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Varieties of Innovation Systems

The Governance of Knowledge Transfer in Europe

Actors and Structures

campus

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1. Introduction

The first decade of the 21st century ended with a dramatic worldwide financial and economic crisis, culminating in the crash of *Lehman Brothers* in September 2008 and the debt crisis in the USA and the *Euro*-Zone in 2010 (Scharpf 2011), and questioning the market economy systems in almost all developed countries. With that, this crisis has also opened up a new chapter in the debate on the commonalities and varieties of capitalist systems, which dominated the field of political economy in the past decades (Streeck 2010). While this debate has in much of the postwar period been centered on the systemic antagonism of capitalism and socialism, the fall of communism in the late 1980s led the debate into an "end-of-history" (Fukuyama 1992) direction in the 1990s, presuming the global spread of the victorious capitalist system in its (neo-)liberal appearance, represented above all by the USA. This euphoria, however, even stronger inspired the field of political economy to develop a parallel research agenda focusing on the differences between national varieties of capitalism, not longer acknowledging the capitalist world as a unitary block, but, rather, as a diversified set of institutionally distinctly coordinated market economy systems (Chandler 1990; Albert 1993; Berger/Dore 1996; Crouch/Streeck 1997; Hollingsworth et al. 1994; Hollingsworth/Boyer 1997; Kitschelt et al. 1999; Whitley 1999). The rise of this varieties-of-capitalism-perspective in the 1990s and, above all, in the early 2000s through the influential contribution of Peter A. Hall and David Soskice (2001a), and its controversial reception in the light of the liberalization mainstream, now receive new vigor in the context of the actual crisis, in which whole national and international economic and financial systems are menaced in their stability by economic shockwaves, questioning their stability and their persistence as a whole.

While large parts of the debate on the varieties-of-capitalism-approach emphasized at least a certain trend (if not pressure) towards liberalization of coordination even in those market economies previously organized in a

different way (Deeg 2005; Hay 2005; Morgan et al. 2005; Streeck/Thelen 2005; Cerny et al. 2006; Deeg/Jackson 2007; Hall/Thelen 2009; Mahoney/Thelen 2010; Thelen 2010), the actually observable differences in the impact of the recent crisis raise more strongly than before the question of long-term sustainability in globalized capitalism, efficient structural models and comparative institutional advantages, not only, but especially when looking at the deficiencies of the financialized (neo-)liberal Anglo-Saxon model or of the state driven Mediterranean type of capitalism (Streeck 2010). Latest contributions and debates, not only in the field of political economy, vindicate in this connection for example the German coordinated market economy model, which is celebrated for its technological leadership in export intensive consumer durables and equipment goods, its innovative capacity and international competitiveness (The Economist 2010), revitalizing the varieties perspective and providing new impetus to deeply understand the roots of these distinct success stories.

Even stronger than before, in the context of the current crisis also the consequences of economic globalization on national market economies are debated, in which economic action is increasingly determined by boundless globalized markets, flows of trade, goods and communication, as well as internationalized competition (Giddens 1990; Hirst/Thompson 1996; Held et al. 1999; Robertson 2001; McMichael 2005). In this debate, there is a broad consensus that in contrast to the 1980s and 1990s, for firms in the developed industrial nations the reorganization of firm structures as well as the rationalization and flexibilization of production processes no longer stand in the focus of their entrepreneurial activities. Rather, it is now acknowledged that in a situation of global competition, it is of increasing importance for these firms to come up with marketable product, process and service innovations faster and faster (a.o. Archibugi et al. 1999; Streeck 2004; Archibugi/Iammarino 2010). The *innovative ability* of firms and, thus, whole national economies becomes the decisive factor for the competitiveness of firms in internationalized markets, giving those types of market economies competitive edges which provide adequate and efficient institutional environments to their economic actors to be innovative.

In the centre of these innovation activities stand processes of producing and transferring knowledge and, thus, mutual learning. In the emergent "knowledge economy" (Cooke 2002), different forms of knowledge become quantitatively and qualitatively more and more important production factors, which is reflected by increasing knowledge related investments in

R&D, education and software and is continuously pushed on by the proceeding expansion of information and communication technologies (Al-Laham 2003; Cooke et al. 2007; Godin 2006; Heidenreich 2002; 2003). It is, consequently, indispensible for firms and whole regional and national economies to efficiently create structures and mechanisms for transferring these different types of knowledge between different kinds of actors to enable successful learning and innovation processes, since it is the ability to learn which finally determines their sustainable development and economic success. It will be these *structures and mechanisms of knowledge transfer* in distinct institutional market economy environments that will be the main concern of this study, contributing with that to the deeper understanding of the institutional roots of distinct models of learning and innovation systems.

While the current debates in the fields of political economy and innovation research mostly focus on the functioning and the performance of market economies or innovation systems as a whole, the underlying modes of learning and transferring knowledge are not yet investigated intensively, but, rather, regarded as basic but undifferentiated background processes (Audretsch/Lehmann 2005; Edquist 2005; Ortiz 2008; Acs et al. 1999). Especially the systemic character of knowledge transfer processes and their institutional embeddedness in macro-economic systems remains underexplored. It is one aim of this study to address this gap in the debate, to bring the structures and mechanisms of knowledge transfer underlying innovative activities stronger into the analytic focus, to develop a heuristic model of knowledge transfer systems at the macro level, and to investigate to which degree the institutional configurations coordinating knowledge transfer processes vary across distinct national and regional market economy environments.

In this regard, knowledge transfer is an often used but still insufficiently systemized concept in innovation research. In most studies on the issue the conceptualization of knowledge transfer in the field of innovation does not go far beyond stating that knowledge transfer occurs between many different types of actors and through distinct kinds of channels: It can take place between individuals, firms or other institutions and occurs throughout all stages of the innovation process, from the initial idea to the final commercialization of a specific product, process or service. Important channels of knowledge transfer can exist between the scientific world (universities, research institutes etc.) and the business sector (Mora-Valentín