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“Path-Dependency of Economic Transition  
: An Analytical Review”

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# **Path-Dependency of Economic Transition<sup>\*</sup>**

## **: An Analytical Review**

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### **Abstract**

The concept “path dependency” helps understanding the institutional changes and has given a logical basis which explains not convergence of the evolutionary path of transition economies but their diversified path. Based on “the base simplified literature”, in short random sampling papers from the EconLit database through a keyword search that examine the transition economies from the angle of path dependency, this paper empirically investigates the development trends with regard to path dependency arguments in economics of transition, the theoretical trends on which the economics of transition has been discussed and others. As a consequence, the theoretical and empirical characteristics of path dependency arguments in the economics of transition can be elucidated and the paper clarifies that the papers of David Stark has occupied the important position as a source of path dependency approach’s development, through an analysis of encoding a series of literature attributes the degree of support for path dependency, the relevant reasoning factors and other influential factors based on our own methodology. A systematic / analytical review clarifies the following points: support for path dependency has declined in 2000s; while path dependency approach covers all the transition economies, South-East European countries and Russia have comparatively been stronger supporters of path dependency influence than other EU joining East European countries; researches on institutions, regions and local identities have relatively strongly support path dependency arguments

**Keywords:** path dependency, institution, transition, legacy, economics

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## **Introduction**

Triggered by the fall of the Berlin Wall in November 1989, the structural transformation process achieved critical mass in Central and Eastern Europe as well as in the former Republics of the Soviet Union in the movement toward the establishment of a capitalist economy, accompanied by a broad swath of institutional changes in this conversion from a socialist planned economy to a capitalist market economy. When the concept of path dependency is applied to this historical event, it helps to understand such institutional changes in the transitional countries and has also formed the basis for explaining the diversification, instead of the convergence, of the economic development paths in these transitional countries. The path dependency concept can be used in various kinds of literatures such as economics, sociology, politics regional studies and others, and there were some investigations which did not give the clear definition of the concept and utilized the concept without sufficient grounds, and some researches have utilized the concept for historically determinant explanation. Therefore, there have so far been virtually no systematic studies of the literature on analyses of the transitional economy that have utilized the concept of path dependency.<sup>1</sup>

With the focus on “path dependency”, according to which the legacy of the former socialist planned economy and policy decisions on the initial transition to a market economy explain the subsequent path of institutional changes, this paper discusses how this particular concept has become widespread and has been evolving within Economics of Transition. As for the study methodology, this paper draws on “base simplified literature”, which consists of papers that study transitional economies in association with path dependency among randomly sampled papers from the EconLit database through a keyword search and with reference to the related literature. On this basis, this paper will discuss the development trends with regard to path dependency arguments in economics of transition, the theoretical trends on which transitional economy theory draws, and the analytical trends by region, etc., in an empirical manner. As a consequence, the theoretical and empirical characteristics of path dependency arguments in transitional economy theory can be elucidated and this will also put into perspective the effectiveness of the approach of path dependency as well as its future potential with regard to transitional economy theory.

## **1. Path Dependency Concept and Literature Survey Methodology**

### **1-1. Concept and Methodology**

The purpose of this paper is not to refine and redefine the path dependency concept itself. This paper looks at the diverse implications encompassed by path dependency on the basis of the following understanding: “a process where contingent events or decisions result in institutions being established that tend to persist over long periods of time and constrain the range of options available to actors in the future, including those that may be more efficient or effective in the long run” (Campbell, 2010, p. 90).

The selection of keywords for our literature search is related to a broad range of theoretical circumstances surrounding the path dependency theory. For example, Paul David defines path dependency as a property of contingent, non-reversible dynamic processes, including a wide array of biological and social processes that can properly be described as ‘evolutionary’ (David, 2001, p.15). In this way, the concept of path dependency primarily has affinity to evolutionary

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<sup>1</sup> For example, the study by Hare and Turley (2013), which has encompassed studies on transitional economy theory, does not take particular note of path dependency.

elements. Among early studies that adopted the path dependency concept in transitional economy theory, Klaus Nielsen and his co-authors, for example, described path dependency as a concept similar to “the branched pattern of chreodic development” that locks-in any positive feedback effect in a stable path when the feedback effect is strong enough to cause a change and this is self-replicating, while “the institutional legacies of the past limit the range of current possibilities and/or options in institutional innovations” (Nielsen et al., 1995, p. 6). The concept of lock-in with regard to the “chreodic development” path, which explains the relevant phenomena by means of referring to quasi-institutional gene functions in an evolutionary manner, has been conscious of the evolutionary approach as represented by that of Geoffrey Hodgson. Such a link between the evolutionary approach and the path dependency concept has broadened the scope of the theories that draw on the path dependency concept. For example, the diversified capitalism theory by the regulation school has a strong tendency to draw on the path dependency concept. As Hodgson sees himself as a follower of Thorstein Veblen, the path dependency concept is an attractive concept even to the old institutional school, and they have a tendency to try to apply the path dependency concept to such subjects embedded in institutions as social networks, cultures, customs and behavioral patterns of the actors as well.

In light of the above genealogy, the following terms were adopted as keywords for our literature search: *path dependency, branching, social capital, legacy, and marketization*. The procedures for the literature extraction and survey are as follows:

1. Using EconLit’s database as our information source, a keyword search was conducted from studies that had been published in the period from January 1989 to the end of 2012. From the extracted studies (594 studies), papers were then excluded if they were obviously irrelevant to the transitional economy theory at the syllabus level. At this stage, the authors were not involved with the literature extraction, except for the above-mentioned selection of keywords. The 164 studies were extracted, among which 6 studies were excluded because they were non-English papers and published in the form of books. That process produced 158 papers to be analyzed.
2. After reading each of the above extracted studies, the authors selected studies that were considered relevant to the path dependency theory based on the premise of their contribution to transitional economy theory. The 36 studies that were judged as not worth being extracted by both authors were excluded, and ultimately 122 studies were extracted. In this paper, these are referred to as the “base extracted literature.”<sup>2</sup>
3. With regard to the base extracted literature, the following work was conducted. First, we checked the basic information about the publication, namely the nature and origin of the publication for each academic journal in which any of the base extracted literature appeared, the affiliated institutions and fields of specialization of the 191 authors in total, and the nature of each paper (theoretical / empirical). Next, this paper’s authors encoded a series of literature attributes, namely the issues discussed in each paper, the degree of support for path dependency, the relevant reasoning factors and other influential factors based on our own methodology.
4. Among the base excerpted literature, 107 studies were identified that had directly used path dependency and related concepts. In this paper, these are referred to as the “selected literature.” Based on this selected literature, we further identified base reference literature from wherever path dependency was mentioned in these selected studies. In this paper, the literature identified from these sources is referred to as the “cited literature.” Regarding the extraction of the cited literature, cited studies that were authored by the author(s) of the

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<sup>2</sup> For details concerning the base extracted literature to be analyzed in this paper, refer to the study by Mizobata and Horie (2013). In this paper, when any item from the base extracted literature is cited, “\*” will be displayed after the publication year, and it shall not be listed in this paper’s bibliography.

selected study were not counted, literature not in English was excluded, and the extractions were confined to papers that had appeared in either academic journals or books. That brought the number of cited literature items to 439<sup>3</sup>.

## 1-2. Characteristics of the Base Excerpted Literature

The total number of the authors of the basic excerpted literature (122 studies) is as many as 191. As for the attributes of these authors, about half of them belong to Western Europe-based institutions, and most of them to university institutions. By field of specialization, less than half of them specialize in economics and related fields, while quite a number of them specialize in business administration, politics, sociology or geography. Although many of the base excerpted literature citations have been published in economics and related journals, the range of publication media range is wide, including journals focused on regional research, transitional economy theory, sociology and politics. Moreover, these economics studies are not necessarily inclined towards theoretical discourses (Figure 1).

The distribution of the base excerpted literature citations by year of publication (Figure 2) reveals that the number of studies published in the 1990s was considerably fewer. Far more papers drew on the path dependency concept in the 2000s than in the 1990s, and this fact is not confined to transitional economy theory, as evidenced by another literature survey about organization theory in general (Vergne and Durand, 2010, pp. 736-737). This tendency can also be witnessed in the literature retrieved from the EconLit database by only using the keywords “path dependency” (the correlation coefficient is 0.64). Therefore, it is not abnormal that fewer papers drew on the path dependency concept in the 1990s than in the 2000s in fields related to transitional economy theory. More papers were published in the 2000s with the peak in 2006 – 2007, and it suggests that researchers have focused not on the initial stage of the transition but on the diversified transition results.

Within the list of base excerpted literature, 103 papers can be classified on the basis of specific regions and periods, and in terms of regions all transition economy countries were covered, even including China. In relative terms, early analyses are inclined to focus on the Central and Eastern European regions in keeping with the rate of transition, although this does not mean specialization on any particular region. Symbolically, two main works during the 1990s, i.e. Stark (1996) and Hausner et al. eds. (1993) paid attention to Hungary (industrial organizations) and Poland (regional development), respectively. The periods subject to analyses range over the entire structural transformation period, but to be more exact they concentrate on the 1990s, and there is a rapid reduction in studies covering subsequent periods. It can be said that empirical analyses on the subject phenomenon during the 1990s had not yet blossomed within this same decade since the course of events could only be discussed from a short-term perspective and thus in-depth studies did not fully emerge until the 2000s when the results of the transition and the degree of its completion became obvious enough to be discussed.

The level of support for the impact of path dependency forms the foundation of our analysis in this paper. The level of support is divided into the following four degrees of impact: decisively influential; crucial; due to multiple factors; and no crucial impact (Figure 3).

According to transitional economy theory, the initial structural conditions at the point of the transition to a market economy are considered to have impacted on the transition process. Such conditions include geographical factors, the presence of the EU, the operating life of

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<sup>3</sup> The empirical analysis of this paper is based on the literature review during 1989-2012. After that, we additionally examined literature during 2013-2015 (second investigation). Under the second investigation, we extracted 126 studies from EconLit's database, and 113 papers were analyzed. Base extracted literature was 40 studies. Concerning the second investigation base extracted literature, see Mizobata and Horie 2018.

communism, educational standards and industrial structures, institutional legacies, and the availability of resources (Frye, 2010, p. 15). The transition results are not necessarily restricted by these initial conditions. “A simple version of path dependence that emphasized the “lock-in” effect of initial conditions does not seem to be present in the reform outcomes in the cases at hand” (Frye, 2010, pp. 251-252). To put it plainly, path dependency is not seen as a trigger for crucial institutional formation. Frye (2010, p. 252) has even argued “that there is some evidence that countries with bad initial conditions can catch up to countries with good initial conditions over time”<sup>4</sup>. Zakaria (2013) also completely rejected the path dependent view, and insisted that the rules in the socialist system disappeared. On the other hand, some studies have argued that the very path dependency strongly impacts strategies for the institutional selection, with Hausner et al. eds. (1995) as a representative example. With regard to institutional formation, more attention tends to be paid to official institutions. However, there is no “institutional vacuum” in the transition to a market economy and “post-socialist trajectories are heavily dependent on a dense and complex institutional such that the (often invisible) remnants of previous economic and political orders still shape expectations and patterns of conduct” (p4). Instead of the determinism or the doctrine of necessity, they have regard “strategic selection” as the core concept of path dependency and have argued that its impact can be seen in any transition to a market economy.

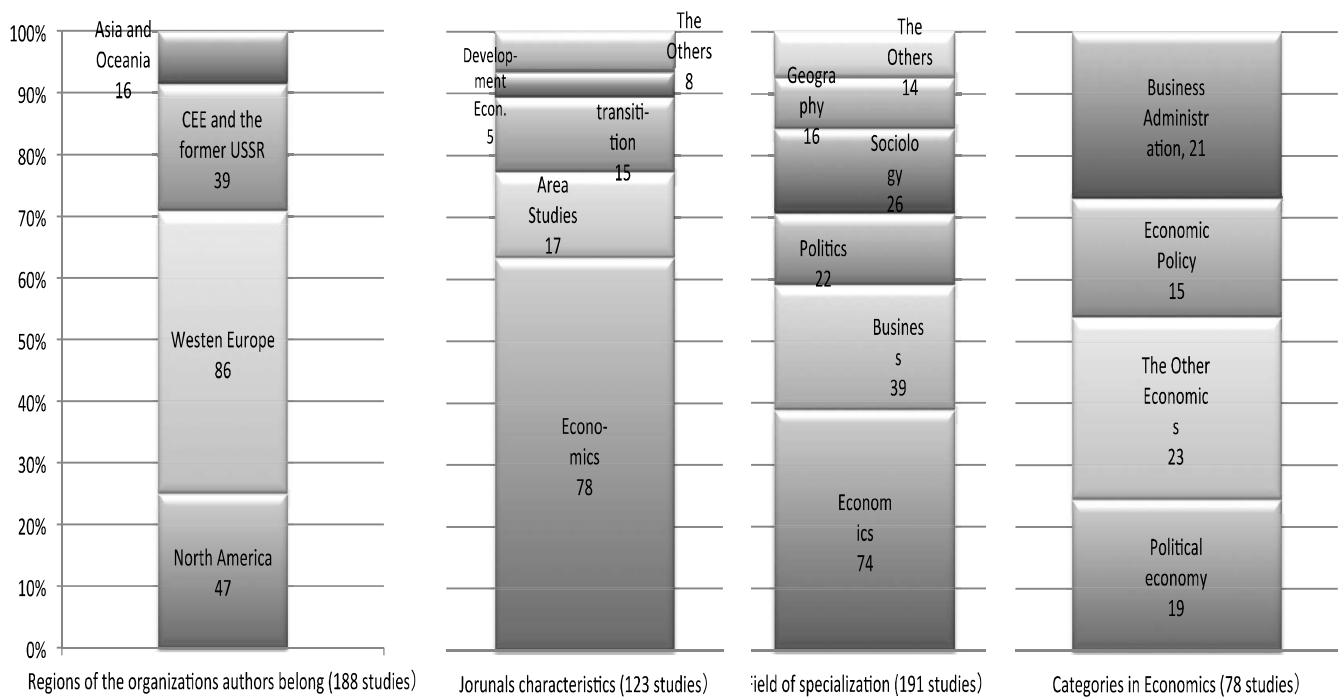
With regard to transitional economy theory, no scholar has ever completely denied historical impacts in his/her discussion. In this paper, we set the following two evaluation standards for any discussion of path dependency: One is the Frye-Zakaria standard, which does not recognize any initial condition as a critical trigger in the transition results and policy selections and thus denies any function of path dependency; the other is the Hausner standard, which considers path dependency as decisively regulating strategic selections. Based on these evaluation standards, the degree of support has been divided into four degrees of impact whose distribution shows that many papers consider path dependency as being decisively or critically influencing, which is logical given the nature of the base extracted literature. However, the distribution that includes many modest evaluations as well indicates that the evaluation of path dependency varies within transitional economy theory<sup>5</sup>.

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<sup>4</sup> Timothy Frye regards any economic disparity as a social infrastructure for political polarization and has assessed it in the context of political upheaval in a transitional society.

<sup>5</sup> This trend can be observed in the second investigation. Among 40 base extracted literature, no impact is 15%; one of the factors is 27.5%; significant impact is 35%; decisive impact is 22.5%.

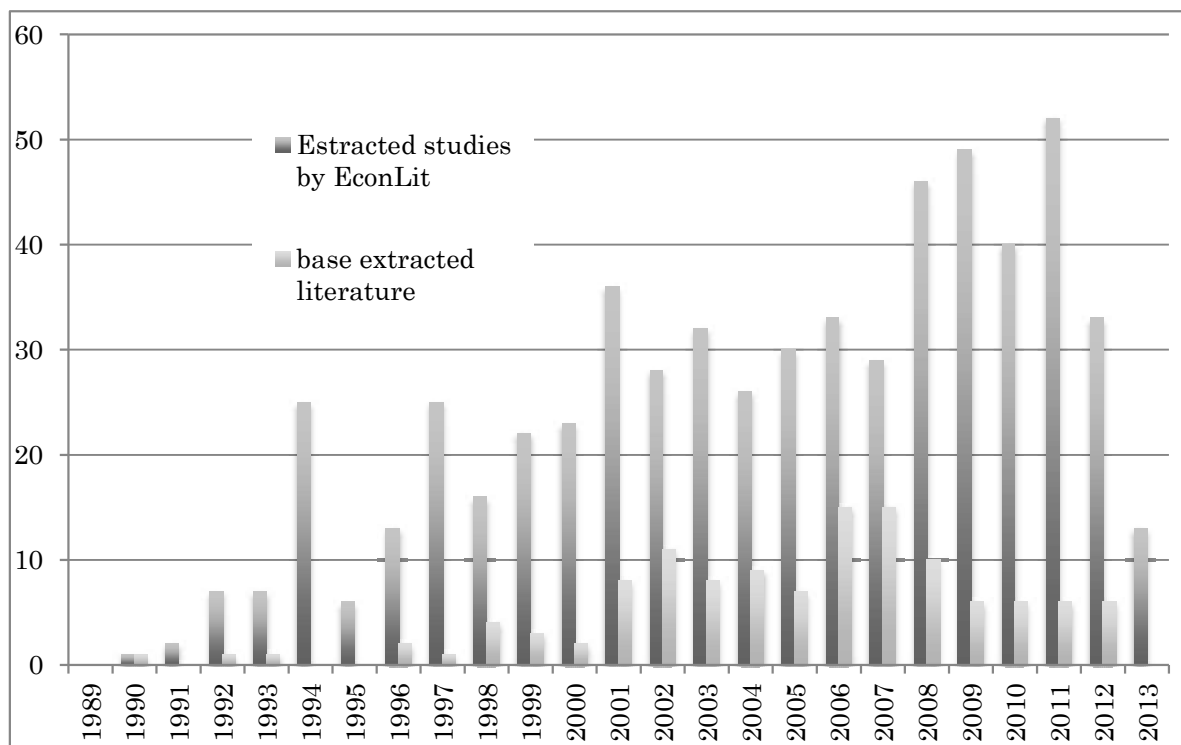
**Figure 1 Attributes of the base extracted literature**



*Note:* Figures in the above bar graphs represent the number of studies. In terms of the specialized fields of the authors, three studies belong to two fields. As for the characteristics of the journals for publication of the citations, one study has been classified into two characteristics.

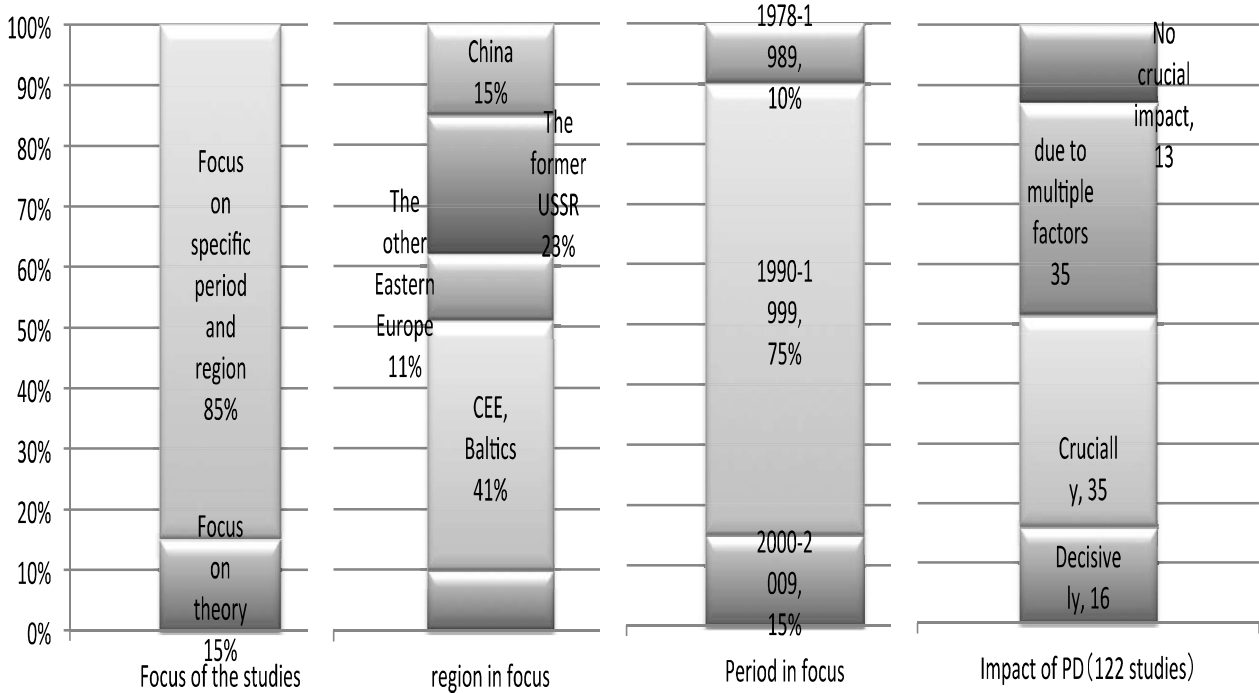
*Source:* Prepared by the authors based on the base extracted literature.

**Figure 2 Trends in the base extracted literature by publication year**



*Source:* Prepared by the authors based on the base extracted literature.

**Figure 3 Base extracted literature characteristics and the degree of support for path dependency**



Source: Prepared by the authors based on the base extracted literature.

**2. Genealogy of the Path Dependency Theory within Transitional Economy Theory**

**2-1. Positioning during the 1990s**

In the context of transitional economy theory, which paper is the first to have paid attention to path dependency? Among the base extracted literature citations, Roland (1990\*) is the oldest. As pointed out by Gérald Roland himself, this paper cannot be said to have persuasively examined institutional changes that should be at the center of path dependency because Perestroika itself was not considered to be a process toward any drastic institutional change (Roland, 1990\*, p. 406).

Nee (1992\*) comes next after Roland. This paper describes how Chinese enterprises under privatization reduced transaction costs through strong bonds with local governments and created various paths toward a market economy under the overall partial transition to a market economy in China, and regarded this phenomenon as a hybrid-type market economy, suggesting path dependency. Among the base extracted literature, this paper is the first one to have clearly mentioned path dependency, but it did not regard this concept as the main analytical concept.

Among studies that were published around 1990 – 1992 and that have not been included in the base extracted literature, the authors have highlighted Peter Murrell’s research outcome that argued for gradualism to counteract radical reformists. Murrell criticized radical reformist policies with regard to the transition to a market economy and since then has been advocating evolutionary policies from a scholar’s point of view (Murrell, 1990). In 1991, a feature article he wrote on the transitional economy was published in the *Journal of Economic Perspectives*. This article suggested that there would be various paths toward a market economy in the same



way as there were various paths toward social and other reforms (Murrell, 1991, p. 7). And yet there was no attention paid to path dependency.

In contrast to Roland's and Murrell's ambiguous approach to path dependency, the study by Stark (1992) on transitional economies can be considered as an original source that consciously applied the path dependency concept. David Stark pointed out the differences in privatization strategies between East Germany, the Czech Republic, Poland and Hungary on the basis of both privatization assets (ownership) in the implementation of privatization and resources (social status and financial assets) owned by actors (individuals and corporations) who tried to acquire the former assets. In light of these four distinctive paths<sup>6</sup> at the time of the departure from state socialism, he denied the existence of the institutional vacuum state, and argued that privatization policies that had been decided in different political situations subsequently created various paths.

In 1991, David Stark, together with Laszlo Bruszt, compared Hungary's democratization with that of Poland (Bruszt and Stark, 1991). Their concept, which regards the path toward a market economy as being shaped by the initial selection of political institutions, is exactly the approach of path dependency. Yet this paper does not mention the path dependency concept. In this regard, however, their arguments were then based on a working draft and subsequently the study by Karl and Schmitter (1991), which discussed the transition of political systems both in Latin America and in Southeast Europe, mentioned path dependency (p. 270). The idea that different transition modes will create different path-dependency-based results is shared by Karl and Schmitter (1991), Bruszt and Stark (1991), and Stark (1992) as a fundamental proposition. This means that Stark himself clearly realized the effectiveness of using the path dependency concept in the time between the publication of Bruszt and Stark (1991) and that of Stark (1992), which marked a turning point for him to apply this concept in a proactive manner. Stark (1992) became a cornerstone of the subsequent path dependency arguments of economics of transition, and following papers such as Stark (1995), Stark (1996), Stark and Bruszt (1998) had high level citation index. Above all, Stark (1996) has high citations next to North (1990).

Hausner et al eds. (1993; 1995) can be cited as one of the post-Stark (1992) studies that have developed the path dependency concept in earnest. In this regard, however, the study by Hausner et al. eds. (1993) did not mention the path dependency concept, although this paper discussed how the institutional framework for the market economy was formed and converted in Poland. Among Hausner's collaborative papers, Wojtyna and Hausner (1993\*), which was published in the time interval between the above-mentioned two studies, is the first one that mentioned the path dependency concept. This paper is based on path dependency arguments discussed in the paper by Stark (1992). Thereafter, in the study by Hausner et al. eds. (1995), these arguments have discussed path dependency as their main subject.

At the early stage of structural transformation / transition to a market economy from 1989 to 1991, the early arguments, including Murrell's and those of Bruszt and Stark, faced off against the convergence theory on the transition to a market economy, which is assumed to be under the control of radical reformists, in that they argued for the diversity of transitional paths. However, this face-off did not directly lead to the utilization of the path dependency concept. As can be understood from the above description, it was eventually in the 1990s that the path dependency concept started to be utilized as part of arguments to explain various paths toward a market economy, with Stark (1992) and Hausner et al. eds. (1995) being among the trailblazing studies. However, policy decisions at the time did not reflect arguments about how radical policy selection would determine any particular path from the viewpoint of institutional theory, or arguments about how past institutional designs would affect any new institutional design for a market economy, and others. After implementing the shock therapy, the radical

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<sup>6</sup> They are East Germany's reunification with West Germany, the fall of the communist government in the Czech Republic, the compromise between the communist party and the reformists in Poland, and the election-based competition in Hungary.

reform measures had been criticized, and it is natural that there was a time lag between criticism and introduction of the neo-institutional approaches. As for the reason for this, some critics have pointed out that it was too late for the arrival of the institutional theory represented by Douglas North to impact the transition to a market economy (Nutti, 2013, p. 53).

## **2-2. Theoretical Rationale seen in the Selected Papers**

When any of the base extracted literature applies the path dependency concept, what kind of theoretical rationale does it draw on? This sub-section focuses on the rationale of applying path dependency and its variability, instead of the theoretical backgrounds of the individual authors, and intends to examine the relationship to peripheral theories. Let us consider the 439 studies of the cited literature. Frequently cited authors have been grouped by period of publication and then have been classified theoretically (Table 1). The classification here is neither based on thoughts / theories of the authors of original texts nor based on theories of the original texts themselves, but is based on each theoretical element intended by a given study among the selected literature when it is cited in an original text.

During the period until 1979, nine studies cited Veblen's papers or works. Cited studies of which the respective publication years are 1979 or before are mainly related to the old institutional economics since it can be seen that these citing authors tend to criticize the new institutional economics by retrospectively basing their arguments on Friedrich Hayek and Ronald H. Coase, etc. and argue for the significance of the old institutional economics. For example, Ibrahim and Galt (2002\*) criticized that New institutionalists such as Coase, Williamson, North and others understand institutions as a result of rational human behavior and organization as "a passive or adaptive organization" (Ibrahim and Galt, 2002\*, p.107) for cost reduction through markets, and they emphasized institutions from the angle of socio-economic context. Institutions may be considered as socially embedded in society (Lane, 2002, p.9). Ibrahim and Galt insisted "replacing one institutional form with another, which does not take into account the habits of individuals, is not likely to be successful, at least in the short run. In the longer run, new habits will evolve as adjustments are made to changing circumstances through a learning and search process" (Ibrahim and Galt, 2002\*, p.107) based on the representative literature of evolutionist approach, Nelson and Winter (1982). In short, they focused path dependency from the old institutional economics even in the former socialist marketization analysis. Acceptance of new institutions starts from the existing regime (previous circumstances), and without transformation of the existing regime, there exists a gap between new institutions and old institutions, which caused social problems. It is important to observe the social acceptance and transformative process of new institutions based on the existing institutions. Distrust toward the image of human beings on which the new institutional economics are premised and the focus on the individual customs or customary attributes of institutions are common to Ibrahim and Galt (2002\*), Lichtenstein (1996\*), Poirot (2002\*), Oleinik (2006\*), Klimina (2008\*), and Tridico (2007\*), etc. Karl Polanyi was also cited during the period up to 1979. Most of the citing authors have referred to Polanyi (1944) as well as Granovetter (1985) for the point of argument of the "embeddedness" of the behavior of economic entities in institutions and/or social networks.

### **Table 1 Characteristics of the major cited literature**

Period of literature publication	Study authors	Theoretical characteristics	
– 1979	Veblen, T.	Rationale of the old institutional economics	
	Weber, M.		
	Polanyi, K.	“Embeddedness” and “Social networks”	
	Hayek, F.	Drawing on or criticizing the grassroots of the new institutional economics	
	Coase, R.		
	Williamson, O.		
1980 – 1991	David, P.	Rationale of path dependency	
	North, D.		
	Granovetter, M.	“Embeddedness” and “Social networks”	
1992 and after	Murrell, P.	Evolutionary approach	Study on economics of transition
	Stark, D.	Path dependency	
	Stark, D. and Bruszt, L.		
	Hausner, J., Jessop, B. and Nielsen, K.		
	Pickles, J. and Smith, A.		
	Arthur, B.	Rationale of path dependency	
	North, D.		
	Denzau, A. and North, D.		
	Roland, G.	Institutional understanding	
	Putnam, R.	Social Capital	

Source: Prepared by the authors based on the selected literature.

Among the studies for which the respective publication years are before 1991, those cited as providing the rationale for path dependency have concentrated on David (1985) and North, D (1990). With regard to Paul David, three studies by David (1986; 1997; 2001) have also been cited in addition to David (1985). Similarly, studies by Brian Arthur, who developed the path dependency concept based on his observation of the significant role that the effect of increasing returns has in the evolution of economic systems, are also included in the cited literature (Arthur, 1988; 1989; 1990; 1994). Meanwhile, unlike David (1985) and Arthur (1988), both of which represent the grassroots of the path dependency concept, studies by Douglas North have been cited not only as providing a rationale for path dependency, but also as a source of peripheral concepts such as the lock-in concept and even as a subject of criticism in relation to the new institutional economics. In terms of the frequency of literature citations by publication year, there were an outstandingly high number of citations in 1990 largely due to the number of citations of North, D (1990) (27 studies among the 107 studies of the selected literature)<sup>7</sup>.

David Stark’s papers and works had an overwhelming impact. Among the selected literature, 37 studies (the actual number on the basis of the exclusion of duplications), which account for more than one third of the entire selected literature citations, have cited Stark’s studies including his joint writings.

Citations of Stark’s writings do not always express support. For example, the study by Beyer

<sup>7</sup> The second investigation indicates an increase of literature citation over social capital and social networks: Putnam (1993, 2000); Bourdieu (1986).

and Wielgohs (2001\*) criticized Stark (1992) and denied its significance in the following argument. Theoretically, the path dependency concept does not create anything new, and new institutions will show a movement towards convergence rather than diversification. Their criticism clearly pointed out the following. The path dependency approach, which argues that a new path is formed by utilizing existing resources, is confined to policy decisions at the early stage of the transition to a market economy; this early policy selection would not have such a long-lasting impact as predicted by the policy dependency theory; and the very adaptation to the transition to a market economy in the context of the path dependency concept does not link to the issue of increasing returns.

Burawoy (2001) has also criticized the study by Stark and Bruzst (1998). In his study, Michael Burawoy criticized their stereotypical interpretation of past structures and asserted that no combination of ownerships has succeeded in explaining economic and political consequences no matter how greatly such combinations vary. From his point of view, the demise of the old regime was selected as the origin for their analyses in an overly arbitrary manner in order to explain the path dependency of transitional countries, and thus he regarded path dependency as based on origin driven analyses (Burawoy, 2001, p. 1103).<sup>8</sup>

If initial policy selection and its long-term impact are more limited than the levels presented by path dependency arguments (Beyer and Wielgohs, 2001\*, p. 386), and especially if privatization is a short-term phenomenon, path dependency cannot even become a matter for discussion. In addition to the traditional criticism towards historical determinism, if varieties of capitalism and varieties of institutionalism result in the convergence of various systems in accordance with globalization, such a consequence would also support the criticism of path dependency. The theoretical rationale for path dependency might then simultaneously turn into restrictions on its effectiveness.

### **3. Degree of Support for Path Dependency and Empirical Analysis**

#### **3-1. Impact of Path Dependency**

The base extracted literature describes the impact of path dependency in transitional economies as follows:

Firstly, the degree of support for path dependency has declined during the decade since 2000. Studies that argue against its impact have appeared largely since 2006, and this corresponds to the period when institutions began to show a tendency towards convergence in the wake of the EU's expansion into Eastern Europe and when transitional countries entered their period of economic growth. The following view has had more impact. This is the view that it is the convergence on the basis of the EU standards that lies behind the foundation of institutional formation and economic growth has been eliminating post-transitional differences. According to views arguing against this impact (16 studies), it has been argued that political factors and external factors such as multinational enterprises and the EU have indeed worked very well, not to mention the policies. "Powerful external forces...the overwhelming influence of IFIs, TNCs, and the EU on the emerging new order" (Bohle and Greskovits, 2012, p. 55) could not be ignored especially in the small European countries. The number of papers on path dependency has increased in tandem with the rise in the number of opponents of the path dependency concept who have stressed external factors as well as politics.

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<sup>8</sup> Stark and Bruzst (2001, p. 1132) has criticized Burawoy as fatalistic, while maintaining the path dependency concept.

Secondly, the scope of path dependency arguments covers all transition economies, and yet path dependency has been, in relative terms, strongly supported in Russia as well as the Southeast European region where accession to the EU has been delayed in comparison to other regions in the Eastern Bloc. This suggests that Europeanization has not necessarily spread among Eastern European countries in a uniform manner. On the other hand, a unique development path has been formed in China (Zhang and Sun, 2012\*), and yet path dependency in the transition to a market economy has not necessarily occupied a decisive place in Asia due to the view regarding the flying geese model of development, the presence of strong states, and the presence of multinational enterprises, etc.

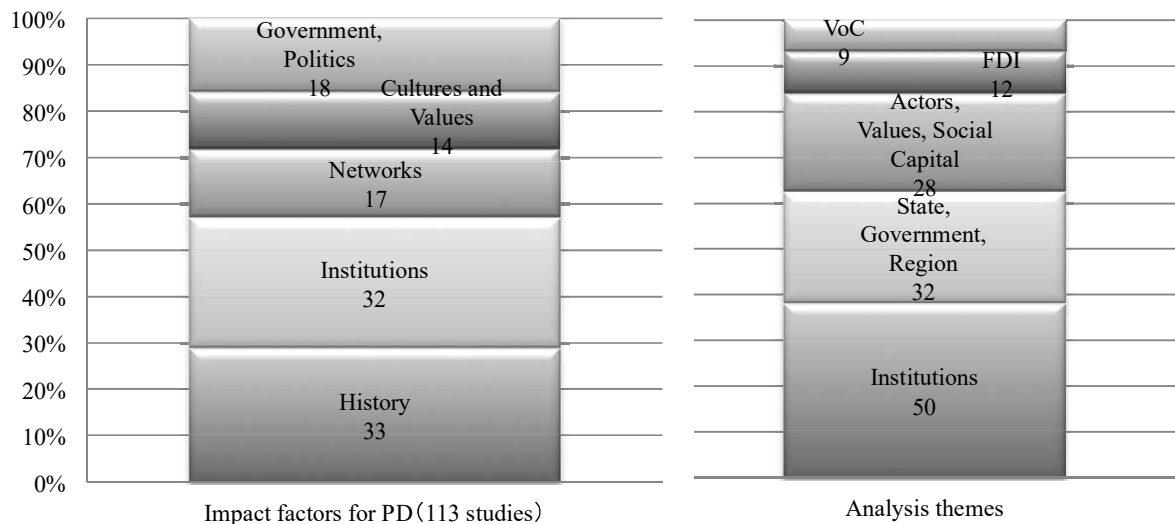
Thirdly, based on study themes, path dependency has been, in relative terms, strongly supported in studies on institutions, regionalism and local identity. In particular, we can say that the study themes have tilted toward institutions (Figure 4).<sup>9</sup> This is attributed not only to the fact that institutions after the transition have not converged on Western-type ones, but also to the fact that mutually adverse markets have been constructed both among transitional countries and among regions within transitional countries. Above all, in cases where a multinational enterprise has selected a given region for it to enter or in cases where the formation of an industrial cluster has been observed in a specific region, it is logical to conclude that unique historical conditions have drawn its attention. Moreover, there is another approach in which path dependency is supposed to be an explanatory factor for the “mutation” of a formed market. Stark (1996) and Stark and Brustz (1998) can be considered prime examples of this and have thus had a substantial impact on later studies. As for localities and networks in localities, they have not been alternated with globalization, and have gained in significance.

Fourthly, the degree of support for path dependency depends neither on the institutional affiliations of the author(s) nor on whether or not a single country has been analyzed. With regard to the study publication media, path dependency has been mentioned not only in economics journals, but also in a wide variety of media, including academic journals on transitional theory and on regional studies. This indicates that the emphasis that researchers place on path dependency is motivated by their interest in market systems and structures and their investigations into the cause of regional disparities.

#### **Figure 4 Impact factors for path dependency and the analysis themes**

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<sup>9</sup> In this paper, we have classified study themes into the following nine fields: Agent and elite, official institution, non-official institution, nation and politics, culture / value / ethics, social capital network, region and local identity, FDI determinants and foreign trade, and variety of capitalism.



*Note:* Figures in the above bar graphs represent the number of studies. In terms of strong impact factors for path dependency, nine studies out of the 113 studies have cited no factors while one study has cited two factors. This makes the gross number of studies 114. In terms of analysis themes, seven studies analyzed multiple themes, making the gross number of studies 129.

*Source:* Prepared by the authors based on the base extracted literature.

### 3-2. Regression Analysis on Path Dependency

This sub-section will present our meta-analysis on the base extracted literature and on the selected literature.<sup>10</sup> As a dependent variable in this analysis, we used the results of the four-stage evaluation on the path dependency effect that is identified to the degree of support for path dependency in each of the base extracted literature. Vis-a-vis this evaluation, the following were selected as independent variables: publication year, location of each author's affiliated institution, researched region, characteristics of each paper (study type), study themes, evaluations on socialism and economic systems / legacy before socialism, economic dependency mechanism, publication journal type, authors of studies that have served as the rationale for the path dependency concept among the cited literature. Based on this setting, let us confirm to what extent our analyses described above can be statistically verified.

For the sake of this analysis, we have prepared a cross reference table (Table 2) in order to examine the correlation between the study evaluation on the path dependency effect and the literature attributes. Table 2 also shows the results of an independence test, which examines the null-hypothesis that the study evaluation on the path dependency effect and the literature attribute in question are independent from each other, and the computation results for Cramer's V, which measures the strength of the association of the two. As seen in the table, a statistically significant correlation has been recognized between the evaluation on the path dependency effect and the series of literature attributes that consist of the publication year, researched region / country, study type, and dealing with the path dependency mechanism. Moreover, the computation results of Cramer's V for the three literature attributes excluding the researched region / country have respectively exceeded 0.30, revealing quite a high degree of association as well.

Next, a multiple linear regression analysis was conducted by means of a bivariate ordered

<sup>10</sup> Our meta-analysis in this sub-section completely depends on suggestions and advice from Prof. Ichiro Iwasaki. Here in this writing, we would like to thank him for his great help in everything, including repeated cumbersome analytical work. This regression analysis is based on the original literature survey (122 base extracted literature) and we omit literature because the literature changes its focus to social capital strongly.

probit estimator in order to examine whether or not each literature attribute is correlated with the evaluation on the path dependency effect with statistical significance even if the remaining attributes are simultaneously controlled. Table 3 lists the descriptive statistics of variables used in the bivariate ordered probit model estimation and the correlation coefficients of the evaluation on the path dependency effect as the dependent variable and each independent variable. The dependent variable is an ordered variable in which the value ranges from 0 (no impact) to 3 (decisively influential), with its average being 1.55 and its median being 2. All dependent variables are binary dummy variables, except for the publication year and the influential variable for legacy where a score of -1 is assigned to studies that have regarded the impact of legacy in the past as negative, a score of 0 is assigned to those that have regarded the impact as neutral and a score of 1 is assigned to those that have regarded the impact as positive. As seen from the rightmost column in Table 3, among these 56 independent variables, the publication year and other 14 variables are correlated with the dependent variable with statistical significance.

The estimation results are shown in Table 4. For the purpose of computing standard errors, we have adopted White's heteroskedasticity-consistent estimator, which ensures consistency even under dispersion heterogeneity. We can point out the following in light of a positive or negative sign of each independent variable that has been estimated at the 10% or lower level of significance: (1) When other conditions remain the same, the earlier the publication year of the study in question, the more conservative its evaluation of path dependency. (2) Authors who belong to Western Europe-based research and education institutions, Western European government agencies or international institutions are more likely to publish studies that stress the path dependency effect than authors who belong to institutions located in regions other than Western Europe. Conversely, researchers who belong to institutions located in Central and Eastern Europe or in the former republics of the Soviet Union have a higher probability of publishing studies that do not recognize any significant effect. (3) Studies on East Germany have a strong tendency to give a negative evaluation regarding the path dependency effect than studies that discuss other regions or countries. (4) Compared to empirical research, theoretical research consists of more studies that do not stress path dependency. (5) Differences in study themes have a great impact on the path dependency effect. In fact, studies that focused on "official institutions," "non-official institutions," or "region and local identity" as their study theme have an obviously stronger tendency to stress the significance of path dependency in the process toward a market economy, compared to studies that have discussed any other study theme. (6) No matter what the content is, studies that mention any path dependency mechanism have a tendency to reach a conclusion that attaches great importance to the path dependency effect, and (7) Authors who seek a theoretical rationale in studies on evolutionary economics by Bernard Chavance and Geoffrey Hodgson, etc., or studies on social network theory by Mark Granovetter are more likely to give a high evaluation regarding the significance of the path dependency effect. Meanwhile, authors who draw on the path dependency theory in technological changes as represented by Paul A. David or comparative politics as represented by Kathleen Thelen are more likely to downplay the path dependency effect.

In contrast to the discovery of the above facts, according to the estimation results as shown in Table 4, each author's institutional affiliation type, whether the study in question is an across-country type or a single-country type, evaluation of the impact of legacy in the past, and differences in the publication journal type have no statistically significant impact on the evaluation of the path dependency effect. Among these non-significant variables, the estimation results for the publication journal type are especially interesting as these indicate that no strong "publication bias" exists when studies on path dependency are published.

The empirical analysis has largely supported our analyses described above, but some empirical results have defied our predictions. Firstly, authors who reside in a transitional

country are intrinsically expected to stress the unique path of that transitional country, but it turned out they do not stress path dependency. Secondly, no significant correlation was found between studies that cite David Stark, who has led the path dependency theory within transitional economy theory, and the path dependency effect, and thus the citation of any of Stark's papers itself has not led to either strong support for path dependency or criticism against it.

In light of these statistically-derived results, the following can be pointed out. Firstly, the path dependency effect differs depending on the study themes, and the path dependency remains an important point at issue concerning the whole concept and roles of institutions in transitional economies, including those of both official and non-official institutions. Secondly, questions tend to arise more readily as time goes by.

## **4. Evolution of Path Dependency Theory**

### **4-1 History matters or current changes matter?**

Looking over the base extracted literature reveals that no study regards path dependency as rough and ready historical determinism. No matter what the evaluation of path dependency concludes, the central axis shared by all relevant studies is a cautious view of both the perspective that unilinear/single models provide in the transition to a market economy and the approach in which policies alone are considered to define the results with no consideration of the past. In this regard, path dependency has demonstrated the following facts: Past institutions have become a constraining factor for decision makers to make selections and develop strategies and that significant impact factors include the whole concept of institutional change and the composition of the actors involved along with the policies and external factors.

Studies that did not argue for path dependency have not linked the initial conditions in resources and/or history to economic growth and/or any institutional change even if they have accepted the existence of such conditions. In this regard, however, a more careful analysis reveals that both the path formation approach (Drahokoupil, 2007\*) and the path contingency approach (Gould and Sickner, 2008\*) are relevant to path dependency theory. According to Nielsen, et al. eds. (1995, pp. 5-8), the path formation approach makes an issue of "the present matters (present changes)," and this means that the actors themselves redesign "the stage" where they act and reconstruct the rules of the game within the scope of historically-given specific constraints. Therefore, there are constraints on the voluntaristic/creationistic approach to institutional design to which neo-libertarians aspire. Recognized evidence testifies that "history matters", but if we agree to the statement that says "the present also matters" within the scope of historical actions, instead of sticking to these actions it can be said that there are only a limited number of studies that completely deny path dependency.

In the context of the massive institutional changes that occur in a transitional economy, the path dependency theory should be neither overvalued nor undervalued, and appropriate positioning is required for the theory to be used in time and space (Labrousse, 2002\*, p. 165) and selective usage platforms (Pavlinek, 2002\*, p. 1704) are important in order to avoid historical determinism, among other reasons.

### **4-2 Evolution of Path dependency approach**

Incidentally, the transition to a market economy is characterized by the official institutions and



rules of post-socialism systems and their respective degrees of formation. One of the counter propositions against a unilinear viewpoint is the perspective by Stark (1992) in which privatization has been considered as being able to be recombined through the extension of past institutions. Besides, the evolutionary approach as adopted in Murrell (1995, p. 175) and the study by Aoki and Kim (1995), which has brought transitional countries under review on the basis of their comparative institutional analysis, discussed their respective subjects from the same angle. Despite their different viewpoints on the forces applied to institutions by policies, it would not be an exaggeration to say that all the economists mentioned above focused their attention on institutions.

With regard to institutions, non-official institutions have become an indispensable part of the institutional landscape, and the study by Neef and Stanculescu eds. (2002) has empirically analyzed the informal sector in East European countries. They have regarded the “ground rules” of everyday life as the “reservoirs of knowledge people had to acquire and to internalize to master their lives in a new system” (p. 91) and the reservoir is nothing short of what “developed a reservoir of behaviours as part of their ‘socialistic habits’ to counter the overpowering influence of the totalitarian state” (p. 91). This kind of reservoir has promoted the transition to a market economy in the context of structural transformation, but it has also become an adverse element of resistance in the transition to a market economy by turning into a means of survival in the transition to a market economy and even into criminal action. The degree to which the non-official sector can reproduce itself is higher in regions where institutional construction has been delayed or distorted.

However, the effectiveness of the path dependency theory has begun to be viewed with suspicion amid progress in marketization, especially amidst globalization and European unionization, and furthermore in the period of economic growth in emerging transitional countries during the 2000s. The world economic crisis in particular stresses the homogeneity of institutions, as the crisis occurred through a chain reaction among economic institutions in every country. Nevertheless, this lower degree of support does not mean the extinction of the path dependency theory itself. Throughout his studies on Central and Eastern Europe, David Stark has regarded recombination as organizational innovation that can be examined as reconfiguration of institutional elements “in the patterns of how these orders are interwoven (Stark, 2009, p.xv).

These encounters with transitional economy theory have led the path dependency theory to evolve by itself. The term transitional economies not only refers to institutional changes toward a market-based society and democracy, but also includes their actors and their values. Accordingly, path dependency is also compelled to stress not only institutions and customs, but also the relevant actors, their behavior and networks. Moreover, path dependency is closely linked to diversified capitalism theory via the diversity of formed institutions. In addition to the fact that the existing advanced market economy that has is supposed to have been the goal is now understood in various ways, path dependency presents diversity within the transitional economy. Therefore, it can be said that path dependency theory has expanded its scope from its initial positioning as being a limited tool for analyzing institutional changes.

## **Conclusion**

In the context of transitional economy theory, which is said to be a study area that is inherently

constrained by the times, path dependency and its related concepts have been gradually refined as tools to explain institutional formations and institutional changes. Needless to say, the most influential economist in this field is Douglas North, a Nobel Prize-winning scholar, and his considerable impact can be clearly seen in the number of citations of his studies. In a sense that institutions matter, other economists such as Ronald H. Coase and Joseph E. Stiglitz have also been doing outstanding work, more than complementing the studies by North, D. Furthermore, the extent to which studies by Weber, Veblen and the like are retrospectively cited with the focus on institutions and behavior suggests that these sorts of arguments may contribute to the history of ideas.

However, as long as our attention is confined to the theory of transition economies as the platform for discussion, this paper places a premium on David Stark as the consensus of the base extracted literature. Not only the frequency of citations, but also the depth of the arguments, namely the scale of support and criticism, indicate that Stark is well deserved to be positioned as a supporting pillar of the path dependency theory. His studies represent accomplishments that are sufficient to make researchers who specialize in the periods before and after the collapse of socialism feel like sharing their contemporaneity. Although David Stark has been criticized as a historical determinist, he has retorted to this by looking for any vital organization under a capitalistic system. This means that he has treated Hungary as an example from which he has been seeking organizational principles for surviving on the basis of the strength of diversity. This stance he holds can be positioned as model “graduation” from transition economy theory, in contrast to Janos Kornai, who has strictly stuck to transition economy theory and tried to expand its scope from China to Vietnam and North Korea.

The cumulative effect and extent of Stark’s insights indicate that the path dependency theory has been shown to be precisely applicable in Hungary, since this country took the lead in economic reform theory, and this indication thus has special meaning. Kornai, who has proved that the basis for the malfunctioning of socialist economic systems is soft budget constraints, has also paid attention to economic institutions and their sense of values. In this way, Kornai’s approach has been overtaken by Stark as well (Stark, 2009). Hungary as a country that strived on a massive scale to seek market socialism and economic reforms has not only formed a foundation for Stark (2009) to study, but has also been at the leading edge of the EU’s expansion into Eastern Europe, while at the same time maintaining its institutional distance from EU core countries. Nonetheless, it is also different from other East European countries. It can be considered that the unique positioning of Hungary<sup>11</sup> has kept path dependency from falling into the historical determinism and has led to institutional studies being conducted.

In the context of empirical studies, the proof of the strength of the path dependency theory seems to be considered to be on the decline. Paradoxical as it may seem, the arguments and the study developments themselves have presented a process that is sufficient to be called path-dependent.

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<sup>11</sup> The study by Bohle and Greskovitz (2012) has discussed the diversification of capitalism in peripheral countries in Europe.

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Table 2: Cross table analysis of the study evaluation on the path dependency effect and the literature attributes

Literature attributes	Study evaluation on the path dependency effect				Total	Statistical test <sup>1)</sup>
	No impact (16 studies)	One of the factors (43 studies)	Significant impact (43 studies)	Decisive impact (20 studies)		
<b>(a) Publication year</b>						
1990	0	0	1	0	1	
1992	0	0	1	0	1	
1993	0	0	0	1	1	
1996	0	0	2	0	2	
1998	0	0	3	0	3	
1997	0	0	0	1	1	
1998	0	0	0	1	1	
1999	0	2	0	1	3	
2000	0	1	1	1	3	
2001	1	3	3	0	7	
2002	0	1	5	5	11	
2003	0	2	5	1	8	
2004	0	4	5	0	9	
2005	0	2	4	1	7	
2006	3	7	3	2	15	
2007	3	8	3	1	15	
2008	3	3	2	2	10	
2009	0	4	1	1	6	
2010	1	3	2	0	6	
2011	4	1	1	0	6	
2012	1	2	1	2	6	6 Independence test ( $\chi^2$ )
Total	16	43	43	20	122	Cramer's V 0.474
<b>(b) Author's affiliated institution type <sup>2)</sup></b>						
University	15	35	42	15	107	
Research institution	1	9	3	5	18	
International institution / government agency	1	3	1	1	6	6 Independence test ( $\chi^2$ )
Total	17	47	46	21	131	Cramer's V 0.166
<b>(c) Location of each author's affiliated institution <sup>2)</sup></b>						
North America-based institution	3	12	15	4	34	
Western Europe-based institution	8	17	22	14	61	
Central and Eastern Europe-based or former republics of the Soviet Union-based institution	5	15	6	4	30	
Asia-Oceania-based institution	2	4	5	0	11	11 Independence test ( $\chi^2$ )
Total	18	48	48	22	136	Cramer's V 0.163
<b>(d) Researched region / country <sup>3)</sup></b>						
Research on East Germany	0	1	0	1	2	
Research on EU member countries in Central and Eastern Europe	5	17	11	9	42	
Research on non-EU member countries in Central and Eastern Europe	3	5	9	2	19	
Research on Russia	0	8	6	6	20	
Research on former republics of the Soviet Union (excluding Russia)	1	3	1	2	7	
Research on China	1	8	10	0	19	
General research on transition economies	8	7	12	2	29	29 Independence test ( $\chi^2$ )
Total	18	49	49	22	138	Cramer's V 0.254
<b>(e) Across-countries type or single-country type</b>						
Across-countries-type study	12	20	22	7	61	
Single-country-type study	4	23	21	13	61	61 Independence test ( $\chi^2$ )
Total	16	43	43	20	122	Cramer's V 0.222
<b>(f) Study type</b>						
Theoretical study	5	3	10	0	18	
Empirical study	11	40	33	20	104	104 Independence test ( $\chi^2$ )
Total	16	43	43	20	122	Cramer's V 0.307

(Continuing)

(Table A continued)

Literature attributes	Study evaluation on the path dependency effect				Total	Statistical test <sup>1)</sup>	
	No impact (16 studies)	One of the factors (43 studies)	Significant impact (43 studies)	Decisive impact (20 studies)			
<b>(g) Study theme<sup>3)</sup></b>							
Agent and elite	1	2	4	1	8		
Official institution	6	11	14	12	43		
Non-official institution	0	0	4	3	7		
Nation and politics	2	7	7	1	17		
Culture / values / ethics	1	7	2	1	11		
Social capital network	1	3	4	1	9		
Region and local identity	2	5	5	3	15		
FDI determinants and foreign trade	1	7	3	1	12		
Variety of capitalism	3	1	3	0	7	Independence test ( $\chi^2$ )	27.926
Total	17	43	46	23	129	Cramer's V	0.269
<b>(h) Impact of legacy</b>							
Positive	1	4	5	4	14		
Neutral	6	24	16	5	51		
Negative	9	15	22	11	57	Independence test ( $\chi^2$ )	7.559
Total	16	43	43	20	122	Cramer's V	0.176
<b>(i) Path dependency mechanism<sup>3)</sup></b>							
Economic mechanism	4	19	20	8	51		
Political mechanism	2	6	9	3	20		
Cultural mechanism	2	15	8	9	34		
System logic	1	3	5	1	10		
Not mentioned	7	0	1	0	8	Independence test ( $\chi^2$ )	48.047 ***
Total	16	43	43	21	123	Cramer's V	0.361
<b>(j) Publication journal type</b>							
Political economics	6	6	5	2	19		
Economics (and the like)	3	9	6	5	23		
Economic policies and related	2	4	7	2	15		
Business / management	1	7	9	4	21		
Regional research	3	5	6	3	17		
Transitional theory	0	8	3	4	15		
Development theory	0	2	3	0	5		
Others	1	2	4	0	7	Independence test ( $\chi^2$ )	19.750
Total	16	43	43	20	122	Cramer's V	0.232
<b>(k) Cited authors<sup>4)</sup></b>							
Arthur	1	1	4	2	8		
Campbell	0	0	1	0	1		
Chavance	0	0	1	1	2		
Coase	0	1	3	1	5		
David	1	1	2	2	6		
Granovetter	0	2	3	3	8		
Hausner	2	5	5	3	15		
Hayek	0	1	4	1	6		
Hodgson	0	0	2	3	5		
Murrell	0	2	4	1	7		
Nelsonandwinter	0	0	3	1	4		
North	3	12	11	8	34		
Pierson	3	1	1	0	5		
Polanyi	0	1	3	2	6		
Roland	0	2	2	2	6		
Scott	0	1	2	1	4		
Smith	1	0	3	1	5		
Stark	4	5	14	9	32		
Thelen	2	1	0	0	3		
Veblen	0	1	0	4	5		
Weber	0	0	1	0	1		
Williamson	0	2	4	2	8	Independence test ( $\chi^2$ )	63.420
Total	17	39	73	47	176	Cramer's V	0.347

Notes:

1. With respect to the results of the independence test, \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.
2. Multiple coding in response to the composition of the authors.
3. Multiple coding in response to the contexts of the studies.
4. Multiple coding in response to the contexts of the relevant citing literature.

Table 3: Descriptive statistics of the variables used in the ordered probit regression analysis and the correlation between the dependent variable and of each independent variable

Name of Variable	Mean	Standard deviation	Medium	Maximum	Minimum	Correlation coefficient with the dependent variable
Four-stage evaluation on the path dependency effect (dependent variable)	1.549	0.919	2	3	0	1.000
Publication year	2005.134	4.305	2006	2012	1990	-0.355 ***
Research institution	0.148	0.356	0	1	0	0.053
International institution/ government agency	0.049	0.217	0	1	0	-0.054
Western Europe-based institution	0.500	0.502	0.5	1	0	0.152 *
Central and East European-based or former republics of the Soviet Union-based institution	0.246	0.432	0	1	0	-0.156 *
Asia-Oceania-based institution	0.090	0.288	0	1	0	-0.095
Research on Germany	0.016	0.128	0	1	0	0.064
Research on EU member countries in Central and Eastern Europe	0.344	0.477	0	1	0	0.018
Research on non-EU member countries in Central and Eastern Europe	0.156	0.364	0	1	0	-0.011
Research on Russia	0.164	0.372	0	1	0	0.170 *
Research on the former republics of the Soviet Union (excluding Russia)	0.057	0.234	0	1	0	0.006
Research on China	0.156	0.364	0	1	0	-0.035
Across-countries-type study	0.500	0.502	0.5	1	0	-0.170 *
Theoretical study	0.148	0.356	0	1	0	-0.123
Agent and elite	0.066	0.249	0	1	0	0.022
Official institution	0.352	0.480	0	1	0	0.157 *
Non-official institution	0.057	0.234	0	1	0	0.237 ***
Nation and politics	0.139	0.348	0	1	0	-0.060
Culture/ values/ ethics	0.090	0.288	0	1	0	-0.095
Social capital network	0.074	0.262	0	1	0	0.002
Region and local identity	0.123	0.330	0	1	0	0.021
FDI determinants and foreign trade	0.098	0.299	0	1	0	-0.078
Impact of legacy	-0.352	0.679	0	1	-1	0.008
Economic mechanism	0.418	0.495	0	1	0	0.073
Political mechanism	0.164	0.372	0	1	0	0.049
Cultural mechanism	0.279	0.450	0	1	0	0.106
system logic	0.082	0.275	0	1	0	0.017
Political economics	0.156	0.364	0	1	0	-0.184 **
Economics (and the like)	0.189	0.393	0	1	0	0.008
Economic policies and related	0.123	0.330	0	1	0	0.021
Business/ management	0.172	0.379	0	1	0	0.106
Regional research	0.139	0.348	0	1	0	-0.009
Trasitional theory	0.123	0.330	0	1	0	0.075
Development theory	0.041	0.199	0	1	0	0.012
Arthur	0.049	0.216	0	1	0	0.094
Campbell	0.006	0.078	0	1	0	0.045
Chavance	0.012	0.110	0	1	0	0.134
Coase	0.030	0.172	0	1	0	0.102
David	0.037	0.188	0	1	0	0.071
Granovetter	0.049	0.216	0	1	0	0.167 *
Hausner	0.091	0.289	0	1	0	0.021
Hayek	0.037	0.188	0	1	0	0.112
Hodgson	0.030	0.172	0	1	0	0.237 ***
Murrell	0.043	0.203	0	1	0	0.083
Nelson and Winter	0.024	0.155	0	1	0	0.141
North	0.207	0.407	0	1	0	0.106
Pierson	0.030	0.172	0	1	0	-0.214 **
Polanyi	0.037	0.188	0	1	0	0.153 *
Roland	0.037	0.188	0	1	0	0.112
Scott	0.024	0.155	0	1	0	0.091
Smith	0.030	0.172	0	1	0	0.057
Stark	0.195	0.398	0	1	0	0.212 **
Thelen	0.018	0.134	0	1	0	-0.211 **
Veblen	0.030	0.172	0	1	0	0.237 ***
Weber	0.006	0.078	0	1	0	0.045
Williamson	0.049	0.216	0	1	0	0.131

Note: \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.



Table 4: Ordered probit regression analysis regarding the study evaluation on the path dependency effect

Dependent variable	Four-stage evaluation on the path dependency effect (0-3)		
	Regression coefficient	Standard error <sup>1)</sup>	z-value <sup>2)</sup>
Independent variables (those in parentheses represent default categories)			
Publication year	-0.079	0.037	-2.12 **
Author's affiliated institution type (University)			
Research institution	-0.071	0.471	-0.15
International institution / government agency	0.724	0.859	0.84
Location of each author's affiliated institution (North America)			
Western Europe-based institution	0.967	0.380	2.55 **
Central and Eastern Europe-based or former republics of the Soviet Union-based institution	-1.027	0.429	-2.40 **
Asia-Oceania-based institution	-0.265	0.611	-0.43
Researched region / country (General research on transition economies)			
Research on East Germany	-3.259	0.924	-3.53 ***
Research on EU member countries in Central and Eastern Europe	-0.654	0.427	-1.53
Research on non-EU member countries in Central and Eastern Europe	0.335	0.418	0.80
Research on Russia	0.359	0.621	0.58
Research on the former republics of the Soviet Union (excluding Russia)	-0.233	0.509	-0.46
Research on China	-0.904	0.635	-1.42
Across-countries-type study (Others)	-0.399	0.448	-0.89
Study type (Empirical study)			
Theoretical study	-1.576	0.588	-2.68 ***
Study theme (Variety of capitalism)			
Agent and elite	-0.251	0.494	-0.51
Official institution	1.067	0.426	2.50 **
Non-official institution	2.788	0.758	3.68 ***
Nation and politics	-0.221	0.521	-0.42
Culture / values / ethics	-0.878	0.722	-1.22
Social capital network	0.476	0.592	0.80
Region and local identity	1.781	0.585	3.05 ***
FDI determinants and foreign trade	0.010	0.527	0.02
Impact of legacy (-1, 0, 1)	0.207	0.244	0.85
Path dependency mechanism (Not mentioned)			
Economic mechanism	9.331	0.820	11.38 ***
Political mechanism	10.172	1.019	9.98 ***
Cultural mechanism	9.686	0.885	10.94 ***
System logic	8.553	0.994	8.61 ***
Publication journal type (Others)			
Political economics	0.603	0.725	0.83
Economics (and the like)	-0.181	0.652	-0.28
Economic policies and related	-0.443	0.669	-0.66
Business / management	-0.294	0.610	-0.48
Regional research	-0.497	0.579	-0.86
Transition theory	0.218	0.621	0.35
Development theory	0.809	1.079	0.75
Cited researchers (Others)			
Arthur	1.228	0.822	1.49
Campbell	2.071	1.259	1.64 *
Chavance	10.849	2.668	4.07 ***
Coase	0.975	0.992	0.98
David	-2.948	1.314	-2.24 **
Granovetter	2.215	0.862	2.57 ***
Hausner	-0.266	0.503	-0.53
Hayek	2.389	0.968	2.47 **
Hodgson	3.067	1.332	2.30 **
Murrell	-0.488	0.843	-0.58
Nelson and winter	0.639	0.860	0.74
North	-0.836	0.466	-1.79 *
Pierson	-0.252	1.121	-0.22
Polanyi	0.405	0.900	0.45
Roland	1.392	1.002	1.39
Scott	-0.724	1.353	-0.54
Smith	-0.779	0.708	-1.10
Stark	0.158	0.451	0.35
Thelen	-3.412	1.216	-2.81 ***
Veblen	1.769	1.165	1.52
Weber	-1.349	1.582	-0.85
Williamson	-1.339	0.844	-1.59
N		122	
Log pseudolikelihood		-88.712	
Pseudo R <sup>2</sup>		0.440	

Notes:

1. Heteroscedasticity-consistent standard error by means of a modified method called White's heteroscedasticity-consistent estimator.

2. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.