. In other cases, there is indeed a co-ordination problem for which a solution is not obvious.

[17] See Roe, supra n. 2, 109 Harv. L. Rev. 641, 643, 663 (1996) and the references provided there.

biologists use the metaphor of natural selection leading us to the top of a local hill."[18] We therefore call this second explanation of path dependence the "local hill story".

3. Comparing the two explanations

Even though the two alternative explanations of path dependence may not be mutually exclusive and even if one could be regarded as a special case of the other, we nevertheless think that it is important to distinguish between them as they shed light on different facts and therefore suggest different implications. This becomes most obvious when we look at an important corollary of path dependence. As mentioned before, Bebchuk & Roe claim that "(large) inefficiencies" limit (the) persistence of institutional arrangements which are no longer up to date.[19] We interpret this statement as saying that as long as the external pressure is not too strong, different institutional arrangements may coexist side by side even though they differ with respect to the efficiency with which they fulfil *the same* function. However, when the pressure becomes too strong, path dependence does not seem to count so much any more, and only the more efficient arrangement survives.[20]

Such a view would be plainly consistent with the "switching costs story" and is also in line with established views in economics: The more that can be gained from undertaking certain improvements and the more that would be lost by forgoing them, the more improvements will be undertaken by rational agents, be they individuals or "society" acting as if it were a single individual. Strong pressure will even force the decision makers to adopt the global optimum as switching to it offers the highest probability that the benefits of a change will outweigh the cost of adjustment. If more pressure leads to more improvement and if that pressure is applied equally to different systems, it ultimately also leads to more convergence, provided that the same institutional arrangement is perceived by all agents who make the decisions under consideration to be the global optimum.

In the light of the story inspired by evolutionary biology, this view is much less plausible. Here sudden outside pressure leads, in the first place, to reactions which appear to short-sighted decision

[18] See supra n. 2, 109 Harv. L. Rev. 641, 643 (1996).
[19] See supra n. 6.
[20] Bebchuk & Roe demonstrate these limits in the well-defined context of their economic model. There they refer to "(large) inefficiencies", and not to the strength of the pressure to achieve a gain in efficiency, as the reason for these limits. In the type of model which the authors present in their paper, the pressure is always implicitly assumed to be so strong that *any* gain in efficiency is exploited by the agents. Different degrees of this pressure would be extremely difficult to model; but this does not imply that such differences do not play an important role in reality as well as in the common intuitive understanding which experts may have about this aspect of reality.

makers[21] to offer the highest potential to solve the acute problem. Assume there is a firm which has various options to improve the efficiency of its operations, and that all of a sudden the intensity of competition increases; a "globalization shock" hits this firm. In order to survive, the firm needs to do "something", and needs to do it very quickly, in order to avoid a crisis. If the reaction has to be fast *and is myopic* it may lead the firm to a local optimum, which is not a global optimum. Attempts to leave the local optimum in order to attain - or more precisely: to search for - a global optimum may simply not be feasible if the firm does not have enough financial reserves to survive the losses which it will incur in the process of transition.[22] Thus the evolution of this firm will turn out to be path dependent.

What does this imply for convergence? If several such firms are hit by the "globalization shock", they will all attempt to improve their lot and undertake some efficiency-enhancing measures, each one using the option which offers the best *immediate* prospect. If they are in different starting positions when the event occurs, the different firms may end up at different local optima and might be stuck there. Convergence does not occur if the outside pressure *prevents* them from experimenting and perhaps finding the - common - global optimum. In fact, stronger outside pressure will *decrease* the likelihood that convergence will occur, because with very strong pressure the danger that temporary deviations from a local optimum would lead to losses and the eventual failure of a firm are greater. Not more, but less outside pressure would make it easier for the individual firms to "accidentally" move to the global optimum and thus to "converge".

There is one situation in which increasing outside pressure like a globalization shock leads to an observable result which appears indistinguishable from convergence. It is the case in which the outside pressure is so strong that all those firms which have attained a local optimum which is not at the same time a global one cannot survive, and in which there is only one global optimum. Then the survivors all look alike. However, we think that it is important to distinguish between seeming convergence based on elimination of most of the entities under consideration which *are* different, and true convergence in which entities adjust in such a way that they *become* (more) similar.

We do not want to speculate on whether the "switching costs story" is less useful and relevant than that of the "local hill" in general. In part our reservation vis-à-vis the explanation of path dependence as arising from the costs of making adjustments is due to the ad hoc character of the concept of

[21] Note the metaphorical character of theses sentences: In biological evolution, there are no "decision makers"; instead, some entities act in a way which we *interpret* as if it involved rational choices on their part.

switching costs. There is no general definition of what counts as adjustment or switching costs, and therefore almost anything can be explained by invoking suitably defined switching costs. However, it is a basic insight of the philosophy of science that concepts which can explain everything do in fact explain nothing. In this respect adjustment or switching costs are like transaction costs, which have for a long time played such a prominent role in the new institutional economics literature and have been seriously challenged on methodological grounds as being an "empty box".[23]

A different, and in our view more important, reason why we regard the competing explanation, namely that path dependence may be due to the short-sightedness of evolution, as more interesting and more relevant in the case of corporate governance systems, is that it yields different and more interesting implications for the central issue of the convergence of national corporate governance systems. However, in order for the "local hill story" to fully develop its heuristic potential, it needs to be enriched; the story, or more precisely the theoretical argument, needs more structure in order to be meaningful. It is our methodological proposition that the enrichment can be achieved by adding the concept of complementarity. We therefore now turn to presenting this concept.

III. Complementarity as an explanation for path dependence

1. Why complementarity is important

The Bebchuk & Roe paper is motivated by the puzzlement of the authors over the fact that economically very successful countries like the U.S., Britain, Germany and Japan have vastly different corporate governance and ownership systems.[24] This fact does indeed call for an explanation. If different corporate governance and ownership systems, such as the German and the American systems, were equally good for the countries and the firms operating under them, or if corporate governance systems were irrelevant for the success of firms and countries, there would not be a reason to be surprised by the fact that corporate governance systems differ as much as they do.[25] But one can rule out both of these explanations for the persistence of evident differences between corporate governance systems of economically equally successful countries as being highly

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[22] A well functioning capital market may make the transition possible by financing temporary losses.

[23] The classical critical quote is Stanley Fisher, Long-Term Contracting, Sticky Prices and Monetary Policy: A Comment, 3 J. Monetary Econ. 317, 322 (1977): "Transaction costs have a well-deserved bad name as a theoretical device ..... because there is a suspicion that almost anything can be rationalized by invoking suitably specified transaction costs."

[24] See Bebchuk & Roe, supra n. 1, pp. 1, 4 of the working paper and p. 129 of the SLR version.

[25] This puzzlement has been a main driver for the comparative corporate governance research by American law scholars for a long time; see Mark Roe, Comparative Corporate Governance (The New Palgrave Dictionary of Economics and the Law, Vol. 1, P. Newman, ed., London: Longman 1999), 339.

implausible. The fact that some countries hold on to strange and, as it seems, inefficient systems - in particular Germany with its mandatory codetermination - can only be explained with recourse to path dependence: Switching to a better system would cause costs which are too high in comparison to what could be gained by adopting that system; and in the past the pressure to improve corporate governance systems was not strong enough. The economic prowess of Germany and Japan has up to now allowed these countries the luxury of their "antiquated" systems.[26] With globalisation increasing the competitive pressure on all countries, one could feel inclined, following Bebchuk & Roe, to believe that this situation might come to an end at least in the medium term, if "efficiency limits persistence".

This may be right, and it may also be the case that the German system is simply not good after all. Be that as it may; but as long as Bebchuk & Roe are not more specific about what causes these countries' corporate governance systems to be so strongly path dependent, the simple statement that there is path dependence does not tell us enough. There is an element missing in their analysis, and this element is complementarity.

In our view, the case for the importance of path dependence could be strengthened considerably by giving much more weight to the concept of complementarity. In order to prepare our argument why we think that complementarity is indeed very important, we start by defining what we mean by complementarity, then demonstrate that complementarity is an important feature of national corporate governance systems. Next we indicate briefly what normative implications can be derived from taking complementarity into account more fully, and conclude with what we consider to be the most relevant positive implication of corporate governance: namely that it is not necessarily the more efficient corporate governance system which will survive in the end.

[26] Though he says so more implicitly than explicitly in earlier articles, Roe seems to believe that the Anglo-Saxon system is better than the German system; and even though such a premise is not implied in the joint paper with Bebchuk, nothing in the Bebchuk & Roe paper contradicts this assessment. See on this issue Mark Roe, German Codetermination and German Securities Markets, Col. Bus. L. Rev. 167 (1998), in which the author discusses the example of the German system of mandatory codetermination to demonstrate that path dependence is important and has, in his view, clearly negative welfare effects. In this assessment, Roe`s view is similar to those of many other authors with a common law background, cf. for example Romano, supra n. 11, p. 133, and Bernard Black/Reinier Kraakman, A self-enforcing model of corporate law, 109 Harv. L. Rev. 1911, 1974 (1996). Interestingly enough, this firm conviction has shifted remarkably since the eighties when Japanese keiretsus and other insider-control systems were en vogue in the U.S. and the economic performance of Japan seemed to be better than that of the U.S. Later in this paper, we will comment briefly on why we consider Roe's assessment of the German system of codetermination to be overly negative, see n. 36 below.

2. What is complementarity?

Complementarity is an attribute of elements of a given system, and consistency is the corresponding attribute of entire systems. Elements of a system are complementary (to each other) if they "fit together", i.e. mutually increase their "benefit" in terms of whatever the objective function or the standard for evaluating the system may be, and/or mutually reduce their disadvantages or "costs". Although the concepts of complementarity and consistency are quite intuitive, as they come close to what is implied when we talk informally about something being "really a system", and a standard tool of microeconomic analysis, a brief and very simple formal representation may be helpful for the ensuing discussion.[27]

Let a system consist of four elements a, b, c and d. Each one of theses elements can take on two values such as a_1 and a_2. Also assume that there is a measure which permits a pairwise ordering of systems as being "better" or "not better". Now let there be two systems S_1 and S_2 that each constitute a local optima with S_1 being composed of the choices a_1, b_1, c_1 and d_1, and S_2 of the choices a_2, b_2, c_2 and d_2, and two systems S_{1^*} and S_{2^*} (each with an asterisk to indicate their respective analogues) in which only the value taken on by one element, the element a, has been exchanged. We call the elements a, b, c, d complementary to each other if the following relationships hold for the element a (and similarly for the elements b, c and d):

$S_1(a_1, b_1, c_1, d_1)$ is better than $S_{1^*}(a_2, b_1, c_1, d_1)$

$S_2(a_2, b_2, c_2, d_2)$ is better than $S_{2^*}(a_1, b_2, c_2, d_2)$

even though, according to widely held opinion,[28] considered in isolation

a_2 is regarded as being better than a_1

and *irrespective of* whether

$S_1(a_1, b_1, c_1, d_1)$ is better than $S_2(a_2, b_2, c_2, d_2)$.[29]

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[27] More complex formalizations can be found in, for example, Paul Milgrom/John Roberts, Economics, Organization and Management, pp. 191-199 (Englewood Cliffs, N.J.: Prentice Hall 1992), id., Complementarities and Fit: Strategy, Structure, and Organizational Change in Manufacturing, 19 J. of Accounting and Econ. 179 (1995), and Hackethal/Schmidt, supra n. 7.

[28] The ranking of the choices for the elements considered in isolation does not make sense in a decision-theoretic framework as these choices need to be evaluated in the context of the system to which they belong. Therefore the statement about the ranking can only be a behavioral statement about how elements are generally, e.g. by the relevant group of practitioners, perceived or assessed.

[29] The above conditions are only necessary conditions. A sufficient condition for complementarity is that simultaneously increasing the value of any two or more variables (elements) of a system must *at least* yield the same efficiency gain as the sum of incremental gains from increasing each variable alone.

Correspondingly, we call S_1 and S_2 consistent systems and S_{1*} and S_{2*} inconsistent systems. Intuitively speaking, in comparison to S_{1*} and S_{2*} the systems S_1 and S_2 are better *because* the values of the complementary elements have a better fit. In a situation like the one described by the four relationships, what matters more is the consistency of the systems, i.e. the differences in value between S_{1*} and S_1 (and S_{2*} and S_2) rather than the "values" of the individual elements of which they are composed, and it matters even more than the values of the consistent systems (the absolute difference in value between S_1 and S_2) themselves. As an empirical conjecture we would like to add that situations in which complementarity/consistency are more important, than even the "values" of the entire systems are more frequent in social life than is commonly assumed by economists and scholars from related disciplines.

We provide a further illustration because it may make the relationship between complementarity and path dependence easier to understand. If the system under consideration is physical production with one output and two factors of production, than we call the factors complementary if the *marginal* productivity of each factor increases *at an increasing rate* with the amount to which the other factor is used. Note that in this case the output surface looks different from that of the standard production-theoretic model in which marginal productivity of one factor decreases with increasing use of the other factor. In the three-dimensional graphical representation of the standard model of production, output can be represented as a mountain leveling off at its sides, whereas in the case of complementarity the output surface looks like a valley in a mountainous region or like a mountainous region with more than one hill. Any substantial "improvement" in output is tantamount to walking up the mountain slope on one side of the valley in which the hiker happens to be when she starts her climb. A short-sighted hiker would strive for height (efficiency gains) by climbing up that side of the valley on which she happened to be or which appeared steeper to her. This would constitute myopic behavior, which might well lead her to a hill top which is not the highest peak in the entire area, i.e. she might wander towards a local maximum.

3. Complementarity and path dependence

Complementarity and path dependence are closely connected concepts as complementarity leads directly to path dependence as a dynamic property of systems. By definition, there is no way to reach a higher peak without going down from a local peak. Thus, striving for *immediate* gains in height is very likely to make a hiker's stroll a path dependent one: It matters where she started to climb up and where she reaches a (local) maximum.

We claim, and by using the formalization from above wish to illustrate, that consistent systems change differently from entities which are not systems by our definition,[30] because in real life the change in a system is typically initiated by altering just one of several elements.

Assume for the moment that system S_2 is perceived by some observers to be better than system S_1 and that, possibly because of this, some external influence leads to the replacement of the seemingly "worse" element a_1 by the "better" element a_2 in what was initially the consistent system S_1. The resulting system is S_{1*} which is by definition inconsistent. As inconsistency means that the system is not "good" and in fact strictly inferior in efficiency or aggregate welfare terms to the corresponding consistent system (S_1) there will be pressure for more efficiency gain and adjustment. One possible adjustment would consist in the modification of the other elements b, c and d such that the entire system S_1 is ultimately replaced by the presumed better system S_2. The other possible adjustment is one which reflected the system's attempt to increase efficiency *immediately* or "myopically", and this can be achieved by simply restoring consistency. A fast efficiency-increasing move would consist in reversing the original move from a_1 to a_2 - and thus in a return from S_{1*} to S_1. In certain applications, and in particular in a situation in which it would be important to quickly achieve some efficiency gain, the second form of adjustment is more likely. This is why systems under strong pressure are likely to be "trapped" in a local optimum like the consistent system S_1 in much the same way as the second explanation for path dependence discussed above suggests for the case of biological evolution and in the same way that Bebchuk & Roe analyze in their paper.

IV. Complementarity and Corporate Governance

1. Consistent corporate governance systems

National corporate governance systems that are at least somewhat functional must be consistent or, in other words, must be composed of complementary elements which fit together – or constitute a consistent system - in the sense just defined. A governance system can be described by listing its (important) elements and indicating which values these elements take on. The list of important elements includes

- the distribution of ownership and decision rights (concentrated or dispersed)
- the financial structure of corporations (more or less leverage, among other aspects)

[30] The limiting case would be the simultaneous change of the values of all elements and thus of the system itself. In this case the systemic property is ruled out as irrelevant for ranking purposes and the system is just a normal

- the board structure (unitary or dual board system)
- capital requirements (mandatory or not; strict or liberal)
- the general structure of corporate law (mandatory or enabling)
- the quality of accounting information from a shareholders' perspective (transparent or opaque)
- access to capital markets (easy or difficult; general or restricted)
- the nature of stock market regulation (strict or not so strict) including insider trading regulation and the possibility of unfriendly takeovers (possible or impossible; easy or difficult)
- the dominant career paths in firms (predominantly internal or more open to outsiders)
- the role of employees in corporate decision making (existing or not; mandatory or not),

and many others. Evidently, not all conceivable values for these individual elements would fit together and generate a workable corporate governance system and also an efficient organizational structure.[31] The distinction between the Anglo-Saxon "outsider control system" and the German-Japanese "insider control system" introduced by Franks and Mayer aptly reflects our notion of complementarity or of a genuine, consistent system. The two prototypical systems are very specific combinations of the values of a given set of "important" elements of corporate governance systems.[32]

In the Anglo-Saxon outsider control system, the market for corporate control plays the central role, while internal control mechanisms are of only secondary importance. In order for such a system to function, it must be assumed that all shareholders are (almost) equally well informed,[33] that very strict insider trading prohibitions and duties of loyalty prevent the abuse of any informational advantage which might still exist; and that managers have the single duty of maximizing the value of the firm for its current shareholders, which in turn presupposes dispersed ownership and well-developed capital markets. Such a system is consistent and the principles on which it rests are relatively simple. Further complementary elements include the absence of any form of codetermination and bank-lender relationships which are at arm's length.

"thing" like any other.

[31] See the discussion of complementarity as a prerequisite for successful business systems in Milgrom/Roberts, supra n. 7 and n. 27, Economics, Organization and Management, pp. 108-110.

[32] See Julian Franks/Colin Mayer, Ownership and Control, in: Trends in Business Organization: Do Participation and Cooperation Increase Competitiveness? 171 (Horst Siebert ed., Tübingen: J.C.B.Mohr 1995), and the comparison of different classifications in Erik Berglöf, Reforming Corporate Governance: Redirecting the European Agenda, 24 Econ. Policy 91 (April 1997) and id., A note on the typology of financial systems, in: Comparative Corporate Governance: Essays and Materials 151 (Klaus J. Hopt/Eddy Wymeersch eds., Berlin/New York: de Gruyter 1997). The classification by Franks/Mayer is further refined in Hackethal/Schmidt, supra n. 7.

[33] The fear that she might be informationally disadvantaged can prevent a shareholder from accepting a seemingly attractive tender offer, and thus undermine the functioning of the takeover mechanism.

As its name rightly suggests, in an "insider control system" the internal mechanisms for monitoring the management, such as the supervisory board, must function. This has the inevitable consequence that some people are better informed than others, and it requires that they have opportunities to benefit from their monitoring of management activity because otherwise they would hardly be prepared to invest the effort required to act as monitors of the management.[34] On the other hand, the potentially well informed monitors should not be in a position to abuse their informational advantages. So there must be mutual monitoring of the well-informed "inside" monitors of management, as can in principle be achieved if the boards of corporations are composed of people who represent powerful groups of stakeholders. Such a composition of the supervisory board makes a large company a coalition of stakeholder groups. As in this system the supervisory board is as well the arena for co-operation with respect to the function of monitoring the management as that for conflict with respect to the specific interests of the different stakeholder groups, it is imperative that its functions be clearly separated from those of the management board. The insider control system cannot function without a *de jure* or *de facto* two-tier board structure. Given the composition of the supervisory board and its role vis-à-vis the management, it is also evident that *exclusive* reliance on shareholder value as the corporate objective and as the yardstick for the performance of management can also not be part of this system.[35]

If banks play a strong role in the governance of companies, an insider system tends to function better. The same holds in principle if there is a well-conceived system of employee representation, be it mandatory or not. There even is a certain coincidence of interests between banks as lenders and employees. Both benefit from a stable and safe development of the company in question, and a supervisory board whose function is neatly separated from that of the management board provides a

[34] Arguing from an economic perspective, one could say that there must be a reward for the monitoring effort. This reward can come from using information. From a formalistic legal perspective this seems highly questionable. Members of a supervisory board are not allowed to use the information which they gain from serving on a board; see, for the case of Germany, Marcus Lutter, Information und Vertraulichkeit im Aufsichtsrat (Information and confidentiality in the supervisory board) (2nd ed., Köln: Carl Heymann 1984). However, there seems to be a gap between theory and practice or, in other words, a blurred legal distinction between the use and the abuse of information instead of a strict prohibition of any use whatsoever.

[35] On the different roles and interpretations of the concept of shareholder value in the insider and outsider systems from an economic and legal perspective, cf. Reinhard H. Schmidt/Gerald Spindler, Shareholder-Value zwischen Ökonomie und Recht (shareholder value regarded from an economic and a legal perspective), in: Wirtschafts- und Medienrecht in der offenen Demokratie 515, 528, 534 (H.-D. Assmann et al. eds., Heidelberg: C.F.Müller 1997), and, as an English summary of the main economic argument, Reinhard H.Schmidt, Corporate Governance: The Role of Other Constituencies, in: Corporate Governance: Les Perspectives Internationales, 61 (A. Pezard/J.-M. Thiveaud, eds., Paris: Montchrétien 1997).

suitable framework in which banks and employee representatives can provide their input into the governance system.[36]

On the other hand, the role of the stock market in its dual capacity as a source of performance measures and as a market for corporate control must not be too strong if the coalition of strong stakeholders is to be able to function. An insider system is consistent. However, it is certainly not one whose functioning is assured easily. With a restricted role of the stock market and the maximization of total value[37] as an objective which is inherently fuzzy and not operational and therefore leaves too much discretion for the management, the main problem of the insider system is that of finding a sound balance between co-operation and conflict among the different stakeholder groups so that their coalition can and does effectively monitor the management.

The prototypical outsider and insider control systems, which bear close resemblance to the British and American systems and the German and Japanese systems respectively, as they existed some

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[36] Their joint influence is likely to lead to a situation in which the interests of shareholders are not taken care of to a great extent. We would like to acknowledge that Roe, supra n. 26, is perfectly right in calling the German system of (mandatory) codetermination a very good example of path dependency due to complementarity in the sense of elements of a system being mutually dependent on one another. However, the more encompassing system in question with which codetermination is largely compatible is a very complex one, including as additional elements not only the stock markets which Roe discusses in this context, but also labor law and company law, social mechanisms and traditions of conflict resolution, the structure of the legal system, the pension system, and many more. In so far as codetermination fits into this overall German social, political, economic and legal environment it may also have certain efficiency properties: If the other elements were different from what they are in Germany, codetermination might be less attractive in economic terms. (Note that it does not make sense to assess one element of a genuine system in isolation.) Finally we also fully concur with Roe's assessment that the mere existence and in particular the mandatory nature of German codetermination tends to make an overall change of the German corporate governance system very difficult.
However, all of this does not in itself support the assessment in Roe, supra n. 26, that the German corporate governance system of insider control, with which codetermination seems to be compatible at least in principle, is also a "bad" system. We do not have the space to argue why codetermination might *appear* quite efficient in a time in which firm-specific human capital is becoming more and more important (but see Bertelsmann-Stiftung und Hans-Böckler-Stiftung (eds.), Mitbestimmung und neue Unternehmenskulturen – Bilanz und Perspektiven (Codetermination and new corporate cultures – a stock-taking and a perspective) (Gütersloh: Bertelsmann Stiftung 1998), pp. 28, 71, on this aspect). There are also empirical arguments to the effect that the economic merits of some elements of codetermination are more widely accepted today than in the past. Several large European companies have recently agreed to the introduction of "European workers' councils" in countries in which codetermination is not required by law; see for example Roger Blanpain/Paul Windey, European Works Councils, 2. ed. 1994, Brian Bercusson, Die Vertretung der Arbeitnehmer im Konzern nach britischem Recht (Labor representation in groups of companies according to British law), 9 Zeitschrift für Internationales und Ausländisches Arbeits- und Sozialrecht 490 (1995) and Peter Mozet, Vereinbarungen über Europäische Betriebsräte (Agreements concerning European works councils), 50 Der Betrieb 477 (1997).
In spite of our statement that codetermination is compatible with the German insider control system, we would not want to claim that German-style mandatory codetermination is a necessary element of any workable insider control system, or that the institutional design of codetermination could not be improved in such a way that it better supported the working of corporate governance in Germany.

[37] Cf. Margaret Blair, Ownership and Control: Rethinking Corporate Governance for the 21st Century, 275ff (Washington: Brookings 1995), and Schmidt/Spindler, supra n. 35, at 533.

years ago,[38] do not merely demonstrate the meaning and the importance of the terms and the concepts of complementarity and consistency. Their juxtaposition and the demonstration that their respective elements need to be complementary also have important normative and positive implications to which we turn now.

2. Normative implications of complementarity

The essential normative implication of the preceding discussion is straightforward in principle, though not in practice. Given functional complementarity between the elements and the need for systemic coherence, it would probably not make too much sense to mix the outsider and insider control systems and to combine those elements which appear to be particularly valuable in each of the two systems in order to create the "overall optimum". Using the formal representation introduced above, it would amount to making a change from the consistent systems S_1 and S_2 to some inconsistent systems like S_{1*} and S_{2*}. A "middle of the road" model of corporate governance is not likely to be viable and can, therefore, not be recommended from an economic perspective.

The context of European integration, which also addresses the possible harmonization of corporate governance systems, provides an example. It would not necessarily improve the British corporate governance system if "important" elements were introduced into it which observers, regulators or legislators find useful in the German system, and vice versa. Instead of obtaining "the best of both worlds" these presumed improvements might only lead to an inconsistent and dysfunctional mixture. Certain tendencies that are observable in Europe as it becomes more and more unified can be interpreted as examples of precisely this attempt to combine elements of what is considered to be good corporate governance in one system with elements of the other in an indiscriminate manner and without regard for the requirements of consistency.[39] In Britain, elements of an insider control system are being pushed these days, based on the findings of the Cadbury commission and on a general reappraisal of the role which institutional investors can – and, according to some observers, should -

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[38] For an elaboration of the systemic properties and empirical evidence that the "neat" correspondence between theoretical and empirical corporate governance systems is currently giving way to a much less clear-cut situation, see Peter Knobling, Die Interdependenz von Unternehmensverfassung und Unternehmensfinanzierung bei börsennotierten Aktiengesellschaften (the interdependence between corporate governance and corporate financing in the case of listed corporations), chap. 5 (PhD dissertation, University of Frankfurt 1996).

[39] References can be found in Berglöff, supra n. 32, 24 Econ. Policy 91, 93 (April 1997), and in Bebchuk & Roe, supra n. 1, note 8.

play in the governance of British companies.[40] In Germany, there have been recent legislative efforts to foster the role of capital markets[41] and strong public pronouncements to the effect that it is time to adopt a strict shareholder value orientation as the governing principle of publicly held large German corporations.[42] Many of these measures entail the danger that the basis on which the British system used to rest, and that which used to underpin the German system, will no longer be solid in the future. To our knowledge, in both countries the consistency of the respective system has never even been addressed in the policy deliberations as an aspect which should be taken into account.[43]

However, we should mention a risk inherent in overstating our case for consistency or systemic purity. To do so might serve to impede reforms which are useful even if they are not strictly compatible with the basic structure of the respective systems. We would not rule out the possibility that several of the newly introduced measures in the U.K., where the role of outside directors has recently been strengthened, and the belated *legal* prohibition of insider trading in Germany constitute improvements in spite of their tendency to compromise the consistency of the outsider and insider control systems, respectively. We must admit in all frankness that we do not know how a balance between these two effects – reduction of systemic coherence versus general improvement irrespective of the system's structure - should be struck.

3. Positive implications: complementarity and "non-convergence"

What does complementarity imply for the possible convergence of real corporate governance systems? Conventional wisdom in the law and economics community would have it that a vaguely described process of competition among systems leads to the result that the best corporate governance system will be uniformly applied, in much the same way as competition in the market for

[40] Cf. Jonathan Charkham, Keeping Good Company: A Comparison of Corporate Governance in Five Countries 342 (Oxford: Oxford University Press 1994), based, among others, on the (British) Report of the Commission of the Financial Aspects of Corporate Governance (Cadbury Report) .

[41] The example which come to our minds here are the changes which have been introduced recently in Germany by the "law for improving control and transparency in the economy" (KonTraG) and the Law to facilitate the raising of capital (Kapitalaufnahmeerleichterungsgesetz) Clearly, the overall thrust of this legislation is inspired by a market-oriented philosophy. Cf. the motives of the German Federal Government for the draft, 17 Zeitschrift für Wirtschaftsrecht (ZIP) 2129 (1996), which are evidently not consistent with the model of German corporate governance, and more generally of the German financial and economic system.

[42] See Manager-Magazin 4/1996, 146 (152); a criticism of some of the argument which are advanced to support these pleas can be found in Reinhard H. Schmidt/Jens Massmann: Drei Mißverständniss zum Thema 'Shareholder Value' (Three misunderstandings relating to the concept of shareholder value), 125 Unternehmensethik und die Transformation des Wettbewerbs (B. Kumar et al. eds. Stuttgart: Schäffer-Poeschel 1999).

[43] Raising such concerns is a role which academic research can have vis-à-vis the political process. This shows that Roe's skepticism (supra n. 2, 109 Harv. L. Rev. 641, 667 (1996)) that the concept of path dependence does not lead to policy recommendations goes too far. Though it may not yield "direct policy prescription(s)", it does lead

steel will advance the best steel-making technology and ultimately lead to its universal adoption because some will adopt it and others who do not will be driven out of the market.[44] We share the skepticism of Bebchuk & Roe concerning this view with respect to corporate governance systems. It leaves too many questions unanswered: What is the best governance system? How could a possible process of change occur? Who are the relevant actors in this process, and what drives their agendas? If we wish to answer these questions, we must look at the details of change processes.

There can be no doubt that there is at present a growing pressure on firms and nations to improve economic efficiency, among other things by introducing the "best" corporate governance system. However, it is difficult to imagine how this "introduction" could be effected at all. Improvements are easier to introduce - and might then lead to convergence - if this can be done step by step, or when the improvement is limited and well defined in terms of what it entails, or when there are examples of successful innovators, and when a strong case can be made for the change under consideration. None of these conditions is fulfilled in the case of a corporate governance system. Let us discuss these conditions one after the other.

1. Proceeding step by step is the same as changing a given system by altering one *element* at a time in order to arrive at the (presumed) better system. By definition, complementarity implies that partial changes with respect to individual elements do not result in an improvement if the starting situation is a local optimum. In practice this could mean that a given new legal device or a non-standard corporate governance practice is not accepted by the relevant legal and business communities. The innovation might be discontinued or abolished again or simply fall into oblivion. Changes must therefore relate to at least a "critical mass" of elements of a corporate governance system, and this is more difficult to implement.

2. The type of corporate governance that an individual *corporation* in a given country can use successfully strongly depends on the corporate governance system which prevails in that country. This has two reasons. One is that lenders, clients, potential and current employees and others will prefer to deal with a company which does not differ in a fundamental way from other companies with which they are acquainted, and courts tend to apply the rules and interpretations to which they are accustomed. Frustrating these entrenched expectations of others would create important

to practically useful advice insofar as it helps to identify consistency as a decisive factor in determining the success of policy measures.

legal and commercial risks for an innovator in the field of corporate governance. Thus, there is complementarity between the governance systems of the different corporations within a country.

In most of Europe there is a second reason why it is, or at least was until very recent ruling of the European Supreme Court,[45]almost impossible for an individual corporation to opt for a different corporate governance system which might appear more attractive. In contrast to the American situation,[46] European business corporations cannot, or perhaps could not, choose the jurisdiction and with it elements of their corporate governance system by merely changing the location of incorporation[47]. The applicable law is, by and large, the law of the place in which they do most of their business (the headquarter's site). Therefore at least in Europe the switching of jurisdictions by corporations does not constitute a mechanism which could lead to a convergence towards the (presumed) best corporate governance system.

3. Even though corporate governance *systems* can easily be *defined* at the theoretical level, in practice it is anything but clear where the limits of a corporate governance system must be drawn and which other elements of an economic and legal system would have to change together with the core elements of a corporate governance system if the goal were to make fundamental alterations to the existing governance system. There is complementarity between the different elements of an economic, social and legal system in which governance is embedded. A certain system of corporate governance is not a module which can simply be plugged into any economy

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[44] See the references in Bebchuk & Roe, supra n. 1, pp. 2,.and the sources in supra n. 4. See also Viktor Vanberg/Wolfgang Kerber, Institutional Competition Among Jurisdictions, An Evolutionary Approach, 5 Constitutional Political Economy 193 (1994) for a discussion of the mechanisms of convergence.

[45] EuGH 9.3.1999 Rs. G212/97 Hojesteret / Centros, 20 Zeitschrift für Wirtschaftsrecht (ZIP) 1999, 438. The decision is discussed, among others, by Herbert Roth, Gründungstheorie: Ist der Damm gebrochen? (Is the doctrine of registration [JEFF: GERALD DID NOT KNOW A GOOD TRANSLATION OF THE LEGAL TERM "GRÜNDUNGSTHEORIE, i e THE DOCTRINE THAT A CORPORATION CAN FREELY CHOOSE WHERE IT WATS TO BE REGISTERED; E G IN DELAWARE) already accepted?), ZIP 1999, 861; Otto Sandrock, Centros: Ein Etappensieg für die Überlagerungstheorie (An interim victory for the doctrine of registration [JEFF, PLEASE INSERT THE TERM WHICH YOU MAY HAVE FOUND FOR "GRÜNDUNGSTHEORIE"], Betriebsberater 1999, 1337; and Werner Ebke, Das Schicksal der Sitztheorie nach dem Centros-Urteil des EuGH, (The fate of the doctrine of location), Juristenzeitung 1999, 656.

[46] Cf. William J. Carney, The Political Economy of Competition for Corporate Charters, 26 J. Leg. Stud. 303, 315 et seq. (1997); David Charny, Competition among Jurisdictions in Formulating Corporate Law Rules, 32 Harv. Int. L. J. 423, 428 (1991); brief summary in Romano, supra n. 11, p. 132.

[47] For Germany, see the ruling of the Supreme Court: Entscheidungen des Bundesgerichtshofes in Zivilsachen (BGHZ) 97, 269 (271) (F.R.G.); Bernhard Grossfeld, in: Staudinger, Internationales Gesellschaftsrecht (International Law of Coporations) (13th ed., Berlin: de Gruyter 1998), Rn. 22ff., 33ff.; Carsten Thomas Ebenroth, in: Münchener Kommentar (2nd ed., München: C.H. Beck 1990), following Art. 10 EGBGB Rn. 139 et seq., 177 et seq.; Daniel Zimmer, Internationales Gesellschaftsrecht 213 (Heidelberg: Verlag Recht und Wirtschaft 1996).

and society. Therefore, it is very difficult to imagine that a sweeping, overall replacement of one corporate governance system by another could happen in reality.[48]

4. The viability of a given *national* corporate governance system may depend on whether this system is (relatively) isolated from others. The following situation is conceivable and in our view also likely: One system, say S_1, would be viable and unambiguously better than other systems if there were only one system which everybody had to live with, while if more than one system coexisted at least for a certain time, S_1 would not be viable any more. It is so far not clear whether the prototypical corporate governance systems described briefly above, and in particular the insider control system, are immune to this effect of "interpenetration", which globalization has already created.[49] Therefore, if there should be convergence at all, it might be a convergence towards a corporate governance system which is not the "overall optimum" or, in economic terms, towards an inefficient equilibrium, even if the standards for assessing corporate governance systems were considered as a given.

5. Last but not least, and in part as a consequence of the other factors mentioned above, there is certainly not a general consensus as to what would be the best corporate governance system, let lone one which everybody would want to see universally adopted. The difficulty of determining the best corporate governance *system* is, again, due to the complementarity of the elements: Because of this feature, it would not be sufficient to "add up" the qualities of the elements of conceivable systems, whose individual assessment would in itself be a formidable task for any decision maker.

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[48] In this context it is important to understand how closely German corporate law, and thus also the legal basis of many elements of German corporate governance, is connected with tax law. Both the tax-paying corporations and the tax-collecting authorities would start a militant campaign against any change which endangered their financial interests. The specifically German concept of groups of companies and the way they are treated by law ("Konzernrecht") are essentially an outgrowth of tax considerations, for a brief outline cf. Spindler, supra n. 7, p. 7. At the same time it is one of the foundations of the distribution of power between the two boards in German corporations. The "Konzernrecht" gives so much power to the management that this requires a strong supervisory board as a counterweight. Given the tax-induced interests, it is almost inconceivable that focussed corporate governance reform efforts would be able to alter essential structures. One interesting example is the ongoing debate on the relationship between principles of accounting and principles of corporate taxation: As the present German system of taxation is based on the profit determined by the system of financial accounting, the tax burden of German corporations would rise considerably if the current trend to adopt US-GAAP for reporting purposes were to be extended to accounting for tax purposes. This would lead to much higher levels of profits and thus possibly also taxation, because it would imply the demise of some old German accounting principles like “Niederstwertprinzip” (principle of valuing assets at the lower of cost or market).

[49] As we will argue below, there are indeed reasons to expect that the overlapping of systems poses a greater threat to the viability of an insider control system than to that of an outsider control system.

These five arguments suggest a dilemma: It does not appear to be likely that individual innovators and national politicians could bring about a change of corporate governance systems which would ultimately lead to a convergence to the best system. Any substantive change would have to be a very comprehensive one. Thus supranational "governments" might have a role to play here. However, there is simply no supranational political authority or other entity which would have the knowledge and the power to impose, in several countries at the same time, what it might consider to be the universally best corporate governance system.[50] This leads us to the *negative* result that a simplistic story of the competition and convergence of corporate governance systems cannot be valid.

4. A different scenario: convergence towards an inefficient system

The arguments presented above are not meant to suggest that actions of individual innovators, national politicians and even supranational entities and the "interpenetration" of different corporate governance systems have no effect on the corporate governance systems in the various countries. And even though there is probably neither a consensus nor incontrovertible evidence on what constitutes the best corporate governance system, not all conceivable systems are equally good, and almost everybody is at least to a certain extent interested in not having a corporate governance system for his firm or country, which is simply too bad. In fact, we believe that these very factors work together in what we consider to be an alternative scenario for the development of corporate governance systems - a scenario which can also lead to "inefficient convergence", and which might even be a realistic scenario for the development in the unifying Europe.

In order to present our alternative account, we need to recall the above presentation of the (Anglo-Saxon) system of outsider control and the (German-Japanese) system of insider control. Let us assume that these two are the only systems which countries could adopt. It is not obvious that one of them is superior in terms of its economic efficiency under *normal* and stable circumstances; and we certainly do not claim to know this either. But for the sake of making our point, let us *assume* that the (German-Japanese) insider control system is superior.

[50] This statement may turn out to be wrong in the near future, as major stock exchanges are currently involved in the formation of a "world-wide cartel" or at least a narrow oligopoly. By formulating listing requirements which pertain to aspects of corporate governance, such as the existence of independent audit and compensation committees composed of outside board members, the "cartel of stock exchanges" might come close to acting like a "world government", and it might be a knowledgeable one at that, cf. Spindler, Deregulierung des Aktienrechts? (Deregulation in corporate law?), 43 Die Aktiengesellschaft 53, 67 (1998). However, even if this were to happen soon, there would still be the question whether this would merely constitute rule convergence or also systems convergence in the sense of the distinction introduced by Bebchuk & Roe.

The two systems function according to different principles. More specifically, they make use of implicit contracts, mutually consistent expectations, etc., to a different extent. The outsider control system is parsimonious in this respect. Its functioning hardly depends on agents anticipating correctly what other agents will do and what they will in turn expect other agents to do and to expect. A functioning outsider control system could be modeled as an equilibrium in a relatively simple game.

The insider control model is fundamentally different. It requires much more in terms of mutually consistent expectations. The proper functioning of this system involves a great number of people with different roles - managers, bankers, labor representatives and (other) board members - and different backgrounds. For a corporate governance system like the German one to benefit both the firms and the public, all kinds of explicit and implicit deals among several stakeholder groups have to be made. In order to do this, the different parties need to learn what to expect from each other and to trust each other, and to carefully balance co-operation and confrontation; and this learning process in turn requires time and stability. The greater the number of people who are actively involved in a system, the harder it is to stabilize the system; and, due to the high costs of building up and maintaining the degree of mutual trust which is required for implicit contracts, the more markets tend to be global, the more difficult it is to keep an insider controlled system functioning

This has implications for the convergence issue. Today we are in a situation of global competition and regulatory changes of all kinds and other corporate governance-related innovations coming from various sources. These developments are having destabilizing effects on both systems. But these effects are not equally important in both systems. Because of its greater reliance on mutually consistent and stable expectations, trust and implicit contracts, the German system is probably affected to a greater degree, and is also probably being destabilized to a greater extent.[51]

Now assume that the process of destabilizing existing national corporate governance systems goes on for some time and even intensifies universally, i.e. both in countries that use the insider control system and in countries that use the outsider control system. At some point there might even be a general corporate governance crisis. By a "crisis" we mean a situation in which essentially all or most governance mechanisms fail to function. For example, attempts to introduce hostile takeovers into an insider control system could lead to so much controversy within supervisory boards that they cease to be able to monitor the management; or real shareholder activism in accordance with the German model could, in the outsider control system, create wide-spread suspicion that there are strong informational asymmetries, which would reduce the liquidity of the stock market, reduce its informational efficiency and undermine the functioning of the market for corporate control.

As such a "crisis" would reduce overall economic efficiency, there would be a strong pressure from many sides to restore some kind of order *immediately* and at least on a national level. In such a case, firms and national authorities in all affected countries would have to settle for some "workable" national corporate governance system as any *consistent* system is better than an inconsistent system or, to use the colloquial notion of a "system", better than no system at all. Assume that the changes which have been brought into the systems have gone so far that the "natural" tendency to go back to the former system is not strong any more because it would also be difficult to restore the old equilibrium situation. Thus despite the crisis, and even more so in the case of a crisis, the fundamental choices continue to be the outsider and the insider control systems.[52] It is impossible to make precise statements about what the process which would eventually lead to a workable system could look like. But under the circumstances which we assume here, the idea of a deliberate process of making a well-informed choice of the most efficient corporate governance system does not appear appropriate. Instead, this process is likely to be a rather chaotic one, and it would in all likelihood be myopic. That is, it would probably rather have the attributes of the processes assumed in evolutionary biology than those in standard economic theory.

However, what is even more important is this: In a crisis, i.e. a situation in which there are reasons and public pressure to do "something", and to do it fast, the criteria for determining the "winner" in the ensuing competition between corporate governance systems will be different from those which, hopefully, apply under normal circumstances. The system for which firms and authorities in their respective roles would probably settle in all countries would most likely not be the one with the most desirable economic consequences under *normal and stable* conditions, but rather the one with the most attractive features in the crisis situation.[53] In such a situation stable expectations are no longer

[51] For instance, the attempt by Krupp to stage a hostile takeover of Thyssen in 1997 has made it seem possible that Anglo-Saxon-style hostile takeovers might upset all implicit contracts like those which help define the role of representatives of large banks on the supervisory boards of German corporations.

[52] As explained above, middle-of-the-road systems would not qualify as contenders because they lack consistency and are thus also not likely to be economically viable. This is also true in a crisis situation.

[53] "What persists is what is best adapted to persist during the crisis" (Roe, supra n. 2, 109 Harv. L. Rev. 641, 663 (1996). That the quality of being crisis-proof is simply different from efficiency under stable conditions can be directly inferred from a standard example in evolutionary biology. Bacteria with very simple structures are probably the species most likely to survive all crises, however great external shocks might be. Nevertheless, bacteria would probably not qualify as the culmination of evolution.

justified, trust is not appropriate, and implicit contracts are not likely to be honored. Therefore, the best system would be one which relies least on these elements. Among the two prototypes of corporate governance systems, some variant of the outsider system would be the best choice in this situation. In particular, it would be very difficult to even imagine a return to the old German system after expectations have been frustrated at a large scale, trust has been undermined and implicit contracts have been broken.

We thus come to the conclusion that in what would amount to a competition under crisis conditions between the two systems, which would have both been shaken up and destabilized by external factors, the winner would probably be the Anglo-Saxon system - not because it is better under normal and stable conditions, but because it is simpler to achieve and to maintain: The more wide-spread the crisis is, the more likely a convergence to the more "crisis-resistant" *consistent* system would be. Even if external factors only destabilized the insider control systems, the outcome might be similar. Globalization leading to an "interpenetration" of corporate governance systems which had formerly been largely isolated from each other is probably a factor which challenges the insider systems more than the outsider systems. Nothing said so far rules out the possibility that the outsider system could be the inferior system in a comparison in which one of the two systems would be the only one applied on a universal scale, that is, as our assumption of the superiority of the German-Japanese system *can* indeed be true, there is the possibility of a convergence towards an inefficient equilibrium.

V. Outlook

The scenario of a convergence to an inefficient or inferior equilibrium may be a real possibility. As we have already noted, we feel that there are currently strong tendencies in the real world, and notably in Europe, which tend to undermine the existing corporate governance systems and might lead to a general adoption of some variant of the Anglo-Saxon system although it is in principle possible that the German-Japanese system is the better system *as long as* it were the only system and as long as only one system of corporate governance were applied universally. The most recent event is the successful hostile takeover bid by Vodafone for Mannesmann. Note that we do not want to make any claim that some variant of the German-Japanese system is indeed the better system; the recent political turmoil in Germany[54] and the prolonged economic crisis in Japan cast some serious doubts

[54] We are here referring to the CDU slash-fund affair of late 1999 and early 2000, in which the former German chancellor, an admitted and fervent advocate and active protector of the old German system, plays a key role.

on the actual truth of any such claim. But given the importance of corporate governance and of the possible convergence, we feel that the issues raised in the preceding discussion, and in particular the question of which system would emerge as the "winner" in a crisis, is more than an intellectual exercise. Of course, the scenario with a general crisis in different corporate governance systems, or at least in the insider control system, constitutes an extreme case. Having presented a rather strong proposition, we need to add some caveats.

First of all, a scenario should not be mistaken for a prediction. We do not want to predict a corporate governance crisis of the kind described above as the inevitable consequence of any attempt to introduce what is considered to be an improvement if this measure does not fit into the framework of the insider and outsider control system, respectively. After all, consistency of a corporate governance system is not an objective fact which any reasonable person should be able to see. It is a construct which exists in the minds of a few academics. There is a danger that these observers will misinterpret what constitutes the respective system, or that they will overestimate the importance of complementarity and coherence and underestimate the potential for partial reforms which disregard these aspects.

This raises the question of how stable the systems are with respect to "inconsistent improvements" and, thus, what scope there is for partial changes. Some examples of "inconsistent improvements" have already been mentioned before.[55] It remains to be seen how the established systems manage to adapt to these developments.

Secondly, our juxtaposition of just the two well-known consistent systems, the outsider and insider control systems, seems to suggest that there cannot be other consistent systems. We do not want to make such a claim. But if there are indeed other possible systems of corporate governance, which have only not yet been discovered and tested, and if these are not merely inconsistent mixtures of the elements of the two standard systems, then to warn against any experiments in the field of corporate governance might be to overstate the case for consistency. Such experiments might in fact generate new and possibly also consistent systems which could even lead the way to convergence.

Thirdly, and closely related to the second caveat, our analysis may have created the impression that corporate governance systems need to be rather rigid in terms of their consistency if they are to be viable; and this seems to suggest that there is not much scope for flexibility. However, a look at

[55] Cf. supra n. 41.

reality shows that there are currently strong tendencies to increase flexibility. One example is the relaxation of the traditional strict mandatory structure of German stock corporation law. After the German Supreme Court has allowed the formation of a mixed form of a partnership in which one partner is a stock corporation listed at the stock exchange, and the other a corporation with limited liability without access to the stock exchange (GmbH), corporate law practice now feels free to "contract around" many clauses that had been mandatory for stock corporations,[56] including those which pertain to main elements of their corporate governance. Another example is the ongoing discussion about the European Stock Corporation and its governance, which is intended to be very flexible. This flexibility will probably be used, to circumvent mandatory codetermination.[57] On the other hand, there are now cases in which codetermination rights, which closely resemble those imposed by law in Germany, have been established on a contractual basis. We do not know what these developments entail for the viability of corporate governance systems and possibly also for convergence. Further research is clearly needed.

[56] Cf. BGHZ (Supreme Court) 134, 392 (F.R.G.); Hans-Christoph Ihrig/Michael Schlitt, Die GmbH & Co KGaA nach dem Beschluß BGHZ 134, 392, p. 33 (Peter Ulmer ed., Heidelberg: Verlag Recht und Wirtschaft 1998).

[57] Cf. Peter Hanau, Neuer Anlauf zur mitbestimmten SE (A new start to reach a "societas europaea" with codetermination), 51 Recht der Arbeit 231 (1998) and the new British draft on the regulation of codetermination, 51 Recht der Arbeit 239 (1998).