PATH DEPARTURE: THE INTERNATIONALIZATION OF GERMAN CORPORATE GOVERNANCE AND FINANCIAL ACCOUNTING

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Abstract: The concept of path dependence has developed into one of the few explanatory approaches to be discussed in equal measure in various scientific disciplines. Based on the change of German corporate governance and financial accounting institutions, the article demonstrates that a departure from a path often continues to be possible, even where mechanisms are in place that favor path dependence. It is to be concluded that the inclination towards continuity, which is often ascribed to path-dependent processes, easily tends to be overestimated.

I. INTRODUCTION

The concept of path dependence has developed into one of the few explanatory approaches to be discussed in equal measure in various scientific disciplines. The central idea of the concept is based on the assumption that decisions taken in the past, established ways of thinking and routines substantially restrict the potential action alternatives and thus exert major influence on the future development of technologies, institutions, organizations and entire societies. It is expected that this restriction of action alternatives can be extremely far-reaching in certain conditions – down to situations where the departure from the path becomes basically impossible. The talk about “lock-in effects” (Arthur 1989) and the illustratively convincing exemplary case of the standardized Qwerty keyboard layout (David 1985), which has outlasted time although the reason for this particular arrangement of keys has long ceased to be relevant, have turned path dependence into a plausible argument for the change resistance of existing structures and patterns.

Yet how likely is the occurrence of situations that make departure from the path impossible? Owing to the widespread popularity of the path dependence concept, one might conclude that “lock-ins” can result in a relatively large number of situations. This article aims to cast doubt on this belief.

To start with, the concept’s wide area of application raises the question of whether people always mean the same thing when talking about “path dependence”. Even if we leave more abstract physical processes out of consideration, the concept’s areas of application still range from technological subjects of study such as computer programs, nuclear reactor types and track gauges (cf. Foray 1997) down to geographical cluster formations, complex institutional configurations and processes concerning
the entire society. A cursory passage through the theoretical foundations of path
dependence will show that people do not always share the same initial assumptions
when referring to path dependence. Instead, **different mechanisms** may be at work
which are dissimilarly susceptible to fundamental change.

In addition, the article aims at showing on the basis of two individual cases that the
high continuity inclination of the Qwerty keyboard case is strongly characterized by
very specific attributes. Both the "corporate governance" regulations (Bebchuk and
Roe 1999; Deeg 2001; Khanna et al. 2006, Schmidt and Spindler 2000) and the prin-
ciples of financial accounting (Botzem 2010, Caron and Turcotte 2009, Kanamori
2005), which this contribution intends to compare with the case of the Qwerty key-
board, are considered in the literature as being areas of application of the path de-
pendence concept. In reality, however, both cases show that path departure is pos-
sible despite the effect of path-favoring mechanisms. By means of the two model
cases, it shall be demonstrated that variable factors such as the extent of obstacles
to collective action and the availability of plausible alternatives are of central im-
portance to the susceptibility or (from the reverse perspective) continuity inclination
of existing structures and patterns.

In the following, I shall start by providing an outline overview of the dissemination of
the path dependence concept and the associated extension of how this term is un-
derstood (part II). In part III, the paradigmatic case of the Qwerty keyboard layout
will be analyzed and, subsequently, compared with the study cases of Germany's
corporate governance and financial accounting standards in parts IV and V. Finally, a
conclusion concerning the continuity of path-dependent developments, which often
tends to be overestimated, will be drawn in part VI.

II. **Mechanisms of Path-dependent Continuity**

The path dependence concept is mostly attributed to the economist and business
mathematician W. Brian Arthur and the economic historian Paul A. David. Originally,
the concept referred primarily to the area of technology development (David 1985,
Arthur 1989, Foray 1997). The generalizing aspects of the discussion predominantly
served to criticize neo-classical efficiency models. At the centre of the theory was
the intention to prove that the most efficient technologies and goods respectively
do not necessarily assert themselves. This also gave rise to a criticism of the market,
expressed concisely by the phrase “In Qwerty worlds, markets can’t be trusted”
(Krugman 1994: 235). At first, the path dependence of developments was attributed
in particular to the reinforcing mechanism of “increasing returns”. Increasing returns
are in place whenever a more comprehensive application of the technology (or,
more generally, the increased production or increased distribution of a product)
raises the benefit in a disproportionalley high manner. According to Arthur (1994:
112-113), this can be the case for various reasons including (a) high initial costs or
fixed costs, which are of lesser consequence in case of larger quantities, (b) learning
effects capable of contributing to the improvement of a product or the reduction of production costs, (c) co-ordination effects resulting from the opportunities for cooperation in a situation where various economic actors have taken similar decisions and (d) adaptive expectations creating a situation where a product’s future use depends on its current level of distribution.

Once the requirement of increasing returns is met, Arthur argues, anomalies of selection are to be expected which do not occur in case of stable or decreasing returns. Among various alternatives, it will then not necessarily be the most efficient one that prevails. In addition, the question of which alternative eventually asserts itself is relatively open, as various points of equilibrium will result. Once a point of equilibrium is reached, however, departure from this point is hardly possible anymore (lock-in). Small and accidental events can have a strong impact and determine the selection of an alternative, as they reinforce the chosen development path. However, the condition of “increasing returns” significantly restricts the area of application of path dependencies. In Arthur’s opinion (Arthur 1996), the overwhelming majority of all economic activity is subject to the rule of “diminishing returns”. Arthur distinguishes between resource-based and knowledge-based areas of the economy, and considers the condition of “increasing returns” to be met only in the knowledge-based segment.

A significant extension and conceptual reinterpretation of the path dependence concept was brought up by Douglass North in the field of institutional economics. Here, it became the basis for an explanation of institutional differences at the social level (North 1990). “Increasing returns” continue to be considered as a condition, but are now provided with a new foundation by North’s reference to institutional interdependencies: “In short, the interdependent web of an institutional matrix produces massive increasing returns” (North 1990: 95). Interdependence of the “institutional matrix” leads to institutional persistence trends and the stabilization of diversely efficient institutional systems not only in specific cases, but generally. This has a major impact on what is considered as path-dependent development. From North’s point of view, path dependence is no longer only about a reproduction of the identical (e.g. confirmation of the ever-identical Qwerty keyboard standard), but also about gradual change. North considers institutional change to be a permanently ongoing incremental process initiated by individual actors and organizations, with the impulse for change originating from the self-interest of actors and competition among the organizations. According to North, however, innovative learning always remains limited, as the behavior of actors takes its bearings from the existing institutions and their “mental models” are decisively shaped by the past (North 1998: 252).

North’s idea of institutional interdependence was taken up and further developed within the context of the social sciences. For instance, it is claimed in the research on “Varieties of Capitalism” (Hall and Soskice 2001, Hall and Gingerich 2009, Schienstock 2011) and in the network-oriented innovation research (Ferrary and
Granovetter 2009) that the efficiency of institutional attributes is positively influenced by other institutions. The complementarity of institutions leads to institutional clusters, in which fundamental changes would cause a loss of the efficiency-raising complementarity effect. This fact supports path-dependent stability of the entire cluster. Complementarities can gain a self-reinforcing character, since actors take their bearings from the already existing institutions and adapt their strategic behaviors to the “logic” of the institutional cluster, which can therefore be strengthened and carried on (Zysman 1994, Thelen 1999: 392-394).

In addition to “increasing returns” and complementarity, the quasi-irreversibility of event sequences is also being discussed as another causative factor of path dependence (Arrow 2003, David 1986, Pierson 2000, Rueschemeyer and Stevens 1997). Sequences can be regarded as a path-shaping mechanism, since the chronological order of events sometimes influences the outcome of these events in a significant and hardly revisable way. Depending on the sequence of events, developments can take a different course (Bassanini and Dosi 2001) so that, for reasons of the different sequence alone, critical junctures can arise from which onwards the paths branch out (Collier 1993). Mahoney (2000) also considers so-called “reactive sequences” as cases of path dependence. The latter are in place as soon as events in a reaction chain trigger further events. In such a case, there is an extremely strong causal connection between the individual events, meaning that the next respective event follows necessarily from the previous one.

Tab. 1: Overview of mechanisms capable of causing path-dependent continuity

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Logic of Continuity Assurance</th>
<th>Destabilization Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing Returns</td>
<td>Self-reinforcing effect</td>
<td>Adaptive expectations against what is established; transaction costs of change low and/or assessable; transition to “decreasing returns” because of environmental changes</td>
</tr>
<tr>
<td>Sequences</td>
<td>Quasi-irreversibility of event sequences</td>
<td>Counter-sequences with a reversing effect; discontinuation of reactive sequences</td>
</tr>
<tr>
<td>Functionality</td>
<td>Specific functions and purposes, systemic requirements</td>
<td>Externally caused changes to the functional requirements; significant ancillary effects, replacement by functional equivalents</td>
</tr>
<tr>
<td>Complementarity</td>
<td>Interaction effect</td>
<td>“Domino effect” as a result of partial change, which takes place nevertheless; cancellation or loss of the complementarity effect’s relevance</td>
</tr>
<tr>
<td>Power</td>
<td>Assurance of power</td>
<td>Generation of countervailing power; infiltration, conversion and layering</td>
</tr>
<tr>
<td>Legitimacy</td>
<td>Belief in the legitimacy of existing structures, sanctions</td>
<td>Diverging interpretations and traditions; delegitimization because of contradictions</td>
</tr>
<tr>
<td>Conformity</td>
<td>Relief of the need to take decisions, mimetic isomorphism</td>
<td>Assertion of a new guiding principle</td>
</tr>
</tbody>
</table>

Source: Beyer 2010
Owing to the very similar argumentation of institutional economics research and historical institutionalism, a significant interrelationship and synthesizing fusion of theoretical discussions has resulted since the 1990s in the area of sociological research and political science (cf. Thelen 1999). This has led to a further extension of the reasons given for path-dependent developments. Now, function-, power- and legitimacy-based reasons are likewise considered as reproduction bases of path dependencies (Mahoney 2000, Pierson 2000), as is the compliance with shared guiding principles and action scripts (DiMaggio and Powell 1991, Scott and Meyer 1994, Thelen 2003). In the latter case, it is the high level of uncertainty associated with any deviation from the existing guiding principle that favors path-dependent conformity along the lines of the prevalent guiding principles.

The spectrum of reasons given for path dependence is hence pretty large (cf. Table 1). Any reference to “the path dependence” of developments therefore does not constitute an unequivocal explanation. Considering this variety, specification of the respective underlying continuity-ensuring mechanism appears to be required. Depending on the underlying reason, assessments of the opportunities for change also differ significantly. Within this context, a number of authors strongly emphasize the existence of “lock-ins”. For instance, it is of extremely great importance to Paul A. David and W. Brian Arthur, the two pioneers of the theoretical proposition, to prove – in the framework of their criticism of economic efficiency concepts – that economic efficiency gaps can be resistant not only in the short term, i.e. as a transitional phenomenon, but also in the longer run. In the more recent debate, authors also hold that the formation of a path is not completed until a lock-in situation has arisen, which can no longer be actively unlocked by the actors (Schreyögg et al. 2011, Sydow et al. 2009).

In the institutional economics approach developed by North and its various socio-scientific extensions, concepts of the transformation ability have shifted towards an assumed incrementality of path-dependent processes. In this understanding, change is limited, but not blocked altogether. Accordingly, the objective is not so much to explain the persistence of suboptimal conditions, but rather to give reasons for lasting differences (such as the variety of economic systems, welfare state worlds etc.) and differing path trajectories.

In some recent articles, the active shaping of paths is also considered possible. For instance, Garud and Karnøe (2001) act on the assumption that actors are capable of creating paths and mindfully deviate from already existing paths. Beyer (2010) refers to possible destabilization options, which can lead to departure from the chosen path depending on the underlying mechanism of path-dependent continuity assurance. According to these considerations, a path based on “increasing returns” can come to an end if the anticipated advantage of a path change appears to be large, if transaction costs of the transition are considered as low and if “negative” adaptive expectations arise, which nullify the self-reinforcing effect or drive this effect into another direction (Katz and Shapiro 1986). A path based on complementarity may
end abruptly if the complementarity effect vanishes due to the change of an element. Furthermore, fundamental change can occur because the possible advantage becomes less relevant or because the complementarity itself is cancelled by intervening factors. Path dependencies based on sequences are susceptible to counter-sequences with an overlaying or cancelling effect. Path dependence on the basis of functionality can be changed by means of functional equivalents or entirely discontinued where the systemic context is called into question. As far as purely power-based path dependencies are concerned, the impression of deterministic unchangeability is likewise completely inappropriate from this point of view. Here, change-oriented action can aim for instance at the formation of countervailing power, infiltration or the assertion of institutional additions (Thelen 2003). Legitimacies can be deliberately called into question by actors, and conformity-based path dependencies can likewise come under pressure for change if actors try to assert themselves with new guiding principles. Considering the variety and differentiation of underlying reasons for path dependence, paths appear to be more or less susceptible to fundamental change, with the degree of susceptibility depending on which mechanism is responsible for the path dependence (cf. Beyer 2010).

Given the variety of discussed mechanisms and conceptual variants, case-related examinations are therefore generally required to look into the causes of path dependence and the consequences associated with each respective cause. In the following, a systematic comparison shall therefore be drawn between the Qwerty keyboard layout and two further established examples from the path dependence debate. The two contrasting cases of corporate governance and financial accounting differ from the example of the Qwerty keyboard layout through the fact that, over the past years, there has been a departure from the previously existing path. By means of the comparison, the particularities of the Qwerty keyboard case shall be illustrated and possible reasons for its difference from other path dependence cases shall be emphasized.

III. THE PARADIGMATIC CASE OF THE QWERTY KEYBOARD LAYOUT

The Qwerty keyboard layout is considered as the paradigmatic example of path-dependent standardization. Today, the reasons once militating in favor of the specific keyboard arrangement have long ceased to be relevant. In a “trial and error” procedure, the letters were arranged in such a way that mechanical blockage in type bar typewriters could be reduced. Some letters in the top row owe their positions to the circumstance that, for marketing reasons, manufacturers wished to put the word “typewriter” on paper as quickly as possible in the framework of typewriter presentations. By contrast, ergonomic reasons only played a secondary role in the construction of the keyboard layout. As a result of technological development (e.g. spherical head typewriters, computers), a replacement of the Qwerty standard would have been the expected option considering the fact that other keyboards are more suitable in ergonomic terms for the entry of text. Nevertheless, rationality
considerations still support a continued use of the Qwerty keyboard to the present day.

For any individual user of text entry keyboards, the existence of a standard keyboard layout represents an advantage (Thum 1995), as the arrangement of keys which he will find in different places is always braced to comply with his own learning background. For users of the Qwerty keyboard, adherence to the existing standard is rational in economic terms as long as the ergonomic advantage of another keyboard layout does not surpass the benefit of standardization. On the other hand, this implies that the individual benefit for users could be increased through collective agreement on a more ergonomic standard keyboard layout. In principle, continued use of the Qwerty keyboard, which is attributable to path dependence, could hence be terminated by means of collective action. The fact that is highly unlikely to happen though, directly relates to a well-known problem associated with any collective action (Olson 1971). Each individual actor is well-advised not to participate in the changeover to an ergonomically more advantageous standard, as the successful changeover does not depend on his / her action alone. The significance, which his / her own contribution would have to the changeover, would be only very low. By contrast, the risk that a switch of standards fails is extremely high. In the event of failure, the changeover expenditure would not have paid off and instead be lost irrecoverably (sunk costs).

This applies to all actors even though the respective starting situations differ: the decision-making situation of actors not having learned any keyboard arrangement so far is shaped by the past only to a relatively low extent. Here, only the collective past matters – since the decisions of other actors have led to the establishment of the Qwerty keyboard as the generally accepted standard. The decision in favor or against another keyboard layout is not influenced though by an own, previously taken decision in favor of the Qwerty keyboard. As a result, these actors would benefit substantially more from the advantage of a new standard than actors who have already learned the Qwerty keyboard layout, as they would not have to make the effort of re-learning. Nevertheless, rationality considerations indicate that they will either wait and hope that other actors implement the changeover (free rider position) or go along with the old standard. This applies at least as long as the actors do not attach more importance to the ergonomic advantage of another keyboard arrangement than to the standardization advantage of the Qwerty keyboard layout. The decisions, which actors usually take in an isolated manner, promote a choice in favor of the established Qwerty standard and hence continuous reproduction of the status quo. On the basis of rational considerations, actors who have already learned the Qwerty layout standard should be even far less prepared to make any contribution towards changing over to a new standard. In case of a change of standards, their overall expenditure would be higher, as they would have to learn another keyboard arrangement. In addition, their “sunk costs” would likewise be higher in the event of failure.
The situation is aggravated by the fact that individual actors are hardly able to avoid the problems surrounding collective action. In other cases, in which externalities play a role, there is the possibility of goods being procured in advance by individual actors, who wish to develop new sources of income or – in the event of mere public goods – simply accept that others too are enabled to use the procured commodity free of charge (Olson 1971). With regard to the Qwerty keyboard layout, this possibility has been brought to the discussion by Liebowitz and Margolis (1990: 4): “Adherence to an inferior standard in the presence of a superior one represents a loss of some sort; such a loss implies a profit opportunity for someone who can figure out a means of internalizing the externality and appropriating some of the value made available from changing to the superior standard.” Therefore, the previous disinterest of actors capable of internalization in changing the standard is regarded by Liebowitz and Margolis (1990) as an indication that the inefficiency insinuated by adherents of the path dependence thesis is questionable and actually belongs to the realm of fairy tales and myths.

However, a more far-reaching internalization of costs by individual actors would by no means solve the main problem. The latter consists in the fact that, in any event, a very large number of actors would be required to call the Qwerty keyboard standard into question or even replace it with a new standard. A large actor capable of internalization such as a company with many secretaries is basically able to finance the purchase of new keyboards and training courses for its employees, hoping that the changeover will pay off in the long run. Yet without the understanding and willingness of employees to take part in training courses in order to learn another keyboard arrangement, such a project would be doomed to failure nevertheless. Even where a large part of the costs to be spent on changeover to a new standard could be internalized by an actor with corresponding profit-making interests, everybody learning a keyboard arrangement other than the previous standard layout would still be exposed to an individual risk. If the changeover to a new standard fails to succeed, actors who continue working with the new keyboard layout will either miss out on the advantages of standardization or need to return to the old standard and hence face the burden of repeated (re-)learning.

Beside dependence on the collective action of many actors, there is a second high hurdle militating against departure from the Qwerty keyboard layout: the lack of alternatives. The keyboard arrangements previously having competed with the Qwerty layout have been eliminated almost entirely. Still on the market is the “Dvorak” keyboard layout, which Paul David (1985, 1986) described in his essays as an example of the ergonomically advantageous alternatives unable to assert themselves. This explicit reference by David is likely to have secured a certain niche existence of this keyboard layout even though empirical evidence supporting the ergonomic superiority of this layout, patent-registered in 1936, has been doubted (Liebowitz and Margolis 1990: 8-17). Furthermore, there are several other keyboard layouts, which have been patent-registered not quite as long ago such as the “DataHand Ergonomic Keyboard” or the “Orbitouch Keyboard”. However, they are
likely to have found significantly less users even than the already very uncommon Dvorak keyboard.

Even among the established technological examples aimed at illustrating the effect of path dependence, this almost complete elimination of alternatives represents an exception. In most cases, there is at least one serious competitor left, or alternatives have been able to establish themselves against the standard in certain niches of a considerable size. Although the VHS standard had largely asserted itself in the struggle between Betamax and VHS over who would set the video standard for private users prior to the replacement of the video technology, professional video productions did make use of the Betacam technology, which represented a further development of the Betamax system that had previously been eliminated from the home video segment (Olleros 2003). As far as the drive units of motor vehicles are concerned, there are today – despite quick limitation of the first motor vehicle drive types – not only the spark ignition engine and the Diesel engine, but also hybrid drives and electric engines, which have both found their own fields of application and, in the meantime, are considered as having even better future prospects than the spark ignition engine (Dijk and Yarime 2010). In case of sockets and track gauges (Puffert 2000), differences continue to be in place as different standards have asserted themselves at the level of the various individual countries.

A lack of alternatives has significant consequences: due to widespread use of the Qwerty keyboard layout, there is a high probability that other text entry keyboards will not be taken into any consideration whatsoever by new users. A deliberate decision in favor or against a keyboard layout does not take place, since the available alternatives are completely unknown to many potential users. With their product advertising, the manufacturers of other keyboards layouts systematically address users who search for an alternative on their own initiative (e.g. because they suffer from health problems attributable to the use of a computer or typewriter), since they are unable from the outset to acquire the group of new users. The low popularity of alternative keyboard layouts also brings about that possible developments capable of favoring a changeover remain largely undiscovered, as they do not become public.

Due to the extremely low visibility of alternatives, all the indications are that most potential users will expect the Qwerty keyboard layout to remain the standard well into the future. The considerable significance of projections on the future and adaptive expectations for the path dependence of developments has been pointed out by Katz and Shapiro (1985). The widespread expectation that an established standard will also prevail in the future can turn into a “self-fulfilling prophecy” (Merton 1948). The purchase of an alternative keyboard is associated with the sizeable risk that, before long, its manufacturer may cease production because there was not enough demand from customers for the alternative product. If many customers expect that they might not be able to get replacement for a keyboard in the future and
hence shrink from such a purchase, this can lead to a situation where the manufacturers of alternative products are indeed forced to cease production sooner or later.

The aforementioned high hurdles to change are a direct consequence of the underlying continuity-ensuring mechanisms. In his characterization of the Qwerty example, Paul David (1986: 41-45) himself has referred to several of these mechanisms. In fact, several of the mechanisms mentioned in part II are at work at the same time. Along with the self-reinforcing “increasing returns” mechanism, complementarities (or, as David puts it, “technical interrelatedness”) and sequence-related effects (“quasi-irreversibility of investment”) also contribute to the continuity assurance. The interaction of these mechanisms has created conditions, which are highly unfavorable for any successful re-orientation towards a new standard. The large number of actors, who would be required for a change of path, but have every reason individually (i.e. without joint collective action) to adhere to the existing standard, in combination with the factual lack of an alternative, of which most actors are aware, result in a constellation that rules out fundamental change not entirely, but with a high degree of probability.

IV. THE FIRST REFERENCE CASE: CORPORATE GOVERNANCE WITHIN “GERMANY INC.”

In the area of corporate governance, the past was characterized by major national differences in terms of institutional configuration. For instance, distinctions were made between shareholder- and stakeholder-oriented systems, outsider-controlled (financial market control) and insider-controlled (bank control) variants as well as between monistic-interest and pluralistic-interest systems. While the durability of these institutional differences was explained on the one hand by direct reference to the path dependence concept (Bebchuk and Roe 1999, Deeg 2001, Schmidt and Spindler 2000), individual path-shaping mechanisms such as the complementarity of institutions have also been made responsible for the phenomenon of historical continuity (Hall and Soskice 2001). Over the past years and decades, however, differences between the various economic systems in the field of corporate governance have been strongly challenged by internationalization processes and associated government regulation measures (Beyer and Höpner 2003, Höpner 2007, Lane 2003). At least as far as Germany is concerned, there are strong indications that a break with the past and departure from the once chosen path has occurred. In this respect, corporate governance can be regarded as a contrasting case in opposition to the Qwerty example.

The subject area of German corporate governance regulations differs from the Qwerty keyboard case in respect of the hurdles to collective action as well as with regard to the availability of alternatives. This can be illustrated by means of the corporate cross-ownership structures regarded as the “institutional nucleus” of German corporate governance prior to the dissolution of “Germany Inc.” (Heinze 2004,
Höpner and Krempel 2004). As in the Qwerty case, the analytical starting point is a constellation of actors, in which externalities are at work. A company integrating itself into the network of corporate cross-ownership is able to benefit from this integration as long as several other companies are likewise integrated into the network. Ultimately, however, it cannot control this constellation. By contrast to the Qwerty keyboard layout, however, the self-reinforcing effects caused by externalities were probably far less comprehensive, as integration into the corporate network was never as widespread as the use of Qwerty. Even in the heyday of Germany Inc., many companies including several large corporations were never part of the cross-ownership/interlocking directorates network (Windolf and Beyer 1996).

The isolated companies differ characteristically from the interdependent ones. For instance, the equity capital ratio of the non-interwoven companies was significantly higher than that of the interdependent companies (Beyer 1998: 154). This indicates a behavioral option, which had limited the reach of self-reinforcement to a certain group of companies: in principle, the companies were free to choose between different strategies in terms of their financing behavior, which were each associated with a number of specific advantages and disadvantages. The advantages of outside capital are good scalability with regard to volumes and maturities, short-term realization possibilities and favorable tax treatment. By contrast, equity capital financing is more crisis-resistant, the outflow of liquidity can be better controlled and dependence on a credit grantor can be avoided. Apparently, integration into the cross-ownership network was able to improve the companies’ access to (low-interest) outside capital in Germany’s bank-dominated system. Those companies, however, which strongly relied on equity capital financing, had no or at least less reason to join the network.

In addition, the opportunity to regulate competitive relationships also created an incentive for cooperation. In the past, the embeddedness of actors achieved by means of cross-ownership and interlocking directorates was able to generate a cooperative climate among the interdependent companies, which led to a higher level of competitiveness in comparison to the isolated companies. Considering this reason for cross-ownership, however, the self-reinforcing effect based on externalities could yet again apply only to a certain number of companies. Whereas some industrial sectors are dominated by a few large corporations, which taken together hold a large market share, other sectors of the economy are more fragmented. In case of high fragmentation, coordination is more difficult to realize, so that possible thresholds for the initiation of a self-reinforcing process are less easy to surpass (Granovetter 1978). Empirical research on the cross-ownership and interlocking directorates indicates the existence of such thresholds, as its results show a clear correlation between the intensity of cross-ownership/interlocking directorates and economic concentration. In industrial sectors with lower degrees of concentration and higher fragmentation, sectoral cross-ownership densities were significantly lower (Beyer 1998: 180, Windolf and Beyer 1996).
Compared to the Qwerty keyboard, the effects of externalities were hence significantly more limited. An all-embracing “increasing returns” effect was not in place. Subject to intended rationality conditions, similar behavior did not suggest itself to the companies in the same way as in the Qwerty keyboard case. Instead, a relatively large part of the companies pursued alternative options. This implies that the continuity of network-based corporate cross-ownership/interlocking directorates always depended on the companies’ coordination willingness and never reached the degree of implicitness, with which the users of computers and typewriters became and continue to become users of the Qwerty keyboard layout.

Another difference from the Qwerty keyboard layout is the differentiation of actors. The typical characteristics of the German corporate network did not only include an intensity of cross-ownership and interlocking directorates, which was remarkably high in international comparison, but also the existence of an interdependence centre, into which the largest and most important corporations were integrated (Heinze 2004, Windolf 2002). The degree of integration into the network hence varied between the individual companies.

Strongly centralized networks with high density levels hold an advantage in terms of collective action (cf. Marwell, Oliver and Prahl 1988). However, this coordination-facilitating constellation of actors also means that continued existence of the network-based corporate governance system depended in a particular way on a relatively small group of companies, i.e the very closely interdependent companies of the centre. A hierarchically structured interdependence network is relatively well-protected against “random shocks”, as could be shown in an analytic modeling designed by Bruce Kogut and Gordon Walker (2001). The structure of the network remains intact even if, according to random logic, individual companies are removed from the network. If, however, the most-interdependent companies are removed one after another, such a structure is threatened with disintegration already after very few moves of this kind.

Since the group of very closely interrelated companies was additionally differentiated into borrowing and lending companies, the withdrawal of a small number of companies because of corporate strategy reasons could turn into a factor threatening the continued existence of the entire interdependence structure and call the whole network-based corporate governance system into question. This is precisely what has eventually happened. Many of the previously most strongly interrelated German industrial companies changed their corporate strategies in favor of stronger orientation towards the international capital markets (Jürgens et al. 2000), and the large German financial corporations abandoned their former credit bank approach and reorganized risk protection of their lending activities in such a way that it no longer required corporate cross-ownership.

Moreover, the network structure was not only susceptible to corporate strategy readjustments, but also to political decisions. The design of company, capital market
and tax law exerts influence on the cross-ownership behavior of companies both directly – in various countries, individual forms of interdependence are completely prohibited –, and indirectly for instance if, as has happened in Germany, the sale of shares in corporations is favored by means of new tax legislation. From the mid-1990s onwards, several legislative measures have been implemented (Financial Market Development Act 1994, Corporate Sector Supervision and Transparency Act 1998, tax reform 2000/2001, Securities Acquisition and Takeover Act 2002 etc.), which further boosted the already ongoing dissolution process of the corporate cross-ownership system. In the political opinion formation process, company law questions were of a rather marginal importance so that, once again, a relatively small circle of persons were responsible for the implementation of changes, which contributed to a fundamental change of the German corporate governance system (Cioffi 2002).

Beside the dissimilar constellation of actors, another difference from the Qwerty keyboard layout lay in the fact that there was a consistent alternative model to the German network-based corporate governance system, which was available as a point of orientation and comparison. In the Anglo-American context, an understanding of corporate governance has developed, which focuses on the relationship between the company’s shareholders and its management. Interests in the company other than those of the owners are regarded as secondary. To reduce or even solve the shareholders’ supervision problem, the Anglo-American system basically relies on the commitment to transparency, which is imposed on the companies on the occasion of their IPO, and on the disciplining power of the capital market. Based on the assumption that a company’s equity price reflects all publicly accessible information on the current and future earnings potential of this company, the equity price development is regarded as an indicator of the management’s performance. Therefore, a close link between this indicator and for instance the management remuneration, corporate financing and the company’s independence is aspired.

Practice in the Anglo-American market has adapted itself to this understanding of corporate governance. Performance-related stock options as an important component of management income are supposed to signal a high level of compliance between the interests of the owners and the management (Levmore 2001). External capital procurement by means of corporate bonds complies with the expectation that stock markets will only make financial means available to unsuccessful companies at increased capital costs, and the sometimes “unfriendly” takeover activities of the so-called corporate governance market are seen as legitimate competition between different manager teams struggling for the right to control a company’s resources. Moreover, the Anglo-American economy is characterized by a very high level of stock market capitalization; share holdings are broadly diversified (La Porta et al. 1999), personal and especially capital interdependence between companies is comparatively low, and banks are largely excluded from the immediate ownership of non-financial companies. Nevertheless, the Anglo-American banks specializing in capital market-related services have achieved a globally leading position.
For Germany’s large-scale banks, the success of these competitors was an essential trigger to reflect on a strategic reorientation. For the political reform considerations, not least the strength of the American economy and the regained strength of the British economy were of major significance. The existence of a consistent counter model, which could be credited with better micro- and macroeconomic results, substantially boosted the process of dissolving Germany’s network-based corporate governance. Now, corporate interdependencies came under pressure to justify themselves. They were put on a level with intransparency, banking power and not market-conforming conduct, whereas the Anglo-American corporate governance model was considered as providing higher standards of supervision at least until a series of scandals such as the Enron scandal occurred in the United States (Windolf 2004).

 Probably, the historical continuity of dense corporate networks in Germany was based on several continuity-ensuring mechanisms. Since the self-reinforcing effect of externalities did not reach the extent of the Qwerty keyboard case, continuity always depended on the companies’ coordination willingness and ability. Initially, it was probably a widely accepted normative orientation to the national public good, which provided the basic motivation for the necessary coordination willingness. Later, this motivation was replaced by the guiding principle of the social market economy, into which the coordinative elements of German corporate governance were integrated. In the heyday of the “German model”, complementarities between the different economic spheres may also have played an important role (Streeck 1997). Ultimately, however, the assurance of continuity was probably dependent primarily on continued economic success. After this success failed to materialize in several crisis-stricken periods since the 1990s, the coordination willingness of those actors, who were of relevance to the assurance of continuity, was no longer in place either. By contrast to the Qwerty keyboard layout, which can likewise be attributed to various continuity-ensuring mechanisms, the various mechanisms underlying the continuity of German corporate governance do not seem to have mutually strengthened one another. Instead, they presumably replaced each other. Continued consolidation of the cross-ownership/interlocking directorates structures, which would have corresponded to the Qwerty keyboard layout, did not result, but only a kind of continuity which was comparatively susceptible to fundamental change.

As is shown by a comparison with the Qwerty keyboard layout, corporate governance along German lines was far less immune against fundamental change. It was not required for a very large number of actors to call the status quo into question jointly or in a coordinated way. Instead, it was sufficient that a number of major actors performed a change of orientation. In addition, the corporate interdependence could be called into question from various sides, i.e. both by the companies and by political actors. Since a consistent counter-model was also available, the uncertainty of replacing an existing guiding principle with a new one, from which actors could take their bearings, was reduced. Departure from the status quo was favored because the counter-model promised greater economic success at the time when the
old model was called into question. To certain actors, who were of central signifi-
cance to the overall system, departure from the behaviors and strategies of the past
seemed to be a promising prospect. At this time at the latest, the institutional envi-
ronment no longer acted as an “adverse environment” (Jürgens et al. 2000) for devi-
ating strategies. Instead, actors could expect to benefit from breaking with tradi-
tions and performing a change of orientation in favor of the Anglo-American corpo-
rate governance model.

V. THE SECOND REFERENCE CASE: FINANCIAL ACCOUNTING STANDARDS

The second reference case, i.e. the standardization of financial accounting, is like-
wise characterized by similarities to the Qwerty keyboard layout, so that this case is
also regarded as a typical example of path-dependent processes (cf. Botzem 2010,
Caron and Turcotte 2009, Kanamori 2005). As in the corporate governance example,
however, the hurdles to path departure were lower. In Germany, path departure by
the capital market-oriented companies finally took place in 2004 with the Account-
ing Law Reform Act (BilReG). Instead of drawing up their balance sheets according to
the previously applicable criteria of the German Commercial Code (German
GAAP/HGB), these companies are now required to draw up their balance sheets
according to the International Financial Reporting Standards (IFRS). In this context,
the Accounting Law Reform Act implemented the requirements of EU regulations,
which had declared a corresponding changeover to the new international account-
ing standard as binding. This situation had been preceded by interest aggregation
and homogenization processes on the International Accounting Standards Board
(IASB) which, according to Botzem (2010: 200), initiated a self-reinforcing process
since 1997 that eventually allowed legislation for the introduction of an internation-
al standard. In addition, the legislation was also preceded by the circumstance that
some German large-scale corporations had already drawn up their balance sheets
not only in line with German GAAP standards, but also according to international
standards such as the IAS (the precursor of the IFRS regulations) or US-GAAP
(Weißenberger et al. 2004).

As in the event of text entry keyboards, the existence of a standard also makes
sense in principle in the field of financial accounting. Standardization allows to draw
comparisons between companies and thus create transparency for the protection of
creditors or in the interests of capital market actors. Once a standard has estab-
lished itself, mechanisms start to work which favor adherence to this standard with-
in the meaning of path dependence. Actors acquire competence and know-how,
which would lose its worth as a result of departure from the standard. The longer a
standard is established and the more companies adhere to this standard, the easier
it is to draw systematic comparisons with other companies and times. As the stand-
ard continues to apply, the advantages of standard setting are likely to gain addi-
tional strength, so that interest in the standard’s continuation is unlikely to de-
crease.
As regards both the hurdles to collective action and the availability of alternatives, however, the case corresponds rather to the case of corporate governance than to the Qwerty example, which is why departure from the path has eventually occurred nevertheless.

Among other things, it was possible to overcome the hurdles to collective action because there were several different initiatives aimed at the establishment of cross-border standardization in the field of corporate financial accounting, which interacted in a converging manner. In particular, the initiatives of the United Nations, the European Community/European Union and the International Accounting Standards Board were of eminent importance.

In the 1970s, the United Nations launched a regulatory initiative to extend the disclosure obligations of multinational corporations (Rahman 1998). At two international conferences, the UNCTAD Conference of 1972 and the UN General Meeting of 1974, the developing nations demanded a “new economic world order”, supposed to put economic relations between the industrialized and the developing nations on a new basis. In this context, one of the primary objectives was to prevent the exploitation of raw material deposits. Accordingly, the wish to strengthen supervision of the activities of multinational corporations became a subject of debate (Ansperger 2005: 166f.). An expert commission assigned by the Economic and Social Council of the United Nations (ECOSOC) ascertained an increased need for corporate disclosure obligations and thus triggered the foundation of the working group “International Standards in Accounting and Reporting (ISAR)” under the umbrella of UNCTAD. Even though the establishment of binding obligations to disclose corporate information was ultimately prevented in the framework of the UN through the “exertion of massive influence on UNCTAD by pressure groups of multinational corporations” (Botzem 2010: 78), the United Nations initiative nevertheless promoted the idea that internationally consistent financial accounting standards were required.9

Alongside the United Nations, the European Community had also endeavored for several decades to establish cross-border financial accounting regulations. The original objective of attempts to harmonize financial accounting procedures, which started in the 1960s, was to ensure the comparability of national regulations. An important step in this direction was taken with the fourth EC Council Directive (78/660/EEC) of 25 July 1978, through which all limited liability companies were placed under an obligation to draw up an annual financial statement reflecting the respective company’s factual financial situation. Although this directive did not yet aim at a complete standardization of financial accounting principles, establishment of the “true and fair view” guiding principles still put significant legitimization pressure on financial accounting systems like the German GAAP (HGB, German Commercial Code) reporting procedure, which are focused primarily on the principle of caution and creditor protection. With the seventh EC Directive (83/349/EEC) of 13 June 1983, legal regulations for the consolidated accounts of corporations were likewise designed to strengthen the information functions for investors. In 1990, an informal
advisory body was set up at European level with the “Accounting Advisory Forum”, in which national standard-setting authorities and representatives of analysts, investors and balance sheet-composing companies prepared further steps towards setting a new standard (van Hulle 2004: 354). From 1995 onwards, the European Commission abandoned the idea of a purely European solution and henceforth supported the “International Accounting Standards Board”, the third important initiative for the development of harmonized international accounting standards (or its predecessor organization IASC).

The “International Accounting Standards Board” traces back to an initiative from the former chairman of Britain’s professional organization of certified public accountants, Sir Henry Benson. In 1966, he invited representatives of the corresponding Canadian and US professional organizations to talks, which aimed at a cross-border exchange of financial accounting practices. Initially, a “study group” was founded that published a total of 20 studies on the preparation of joint international accounting standards. In 1973, the “study group” established the “International Accounting Standards Committee”, to which the professional organizations of initially six further countries (Australia, Germany, France, Japan, Mexico and the Netherlands) were admitted. The committee, to which further representatives of national professional organizations were later admitted on a step-by-step basis, was extremely active during the 1970s and 1980s in developing various financial accounting standards, which companies were able to adopt on a voluntary basis. The so-called “International Accounting Standards (IAS)” proposed by the committee, which initially still included numerous options, was taken up especially by listed companies operating at the international level. Form the end of the 1980s, the “International Accounting Standards Committee” abandoned its exclusive focus on certified public accountant associations and opened itself to special interest groups of financial market analysts (1988), the international representation of chief financial officers (1996), the Federation of Swiss Holding Companies (1995) and other capital market-oriented special interest groups. At the initiative of stock exchange supervisory authorities, various options have also been reduced since that time. Both developments led to the standards’ increased orientation to the information requirements of financial market actors. In 2001, a new organizational structure was established and the committee transformed into the “International Accounting Standards Board (IASB)”. In the framework of this reorganization, a foundation (IASCF) domiciled in Delaware, U.S.A., was established, and financing of the IASB was placed on a new basis. This financing system is now based on the deposits of leading auditing companies, private financial institutions and industrial corporations from all over the world as well as on financial means from central and development banks and other international organizations. Ever since, the standards adopted by the IASB are referred to as International Financial Reporting Standards. This name is an indication of the claim that the composed standards do not only aim at correct financial accounting procedures, but also at comprehensive and transparent financial reporting. Ever since that time, the International Accounting Standards Board (IASB) endeavored particularly
to achieve acceptance in the US and bring about convergence between IFRS and US-GAAP. In addition, standards for small and medium-sized businesses have been developed. At present, the European Union is considering whether these financial accounting regulations passed in 2009 shall be integrated into European law as was the case with the regulations for stock exchange-listed corporations, which the EU Commission declared as legally binding in its directive no. 1725/2003 of 29 September 2003.

In the final analysis, interaction of the various initiatives paved the way for a departure from the national standards. Although these national standards also entered into competition with each other temporarily, the ultimately crucial development was that, backed by different motivations and interests, the idea of having to implement consistent international standards was boosted. The hurdles to collective action were lower than in the QWERTY case, as the agreement on new regulations took place primarily in relatively small groups of experts. In the end, the initiative proved to be the standard-setting one, which had originally only given recommendations and was backed by persons with similar experiences and interests (Botzem 2010). The abandonment of national regulations took place since the legally binding regulation having been aspired from the outset in the other two initiatives became realizable through these two initiatives' acknowledgement of the standards elaborated in the third group. Interaction of the individual initiatives helped to overcome the hurdles to collective agreement and facilitate departure from the previous path.

Like in the corporate governance case, it was also important that the originally applicable national regulation could be challenged from various sides. Beside the aforementioned initiatives, the role of some large stock exchange-listed corporations was of major significance, whose early adoption of the initially voluntary standards had signaled an interest in internationally comparable regulations. The orientation of these corporations towards the international capital markets had fundamentally changed the original interests, as was already demonstrated in the section on corporate governance. Financial accounting according to international rules was considered as an opportunity to raise the attractiveness for international investors and facilitate the process of communication at the international level (Hassel et al. 2003).

Furthermore, departure from the original financial accounting standard was favored by the fact that the International Financial Reporting Standards stand in the tradition of Anglo-American accounting principles. Therefore, they could be perceived as a plausible alternative that was also partly superior to the old standard. The essential difference from the financial accounting provisions under the German Commercial Code (German GAAP/HGB) consists in the fact that the supply of decision-relevant information to investors is considered as the primary objective of financial accounting, behind which other objectives have to stand back. Insofar, internationalization of the financial accounting standards was in line with changes that were already underway in the area of corporate governance. The upcoming changes towards An-
American practices were complementary to one another and therefore mutually favored timely departure from the original path. The self-reinforcing effects at national level were weakened, as the reform efforts also had a mutually reinforcing effect (cf. Beyer and Höpner 2003).

4. CONCLUSION

The comparison of the model cases Qwerty keyboard layout, corporate governance and financial accounting was able to show that long-lasting continuity permits the conclusion only in very special conditions that a “lock-in” situation has arisen, which makes path dependence virtually impossible. Even where mechanisms are in place that favor path dependence, a departure from the chosen path mostly continues to be possible nevertheless. The high inclination towards continuity, which is associated with path-dependent processes, is not a general characteristic of path-dependent processes, as the following must be taken into consideration:

(1) The limitation of action alternatives as a result of historical events or decisions is not necessarily subject to the “increasing returns” mechanism, which played a dominant at the beginning of the path dependence discussion. The theoretical development has shown that there are various mechanisms capable of generating institutional continuity at least over certain periods of time. Over the course of time, more and more mechanisms have been associated with path dependence, so that a narrow understanding of this term was eventually replaced with a broad one. However, the mechanisms discussed differ in terms of their continuity assurance logic and susceptibility to fundamental change. Consequently, a mere reference to the “path dependence” of developments is at least insufficiently specified, since the consequences of path dependence vary significantly depending on which mechanism is in place.

(2) The Qwerty keyboard layout is an example of how long the repercussions of historical events and decisions can last. However, it is also an exceptional case, as not only one, but several continuity-ensuring mechanisms are at work at the same time. Interaction of the various mechanisms has created conditions, which are extremely unfavorable for any changeover to another standard. Owing to the exceptional position of the Qwerty keyboard standard, any generalizing transfer of conclusions to other examples bears the risk that the continuity-ensuring impact of a path-dependent development is overestimated. Though such an interaction of several mechanisms may also occur in other individual cases, this cannot be assumed on a general basis.

(3) Through the discussion on path dependence, the attention was drawn to initial situations, which marked the beginning of a historical development. What follows the starting point of a development, however, also differs from one case to another. This can be shown for instance by the comparison, which this article had made with regard to the problems of collective action.
Depending on the strength and reach of reinforcement effects and on the underlying constellation of actors, the collective problems in overcoming the status quo differ significantly. The comparison between the Qwerty keyboard layout on the one hand and German corporate governance and financial accounting standardization on the other has shown that the problems of collective action were substantially lower in the two last-mentioned subjects of study, since prominent actors had a relatively strong influence on either lasting continuity or deviation from the status quo.

As is shown by the two examples of German corporate governance and international financial accounting standardization, the existence of one or several alternatives capable of serving as a standard of comparison is likewise of major importance for the susceptibility of path dependence. As soon as there are plausible reasons to assume that an alternative may be superior to the existent status quo, the latter is braced to come under adaptation pressure. Institutional structures can sometimes, but not always withstand this pressure, depending on the extent of assumed superiority and on whether a sufficient number of the actors previously having guaranteed continuity have reason to change the status quo in the same direction.

In addition, it must be noted that longer phases of continuity are able to conceal dynamic developments, which are of relevance to change that will eventually occur at a later point in time. Analyzed more closely, one would probably find that different continuity-ensuring mechanisms have replaced one another in many processes perceived as path-dependent. In the event of German corporate governance, nationalism was initially extremely important as a basis of coordinated and cooperative behavior among the domestic companies. In the course of the postwar period, the reasons for adherence to the coordinated and cooperative model switched to economic success and the resulting high legitimacy of the German social market economy. Although it was still possible in the 1970s and 80s for instance to prevent takeovers by foreign companies, these remains of a nationalist approach were used up at the latest in the mid-1990s. The situation was similar in the case of financial accounting standardization, where initiatives for internationalization were partly launched already in the 1960s and brought about standardization only after several decades. Longer phases of continuity can therefore raise the impression of a state of stability (lock-in) without this actually being the case. As a result, intervening processes in the background of path dependence also constitute a reason requiring precise specification of each individual case.

Finally, another reason why path dependence is not always the same results from the complexity of what a path-dependent development relates to. Financial accounting principles or even general corporate governance structures are far more complex than the institutionalization of a keyboard layout. With a rising degree of complexity, the number of breaking points favoring fundamental change also tends to rise. For instance, corporate cross-ownership could be called into question not only by the companies them-
selves, but also by the lawmaker. Regardless of this assumed tendency, the number of breaking points is likely to be variable subject to the context, leading us to the conclusion that strong differentiation of path-dependent developments is required as well in this respect.

From the perspective of actors, there are hence various starting-points to overcome path dependence or depart from an existing path depending on the particular context of action. Actors have to overcome various-sized problems of collective action, and the availability or perceptibility of alternatives also differs from case to case. If one takes path dependence seriously, the underlying mechanisms and constellations have to be decrypted. The mere statement that the past influences the present (history matters) remains trivial unless one analyzes how it does so. If one does without identifying the continuity-ensuring mechanisms and analyzing the actors' context of action, one will probably always be taken by surprise whenever fundamental change occurs.

1 The concept of path dependence has managed to establish itself in both economic, juridical and social sciences research (cf. Bebchuk and Roe 1999, Castaldi and Dosi 2004, Guinnane et al. 2003; Martin and Sunley 2007, Vergne and Durand 2011, Sydow et al. 2009). With a larger degree of conceptual abstraction, the term path dependence is also used in the natural sciences (e.g. Durand and Mendel 1979, Simon and Bernazzini 2006).

2 Cf. Arthur (1989: 125): “It is therefore not sufficient that a technology gain advantage with adoption; the advantage must be self-reinforcing.”

3 Externalities are in place if the production and consumption behavior of an economic entity has an impact on the benefit of others without this entity being able to ensure that the others participate in the resulting costs or, conversely, having to provide them with compensation for resulting disadvantages.

4 In model theory terms, decentralized adaption processes under the condition of increasing returns do not necessarily lead to a consistent standard either (cf. Auriol and Benaim 2001).


6 The possible advantages of cross-ownership did not result from standardization – as in case of the Qwerty keyboard layout –, but rather from coordination. In principle, however, the latter can also act as a self-reinforcing incentive, so that previously not interdependent companies are prompted to join the network because other companies also integrate themselves into the network.

7 According to Mark Granovetter, economic benefit-maximizing behavior without any social embeddedness would almost necessarily lead to a problem of order, since “…there is nothing in the intrinsic meaning of ‘self-interest’ that excludes force or fraud.” (Granovetter 1985: 488).

8 For example through the introduction of collateralized debt obligations permitting externalization of the credit risks.

9 Today, UNCTAD’s ISAR working group focuses on the introduction of the IFSR standards in the developing countries (UNCTAD 2006) and thus fosters the dissemination of information-oriented financial accounting practices. In this context, UNCTAD is also supported by other international organizations like the World Bank, which partly makes the extension of credits subject to the introduction of international financial accounting standards (Hegarty et al. 2005).

10 The “International Financial Reporting Standard for Small and Medium-sized Entities (IFRS for SMEs)” is an independent standard based on the International Financial Reporting Standard for listed companies. The financial accounting regulations for the balancing and valuation of assets, liabilities, earnings and expenditures were designed along more simple lines, as irrelevant issues were omitted and the number of mandatory appendix information was reduced.
This referred to the international accounting standards passed on 14 September 2002 with the exception of IAS 32 and IAS 39. In the meantime, the regulation has been replaced by regulation no. 1126/2008 and updated correspondingly.
Reference:


