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What Does Transition Mean?: Post-socialist and Western European Countries Paralleled[1]

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Abstract: This paper suggests a broad concept of transition that is built upon the techno-economic paradigm framework, and defines transition as that institutional change process during which the 'match' between a new technology and institutions is attained. It is argued that the post-socialist transition itself should be seen as the first phase in this institutional change process brought about by the emerging new techno-economic paradigm (ICT revolution), which is a challenge also for Western European economies. This paper provides evidence for the claim that both the frontrunners and the continental Western European countries face the same problem—namely, acquiring the kind of institutional structure that is appropriate for the ICT revolution, as shown in two fields, i.e., the labour market and firm organisation.

Keywords: transition, institutional change, techno-economic paradigm

JEL Classification Numbers: O10, O30, P20

1. Introduction

Over the last 15 years, the study of transition has been one of the major research areas in economics; as a result, a sizeable body of literature has accumulated on this topic. Although this literature does not offer a single, comprehensive theory, a unifying characteristic of it consists in the agreement between various approaches on what 'transition' means: a post-socialist transition. The very essence of this consists basically, but not exclusively, of a threefold movement: (1) from dictatorship to democracy, (2) from the rule of one party to the rule of law, (3) from a planned economy to a market economy (Prokopijevic, 2001). 'Transition', then, is the widely accepted term for describing the political and economic changes that followed the fall of socialism in Central and Eastern Europe and the Soviet Union (Murrell, 2008).

A central proposition in the majority of this literature is that post-socialist economies exhibit particular features, and these make transitology a separate discipline within economics. In this paper, we will challenge this view by arguing that by now, post-socialist countries—or, more

precisely, the frontrunners[2]—do not really differ from continental Western European countries in terms of institutional environment.[3] Furthermore, we will also stress that 'transition' should not and really does not apply uniquely to post-socialist transition; instead, it is a much broader concept related to institutional changes, as Colombatto (2001b) proposes. This line of reasoning supports our view that post-socialist transition was only the introductory phase of a real transition in which frontrunners find themselves today.[4]

In this spirit, following Colombatto (2001a) but taking a step further, we will suggest a general concept of transition that is built upon the techno-economic paradigm framework. We will propose to define 'transition' as that institutional change process during which a 'match' between significantly new technology (macroinventions, in Mokyr's (1990) sense) and institutions is attained. In other words, transition is a period during which a new techno-economic paradigm becomes stabilised.

Furthermore, we will also highlight some features of the current transition that concern the acquisition of those institutions that are appropriate for the emerging new technological paradigm, namely the ICT revolution in today's economy. Our argument is that both continental Western European and former socialist countries confront the same challenge: How to develop or let develop institutions that support the effective execution of the new technical paradigm. We will show that both groups of countries lag behind the U.S. in this respect.

The aim of this paper is thus twofold. The first is to develop the concept of 'transition' within the techno-economic paradigm framework. The second is to parallel the current transition of the Western European economies with that of the Central and Eastern European countries in two important arenas of institutional change required by the new ICT, namely, the labour market and firm organisation.

The paper is organised as follows. Section 2 puts forth arguments for seeing transition in a broad historical context. Section 3 proposes a general concept of transition that is built upon a techno-economic paradigm perspective. Section 4 argues that by the end of the post-socialist transformation, the frontrunners and Western European welfare states have not really differed with regards to the institutional changes they must go through in order to catch up with the U.S. The argument of Section 5 is that labour market institutions and firm organisation are two important areas in the process of adaptation to the new techno-economic paradigm, and Section 6 provides concluding remarks.

2. Transition as an encompassing concept

After the successful transformation of many post-socialist countries, the state of transitology has become increasingly contested within economics. Many scholars (e.g., Csaba, 2005) argue that the study of transitional economies as a particular discipline within economics is no longer

justified since, in practice, these countries, in the most fundamental respects, do not differ from developed countries. Clearly, here (post-socialist) transition is considered a unique historical phenomenon that is already complete. However, there are also other arguments against seeing transitology as an economic theory in its own right: For instance, the views of Kornai (1997, p. 122), who argues that post-socialist transition was primarily a political issue rather than a social or even economic one.[5]

Note, furthermore, that the transition from socialism to capitalism involved those types of transformation that took place a century or more ago in today's developed countries (Murrell, 2008). Therefore, it would be better to try to explain the more recent transition in the same theoretical framework used in the former case. The fact that most transition countries in Central and Eastern Europe have always been part of Europe in a political, cultural and economic sense,[6] and their transitions are best seen as a return to a path they followed before World War II, also support this viewpoint.

To clarify our standpoint, we see post-socialist transformation, above all, as a change in the fundamental political institutions that brought about democracy. The changes in economic institutions were those needed for democracy to work properly: secure private property rights, freedom to contract, enforcement of contracts and the rule of law, that is, the basic institutions of a market.[7] Thus, what was a crucial question for economists during post-socialist transformation was in fact a macroeconomic policy issue: How to achieve privatisation and liberalisation in the best possible way? In our view, the so-called theories of transition,[8] and especially the mainstream approach, simply dealt with this economic policy. Why?

When one strives to reach an *ex ante* defined goal—namely, the market economy—a process understood as involving the perfect rationality of actors and seen as not containing conflicting interests of people and spontaneous elements arises. This is how transition is conceptualised in the mainstream approach (Chavance, 2004), and the central problem becomes one of economic policy design. Not surprisingly, scholars in this camp advised economic policies that aimed at mimicking the developmental path of Western Europe in terms of the outcomes of this development. In this framework, once the basic market institutions are in place, it is difficult to theorise about further institutional changes, however relevant an issue it may be for almost all post-socialist countries.[9] Put differently, transition conceptualised as a movement to a well-defined final end, as it is in the mainstream approach, makes it impossible to understand the dynamics of institutional change in post-socialist countries.

The process approach offers a better framework for achieving greater understanding. We find especially useful the concept put forth in Colombatto (2001b) and Colombatto and Macey (1997; 1998), where transition is not reduced merely to post-socialist transformation, but rather is given a broad meaning: It refers to changes in the rules of the game, that is, in institutions in North's (1990) sense.[10] Colombatto (2001b) argues for interpreting Western history as a series of

transitions, and he develops further the institutional view of Western European history laid down by North (1990) by putting more stress on the endogenous changes to the rules of the game. In this spirit, Colombatto and Macey (1997; 1998) see transition in terms of changes in individuals' behaviour, i.e., a change in the balance of power among various pressure groups. With this approach, contrary to the mainstream approach, transition is considered an institutional development in an open-ended context where institutions emerge partly as a result of discovery. Thus, transition is seen here from the perspective of a historical evolutionary developmental process.[11]

However, as a result of placing complete emphasis on the endogenous character of the emergence of new institutions, a problem emerges. This view somehow erodes the concept of transition: By taking into account the fact that institutions are always changing, the concept of transition seems to lose its meaning. As opposed to the aforementioned process approach on transition, we argue that institutional changes are partly driven by exogenous factors that must be accounted for when conceptualising transition. Accordingly, we need a concept in which, on the one hand, neither the starting nor the final point of transition is predetermined or known *ex ante*, that is, there is a market for institutions as proposed by Pejovich (1994; 2003); on the other hand, we have an unambiguous criterion for qualifying a change as a transition. With regards to the first criterion, then, we follow the process approach on transition, but with regards to the second, we criticise it, claiming that not all institutional change can be seen as transition. We will argue below that transition is only related to changes in technological paradigms.

3. A techno-economic paradigm view of transition

Relying on the theory of co-evolution between technology and institutions (e.g., Pelikan, 2003; Nelson, 2002), our argument is that transition should be considered a process in which, due to major technological advances, institutions adjust or become adjusted to the requirements of the significantly new technology.[12] In other words, transition is a period during which the new techno-economic paradigm stabilises. An explanation for this must begin by investigating the co-evolution of technology and institutions.

Pelikan's (2003) idea is that technologies and institutions must continually adapt to and depend on each other, i.e., the interplay works in both directions, from technology to institutions and vice versa. Nevertheless, the significant questions remain: Which institutions and which kinds of technological advance affect each other, and in which ways? In order to take both directions into account, Pelikan develops a theoretical model with feedback loops, and in order to explain the interplay between technology and institutions, he proposes to differentiate between two characteristics of institutions. On the one hand, there is a certain variety of technological change that the prevailing institutions can absorb without needing to change themselves; this is referred to

as the institutions' 'innovation absorptivity'. On the other hand, there is a certain variety of technological change that the prevailing institutions allow and is likely to be generated; this is referred to as the institutions' 'innovation potential'. The innovation potential of the prevailing institutions may allow some technological changes that exceed the institutions' innovation absorptivity. Once such a technological advance occurs, this will create pressure for an institutional change to occur. The story will be repeated when the new institutions become established, so there is a feedback loop between technological and institutional changes.

A distinction between macroinventions and microinventions, as proposed by Mokyr (1990), may be very useful in providing a more comprehensive view of how technology affects institutions.[13] Mokyr (1990) proposes calling major technological advances 'macroinventions', which create essentially new techniques and tend to be abrupt and discontinuous. Macroinventions[14] represent a break away from previous techniques; they, by definition, are capable of initiating a new technological course. Macroinventions are at the core of the forces behind long-term growth and structural change (Perez, 2004) and are usually followed by a large number of microinventions that improve and refine them or make them workable, without changing the context of the macroinventions. The reason for differentiating macroinventions from microinventions is that they are driven by different forces. Since microinventions result from a conscious search for improvement in macroinventions along expected directions, they can be conceptualised as economic forces that are driven, at least in part, by the law of supply and demand (Mokyr, 1990). They result, for instance, in better quality or cost reduction. Macroinventions are more difficult to understand. As Mokyr argues, it is practically impossible for macroinventions to result from efforts to improve existing technology; instead, chance, economic forces and individuals of genius all may play a role in their emergence.

The concepts of macro and microinventions are related to that of the technological paradigm developed in Perez (1983; 1985), where the paradigm is seen as the main form and direction of efficient production. Each techno-economic paradigm is crystallised around macroinventions that occur in clusters and which form an industrial revolution (Freeman and Louça, 2001). There are mechanisms inherent in the way technologies evolve: Any technology, sooner or later, experiences diminishing returns and growth based on this technology slow-down. A new paradigm is likely to emerge when the preceding paradigm reaches the inherent limits of its growth potential. Each particular historical form of a paradigm results in a substantial change in the relative cost structure,[15] and it involves profound changes in the relative importance of the various branches of the economy (Perez, 1983). Each paradigm is driven by different leading sectors, such as the cotton industry during the British Industrial Revolution or the automobile in the period between 1920 and 1970. In the diffusion process of the new paradigm, there is a gradual abandonment of the old declining model of production. Clearly, this is an evolutionary process involving creative destruction.

Macro and microinventions interact with particular components of the institutional structure[16] in various ways, in which feedback mechanisms also work. It is beyond the scope of this paper to develop a full understanding of this co-evolution; for our present concern, it is sufficient to focus on how macroinventions affect institutions.[17] Surely, each new techno-economic paradigm requires a matching transformation at the institutional level. The new technologies cannot thrive in the environment of the preceding paradigm, and a gradually worsening mismatch occurs in which a greater and greater disruption gradually makes institutions more and more counterproductive. This mismatch sooner or later leads to a fundamental restructuring of the socio-institutional framework (Perez, 1983; 2004; Freeman and Louça, 2001). The transition is precisely the period of confrontation between the new technology and old institutions; the major problem with the institutional change is that there are inertial forces that make the institutions more resistant to change and rather slow to adapt to new conditions, partly because of past success. The construction of the new institutional framework, as well as that of the new paradigm, is a gradual trial-and-error process.

To summarise, macroinventions are responsible for the emergence of a new technological paradigm, while microinventions stay within the same technological paradigm and represent small incremental steps in technical change. Since macroinventions cannot be absorbed by prevailing institutions, they eventually provoke changes in institutions.[18] For the new technological paradigm to work efficiently, both new institutions (such as laws or governmental institutions) and firm organisation (e.g., new coordinating institutions or new kinds of division of labour within firms) are needed.[19]

Based on the above, we propose to conceptualise transition as an institutional change process related to the rise of a new techno-economic paradigm. Within this framework, the transitional process is open-ended: The end-state cannot be forecast, since the whole process is an evolutionary one (see endnote 11). At the same time, since there is an unambiguous criterion for qualifying an institutional change process as transition, the concept is not arbitrary (see the critique of the process approach on transition in Section 2).

It now becomes clear that post-socialist transformation, by bringing about basic market institutions, has to be seen as the introductory phase to that transition which, as we will highlight below, represents an adaptation to the new ICT, that is, transition is not yet complete in post-socialist countries; instead, they are just at the beginning of a transition that is provoked by the emerging new techno-economic paradigm. In this respect, they do not differ from Western European countries.

Having said that, there emerge two issues that need to be discussed in further detail. First, it is necessary to investigate the currently emerging new paradigm and its institutional requirements. Second, we must highlight the fact that post-socialist and Western European countries, both of which lag behind the U.S., face the same challenges.

4. The end of the post-socialist *transformation* is the beginning of the *transition*

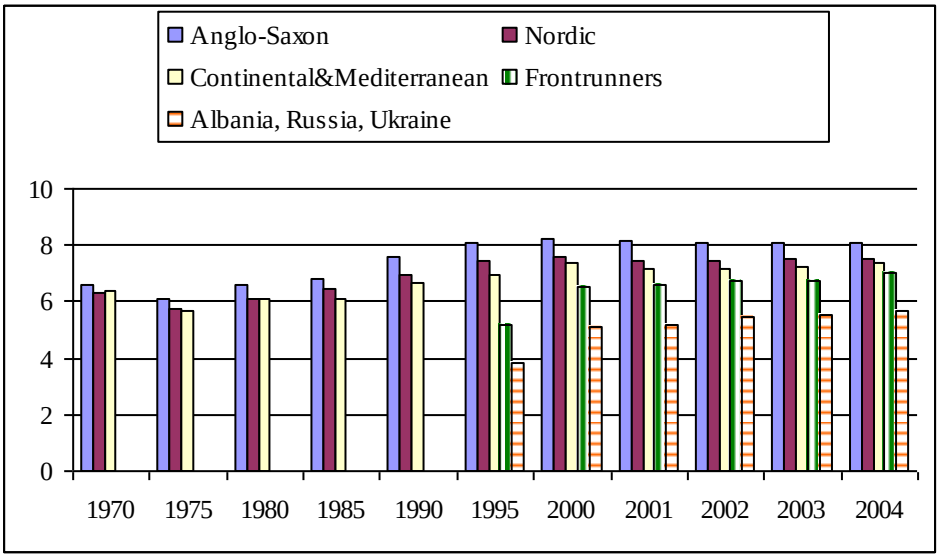
Many studies (e.g., DeLong and Summers, 2001; Freeman and Louça, 2001; Perez, 2004; Phelps, 2003) argue and provide evidence that one can draw parallels between the role the new ICT revolution plays and that of the macroinventions of the First and Second Industrial Revolutions; accordingly, they propose to see an ICT revolution as the Third Industrial Revolution.[20] The vast technological revolution that is now taking place is based on personal computers, software, microelectronics, the Internet and mobile phones. The industries related to these technologies flourished in the U.S. in the 1990s at a very high rate (Freeman and Louça, 2001). It is likely that the new technologies have had a strong and powerful impact on the economy, because they are general-purpose technologies and the demand for them is likely to be extremely elastic. As a result, an even slower proportional rate of growth within the high-tech sector itself is likely to translate into a larger contribution to the growth of the economy as a whole (DeLong and Summers, 2001).[21]

Thus, we are in a phase where new technology is emerging and diffusing, but Europe still has an old institutional structure that was appropriate for the previous technological paradigm. Accordingly, the current period can be defined as a transition between two distinct techno-economic paradigms. The broad institutional arrangement of the preceding paradigm was a Keynesian democracy, i.e., one denoted by the establishment of massive and systematic state intervention in the economy (Perez, 2004) as characterised by the direct manipulation of demand through fiscal and monetary policy, official recognition of trade unions, collective bargaining and the establishment of a complex set of social security nets. As we will show, it is precisely these institutions that do not work well with today's new technology. Taking into account the fact that the Keynesian economy is rather a European phenomenon, institutional tensions are much more severe in Europe than in the U.S. In addition, in their transformation, post-socialist countries followed largely the continental model rather than the Anglo-Saxon one.

In what follows, we will provide some empirical facts supporting the view that when it comes to macroinstitutions of regulation and government intervention, post-socialist[22] and Western European welfare states are very similar, due to the successful transformation[23] of the frontrunners; however, both groups differ from the U.S., whose institutional structure is the closest to what the new techno-economic paradigm requires.[24]

Figure 1 shows the time series of the Economic Freedom of the World Index, published by the Fraser Institute for different welfare state groups and for transformation countries.[25] This index can be interpreted as indicating institutional quality.[26] As shown, the gap between Western European and frontrunners' institutions is narrower than that between institutions of frontrunners and other transitional countries. It is also clear that there has been some degree of institutional

Figure 1 Index of Economic Freedom of the World for different groups of countries



Source: Gwartney and Lawson (2006)

convergence among the different types of welfare states,[27] including frontrunners, while the other transformation countries lag behind. Anglo-Saxon countries are still and clearly ahead.

In order to provide more robust support of the above proposition, we performed a more precise analysis based on the data provided by Gwartney and Lawson (2006). In what follows, we will not examine the aggregate index of economic freedom, but only those components that represent those elements of the institutional structure we argue are important in connection with the shift from the old techno-economic paradigm to the new one. Based on the average of the 2000, 2001, 2002, 2003 and 2004 values of three components of the index (i.e., size of government, freedom to trade internationally and regulation), we ran a cluster analysis using the data of 32 welfare and transformation countries, and the U.S. We decided to create four clusters, because both our thesis and a thesis alternative to ours can be operationalised in this way. Our thesis is, as explained earlier, that except for the U.S. (which may be a separate cluster), European and frontrunner countries belong to the same (possibly) two clusters: One that is closer and another that is further from the U.S.-like institutional structure. As a fourth cluster, the other transformation countries lag behind. An alternative thesis disregards the U.S. (an altogether separate cluster) and shows European welfare states as standing out from the two possible groups of transformation countries.

Table 1 Clusters based on the measure of (national and international) regulation and government intervention

Cluster	Countries
1	Estonia, Iceland, Ireland, Switzerland, United Kingdom, United States
2	Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Hungary, Italy, Luxembourg, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden
3	Albania, Greece, Latvia, Lithuania, Poland, Russia
4	Bulgaria, Croatia, France, Romania, Slovenia, Ukraine

Source: Gwartney and Lawson (2006)

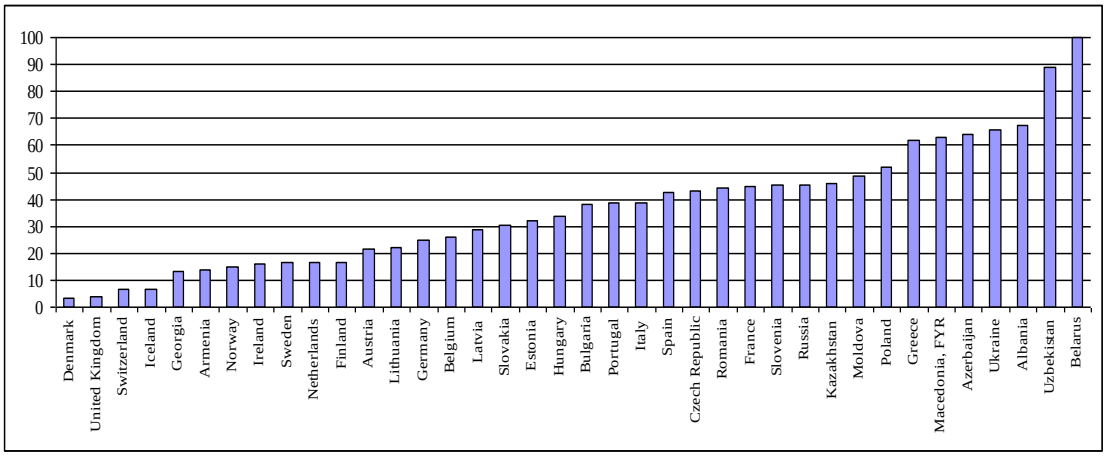
The results above (as shown in Table 1) are not as unambiguous as our purely theoretical proposition suggests, but the trend is clear: Anglo-Saxon countries, together with Estonia, are the best, and major Western European countries appear together with some frontrunners in group 2. Interestingly, France, a traditional welfare country, belongs to the same cluster as the transformation countries that lag behind. This is mainly because of the large size of the French government.[28]

The idea that the regulatory environments of the frontrunners are closer to those of the welfare states than to those of the other transformation countries is well illustrated by data *vis-à-vis* the regulation of entrepreneurship. The World Bank's *Doing Business* database provides data on several aspects of the regulation of businesses, allowing us to make cross-country comparisons. Figure 2 illustrates the results of said comparisons, based on the aggregation of eight areas of these data (i.e., starting a business, dealing with licenses, hiring and firing workers, enforcing contracts, paying taxes, registering property, trading across borders and closing a business)[29] through a principal-component analysis. By applying this method, we could calculate how 'far' a country's regulatory environment is from that of the U.S. These distances as expressed as percentage points, taking the distance of the most distant country, Belarus, as 100%; all distances are plotted in Figure 2.

It is clear from Figure 2 that there is no systematic difference between the distance of the U.S. from the European welfare states and that of the U.S. from the frontrunners. However, the transformation countries outside the frontrunners' circle seem to be systematically further: Eight of the last 10 countries belong to the latter group.

This proposition can also be underpinned through the use of data from the *Doing Business* index, which was derived from an aggregating process different from ours[30] and is based on every regulatory area available in the *Doing Business* report, resulting in a ranking of the countries. If we take the meanings of these rankings for welfare states, frontrunners and other transformation

Figure 2 Regulatory distance from the U.S. for welfare states and transformation countries (Belarus=100)*



* Distance is measured as a Euclidean distance in terms of standardized data resulting from a principal-component analysis.

Source: *Doing Business in 2007*

countries respectively, it seems to make sense to say that frontrunner countries are much closer to the European welfare states than to the other transformation countries (see Table 2). This conclusion is even stronger if one bears in mind that the small difference between the average ranking of the welfare states and that of the frontrunners is caused by the high rankings of the Nordic countries, and not by the rankings of the 'traditional' (i.e., continental and Mediterranean) welfare states.

From this section, we can infer that major future reforms in frontrunner countries are likely to be those required by the new technological paradigm, as in developed countries.[31]

5. Crucial areas of current transition: Labour market and firm organisation

As shown above, by and large, the institutional environments (i.e., the regulatory environment and the extent of government intervention in the economy) of the continental Western European countries and those of the frontrunners are very similar. Accordingly, the inappropriateness of the institutions for receiving new technology holds for both groups of countries, despite the fact that the literature deals almost exclusively with Western Europe when contrasting Europe with the U.S. However, based on the above, it is likely that the same applies to the frontrunners as well.

Table 2 The ease of doing business for different countries and different country groups

Country	Ease of doing business	Welfare states		Frontrunners		Other transformation countries	
		Country	Ease of doing business	Country	Ease of doing business	Country	Ease of doing business
United States	3	United Kingdom	6	Lithuania	16	Armenia	34
				Estonia	17	Georgia	37
		Denmark	7	Latvia	24	Romania	49
		Norway	9	Slovakia	36	Bulgaria	54
		Ireland	10	Czech Republic	52	Kazakhstan	63
		Iceland	12			Serbia	68
		Sweden	13	Slovenia	61	Montenegro	70
		Finland	14	Hungary	66	Kyrgyz Republic	90
		Switzerland	15	Poland	75		
		Belgium	20	**Mean**	**43.38**	Macedonia, FYR	92
		Germany	21				
		Netherlands	22			Bosnia and Herzegovina	95
		Austria	30				
		France	35			Russia	96
		Spain	39			Azerbaijan	99
		Portugal	40			Moldova	103
		Italy	82			Albania	120
		Greece	109			Croatia	124
		Mean	**28.47**			Belarus	129
						Uzbekistan	147
						Mean	**86.47**

Source: *Doing Business in 2007*

Many provide evidence for the fact that since 1995, Europe has lagged behind the U.S. (e.g., Bartelsman *et al.*, 2004; Blanchard, 2004; Gordon, 2003; 2004; Oliner and Sichel, 2002; O'Mahony and van Ark, 2003; Shelburne, 2005) with regards to its growth rate and its growth in productivity. The growth rate in output per hour over 1995–2003 in Western Europe was just half of that of the U.S., and this annual growth shortfall caused the level of European productivity to fall back from 94% of the U.S. level to 85% (Gordon, 2004). As shown in Table 3, the period of technological divergence in which the technological gap widened started in 1995.

Table 3 Annual productivity growth in various sectors in Europe and the U.S.

Annual labour productivity growth	1979–1990		1990–1995		1995–2001	
	EU	U.S.	EU	U.S.	EU	U.S.
Total economy	2.2	1.3	2.3	1.1	1.7	2.2
ICT-producing sectors	7.2	8.7	5.9	8.1	7.5	10.0
ICT-using sectors	2.2	1.2	2.0	1.2	1.9	4.7
Non-ICT sectors	1.8	0.5	2.1	0.3	1.0	–0.2

Source: O'Mahony and van Ark (2003)

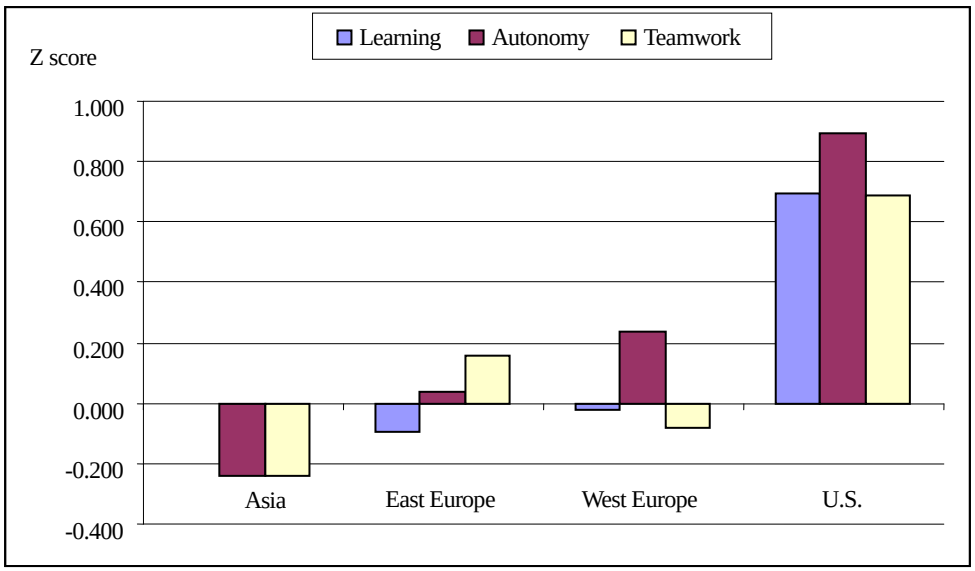
Disaggregated studies of industrial sectors suggest that the main difference between Europe and the U.S. is in their ICT-using industries.

Various institutional weaknesses are at the root of this phenomenon, including the university system, underdeveloped public-private partnership and poor fundamental research. Phelps (2003), by providing a broader perspective, argues that the relatively poor economic performance of continental Europe results both from the underdevelopment of capitalist institutions such as venture capital and equity finance, and the overdevelopment of corporatist institutions that suppress innovation and competition.

In what follows, from among the criticised institutions, we will focus on two highly related institutional areas where the new ICT requires change: the labour market and firm organisation. We will highlight the respects in which Western and Central & Eastern Europe could change their institutions. Let us start with the analysis of the firm organisation issue, which is a somewhat neglected issue, because of the macroeconomic viewpoint of the aforementioned studies; however, the way in which transactions are organised within firms is one of the most significant aspects of the current transition induced by the ICT revolution.

The ICT revolution has significantly changed the character of work: Knowledge has become the crucial input, and it forces the efficient utilisation of the 'knowledge of the particular circumstances of time and space' (Hayek, 1945, p. 521). This requires new organisational forms that rely more on teams and projects, and on the use of more flexible methods. Due to changes in competition in markets, firms also prompt their members to behave entrepreneurially, leading to modular structures that have less need for management. Internet technology also makes it possible to work in smaller units or even at home (Mokyr, 1997), which erodes the traditional boundaries of the firm. In some respects, firms are becoming virtual teams that are assembled on an *ad hoc* basis for specific projects. Clearly, these project-based firms call for flexible forms of employment that result in a fundamental shift in the character of work.

Figure 3 Distribution of work characteristics

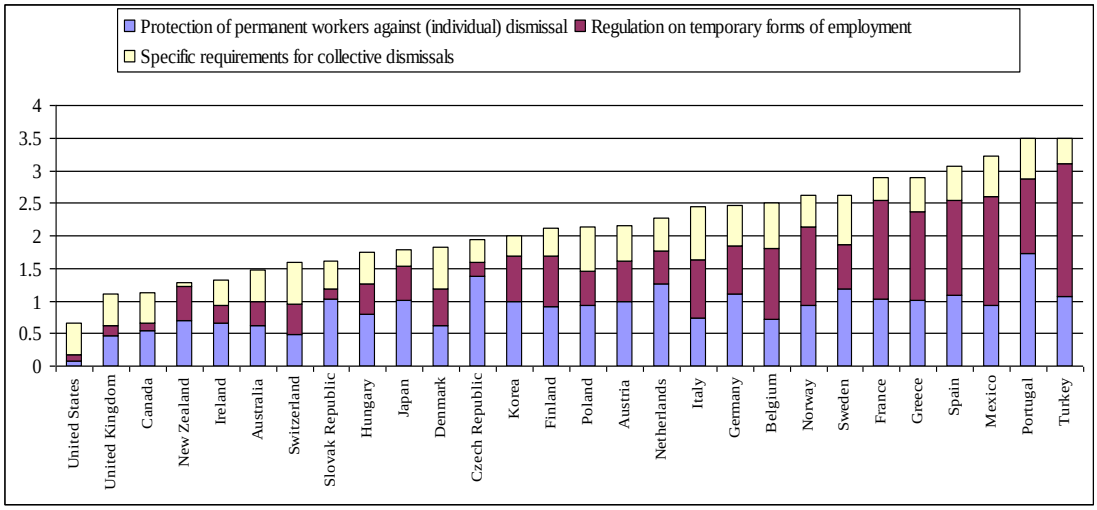


Source: Kroupa (2006, p. 27)

A problem in Europe is that this new type of firm organisation[32] is still, to a large extent, missing. Although, as we have seen, frontrunners have changed their institutional environments rapidly and successfully, it is surprising, as Murrell (2005, pp. 676–681) highlights, that they were not able to change sufficiently the organisational structure of their firms.[33] Murrell (2005) shows that the boundaries of firms have hardly changed in the transformation process. Interestingly, he argues, firms have relied too much on courts and the legal system in solving transactional issues—a reliance that resulted from underdeveloped interfirm relationships. This suggests that organisational modes have hardly changed during the post-socialist transformation (Aoki, 1995).[34]

In Western Europe, the emergence of more decentralised organisations also lags behind that of the U.S. Rajan and Wulf (2006) find empirical evidence for the flattening of organisations in the U.S. between 1986 and 1999, and Acemoglu *et al.* (2006) show in a formal model that firms closer to the technological frontier—as is the case in the U.S.—are more likely to choose decentralisation. Briefly, the trend towards decentralisation, a flattening organisational hierarchy and modularity is a largely American phenomenon (Sturgeon, 2002). Note also that the fact that Europe fails to adopt the new firm organisation to the same extent as the U.S. is largely reflected in the performance difference between the U.S. and Europe to which we referred: European firms could not fully exploit increased labour productivity (Blanchard, 2004; Scarpetta and Tressel,

Figure 4 Overall strictness of EPL in 2003



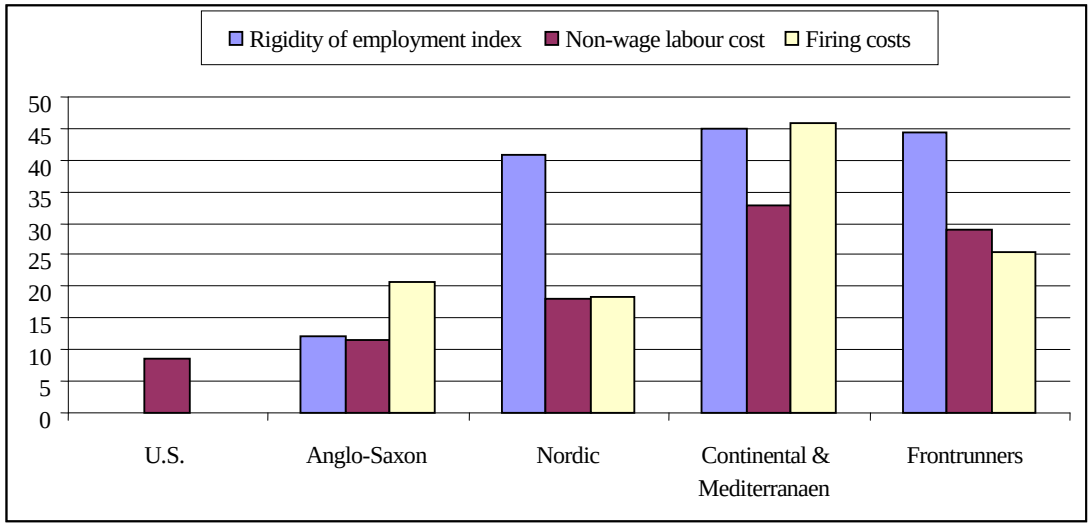
Source: OECD Statistics, http://stats.oecd.org/wbos/default.aspx

2004, p. 3) due, at least in part, to the fact that they had (and have) not transformed themselves.

New types of employment would also be necessary for new firm organisation. In today's economy, as Neumark and Reed (2002) argue, workers in the fastest-growing industries are much more likely to be in contingent employment relationships. Many report that Europe lags behind the U.S. with regards not only to the preponderance of the new firm forms but the prevalence of contingent work. For instance, Kroupa (2006) finds that in terms of learning, autonomy and teamwork—three major characteristics of today's work—only the U.S. has an above-average prevalence in all characteristics (see Figure 3); similarly, various forms of flexible employment have become more widespread in the U.S. than in Europe.

The other area we focus on and which plays an important role in the process of adaptation to a changing technological environment is the labour market. Many studies (e.g., Gordon, 2004; Munkhammar, 2007) argue that labour market institutions have become the most important elements in changing institutions in today's economy.[35] The focus of blame in Europe is on the rigidity of the labour market: Employment practices, regulations, unions and the like restrict firms from offering appropriate incentive compensation, changing the tasks of employees or dismissing workers—all of which are actions required to adapt to a changing environment. Clearly, the free labour market is superior, because it yields better results for society and workers alike (Munkhammar, 2007); it makes workers more competitive and better compensated. Scholars have shown that heavy regulations in the labour market produce adverse employment consequences: Between 1970 and 2003, employment in the U.S. increased by 75%; in France, Germany and

Figure 5 Labour market flexibility in various welfare models and in frontrunner transformation countries*



* Anglo-Saxon countries: Australia, Canada, Ireland, New Zealand, United Kingdom; Nordic countries: Denmark, Finland, Sweden, the Netherlands, Norway; Continental & Mediterranean countries: Austria, Belgium, France, Germany, Greece, Italy, Portugal, Spain, Switzerland; Frontrunners: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia.

Source: *Doing Business in 2007*

Italy, it increased by 26% during the same period (*European Commission Eurostat*).

There is no doubt that the American labour market is the most flexible, followed by the Anglo-Saxon and Scandinavian ones; the continental and Mediterranean labour markets exhibit various degrees of rigidity (Esping-Andersen, 1999, p. 94). Figures 4 and 5 illustrate these facts. As shown in Figure 4, the employment protection legislation (EPL)[36] that frontrunners adopted is similar to that of Western Europe, but even though their labour markets are more flexible, both lag behind that of the U.S. In Figure 5, we plotted those data from the aforementioned *Doing Business* database that look to measure the rigidity of the labour market; here, the rigidity of employment is an index running from zero (least rigid) to 100 (most rigid), and the non-wage labour cost (i.e., all social security payments and payroll taxes) is measured as a percentage of salary and firing costs in weeks of wages.

The ranking of labour freedom in Europe in 2006 (Kane, Holmes and O'Grady, 2007) echoes the rankings described above: 1. Georgia, 2. UK, 3. Armenia, 4. Switzerland, 5. Czech Republic, 6. Denmark, 7. Bulgaria, 8. Belgium, … 13. Hungary, 14. France, … 24. Netherlands, … 26. Italy, ... 28. Poland, 29. Germany.

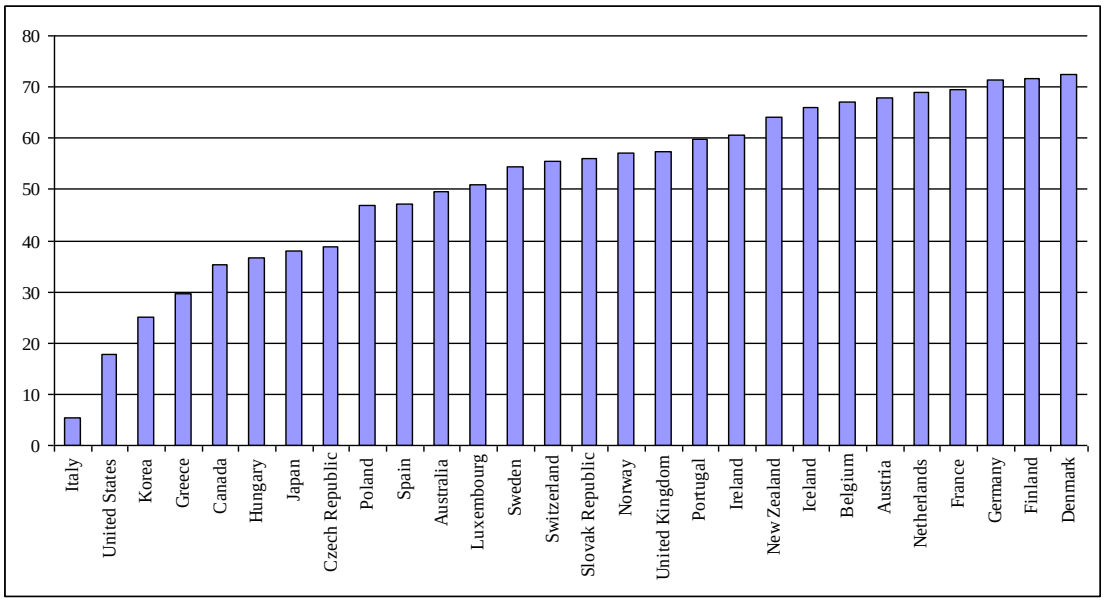
It is also worth taking a closer look at the relationship between unemployment and the flexibility of the labour market. The behaviour of European unemployment as described by the literature seems to match our hypothesis *vis-à-vis* institutions and the new technological paradigm. Nickell (1997) was the first to analyse empirically the idea that the difference in the flexibility of the labour market can account for the difference between the unemployment rates of the U.S. and Europe. Moreover, Blanchard (2006) and Blanchard and Wolfers (2000) show that the state of European unemployment could not accommodate the oil shocks that occurred together with a fall in the rate of technological change, and that since the 1970s, unemployment in Europe has been consistently higher than in the U.S. Blanchard and Wolfers (2000) also argue that we can better understand the behaviour of unemployment if we suppose that under different institutional structures, unemployment will react differently to the same economic shock; nonetheless, in order to account for the persistence of a high unemployment rate, one must take into consideration the way in which European governments have reacted to rising unemployment rates: They made labour market institutions *more* rigid.[37]

In our interpretation, the development of European unemployment has occurred as follows. After the oil shock, the downturn of the previous techno-economic paradigm began, which is documented by the slowdown in the rate of technological change. The end of the old paradigm and the beginning of the new one pushed the Keynesian model into crisis. As the keys of this model are a rigid labour market and state intervention, the crisis was the most obviously present at these 'stages': The further behind we left the old paradigm, the more serious the stress originating from rigid labour markets and public finance became.

An important conclusion we can draw from this literature *vis-à-vis* unemployment is that continental welfare states could not adjust their labour market institutions to suit technological changes, while the two other groups could, at least partially. A key to solving labour market problems consists in changes concerning labour market flexibility; active employment policy must be used only as a secondary tool (Eichhorst and Konle-Seidl, 2005). Moreover, besides the institutions that regulate 'hiring and firing' conditions, institutions dealing with labour market coordination and collective bargaining also affect the use of new ICT. For instance, when employees have low bargaining power (e.g., a centralised bargaining system), firms have more incentives to invest in technology, because this reduces the hold-up problem (Scarpetta and Tressel, 2004, p. 4).

In addition to what we have previously asserted, it is useful to make some further clarifying comments.[38] Although we argue that some important aspects of the labour market in transformation and Western European welfare state countries are very similar, one should bear in mind that there are several other characteristics of the labour markets that do not show the same cross-country pattern as the elements we analysed. It is also a well-known fact, for example, that when it comes to the generosity of unemployment benefits, Mediterranean countries are more

Figure 6 Average of net replacement rates over 60 months of unemployment*



* Averages over persons with different average wages, family status and level of social assistance.

Source: OECD (2006)

'flexible' than the rest of Europe (see Figure 6), and Anglo-Saxon countries are not obviously ahead of the other OECD countries. Clearly, our argument is relevant only for a subset of labour market institutions. We assert, however, that by determining how easily firms can react to the change in the technological paradigm, this subset determines economic performance to a large extent.

Of course, the same is true with regards to firm organisation: In many respects, firms in transformation countries, and especially domestic firms, differ from those in Western Europe. However, these differences concern mainly those aspects of firm organisation that are related to management in general, and not particularly to the new ICT.[39]

In summary, the argument is that those factors make labour market and firm organisation similar in Western European and in frontrunner countries that are related to the new ICT, while in other respects there are differences between the groups of countries. However, as argued above, there is a gap between the U.S. and Europe with regards to adapting to the new ICT, and the similarities between Western and Central & Eastern Europe in these two areas (labour market and firm organisation) are more important than the differences. Accordingly, the important question

for Western and also for Central & Eastern Europe is whether they will be able to change their labour market institutions and firm organisations more radically, which is crucial in adapting to the new technological paradigm. Thus, transition is not yet complete.

6. Conclusion

In this paper, we proposed a broad view of transition that is built upon the techno-economic paradigm. In this sense, a transition is conceived as a process in which, due to major technological advances, institutions adjust or become adjusted to the requirements of the significantly new technology. Our major argument was that both Western and Central & Eastern Europe are currently in a transition process, because their prevailing institutions could not absorb the macroinventions brought about by the ICT revolution. We have shown the institutional inconsistencies in two types of institutions: Labour market institutions and firm organisation, which are, indeed, intertwined. Both groups of countries face the same problems in these areas, and both lag behind the U.S. in terms of how far they have moved towards acquiring those institutions that fit well into the new and emerging paradigm.

This new perspective, however, allows us to see post-socialist transformation in a new light: Post-socialist transformation should be conceived as a first phase in the current transition process. Post-socialist transformation was about preparing oneself for the transition enforced by the ICT revolution, which can occur only if some institutions are already in place, such as a credible and stable legal system, secure property rights, freedom of exchange and a law of contract.[40] A group of post-socialist countries called frontrunners that have succeeded in developing these institutions confront further institutional problems arising from the emerging new technological paradigm, and these are the same problems welfare states address.

Notes

[1] This paper has benefited from the support of the National Office for Research and Technology (Jedlik Ányos Research Program, contract no. OM-00019/2007).

[2] See endnote 22.

[3] By institutional environment, we mean the formal rules of the game, as in Williamson (2000).

[4] Consequently, in what follows, we will use the term *transformation* to describe the process leading from socialism to capitalism, and the term *transition* when referring to the current process, except when referring to other authors' uses of the word.

[5] We think it is somehow paradoxical that we rely on Kornai when arguing against transitology, given that he is a scholar who has studied the post-socialist transition so intensively.

[6] See Hodgson (2006).

[7] The same is argued in Friedman (1962): A democracy cannot properly work without private property and freedom of contract.

[8] In the vast post-socialist transformation literature, we distinguish between two major strands: the mainstream and the process approach. However, with regards to the speed of transformation, viewpoints differ among mainstream economists. On the one hand, we have the big-bang theory (shock therapy) (e.g., Blanchard *et al.*, 1994; Kornai, 1999; 2000b; for an overview, see Marangos, 2002); on the other hand, we have the more cautious gradualist camp (e.g., Arrow, 2000; for an overview, see Marangos, 2005). The other major strand, namely the process approach to transition, has various versions (Austrian economics (Boettke, 2001; Boettke and Leeson, 2003; Colombatto, 2001a), public choice theory, and institutional and evolutionary economics).

[9] Amongst these, changes in informal institutions are very important. Changes are completely neglected in the mainstream approach, partly because they are not policy variables. However, as Pejovich (2003) stresses, the interaction between formal and informal institutions is of paramount importance for the success of transition.

[10] It is interesting to note that Kornai's (2005) concept of transition is, in fact, similar to this, in terms of being a broad concept. He considers post-socialist transition one that is integrated into the main current of history in the sense that it aims at establishing capitalism.

[11] The open-ended character of the transition process means that there is no deliberate design; accordingly, neither is there an in-advance-determined final state in the process. Instead, actors must discover and experiment with new institutions. As a result, appropriate institutions will survive, meaning that the entire process is an evolutionary one.

[12] Of course, the change in bargaining power of various interest groups, which Colombatto (2001b) refers to, is part of this institutional adjustment process.

[13] Instead of macroinventions, Perez (2004) and Freeman (1984) use the term radical innovations, and the term incremental innovations instead of microinventions. We do not see any difference within these two sets of terms.

[14] Good examples of macroinventions are the inventions of the First and Second Industrial Revolutions (such as the steam engine and electricity, respectively) and, as we will argue below, the new information and communication technologies (ICT) appearing in today's economy.

[15] According to Perez (1983), there have been five long-wave cycles (since the British Industrial Revolution) and the key inputs have been as follows: iron and coal during the British Industrial Revolution (first two waves), low-cost steel in the Second Industrial Revolution, low-cost oil from the 1950s and microelectronics in today's economy.

[16] In our understanding, the institutional structure is broader than the institutional environment. The latter corresponds to the second level in Williamson's (2000) schema, while the former, in addition, also includes institutions at the third level (e.g., various governance structures).

[17] By this, we do not intend to say that only macroinventions affect institutions. On the contrary: The framework of the co-evolution of technology and institutions involves, on the one hand, the fact that particular institutions affect each other; on the other hand, there is the fact that microinventions do, as well. What we want to make clear is that the effect of macroinventions is unique in the sense that they are capable of inducing 'fundamental' changes in institutions, that is, they may lead to the appearance of radically new institutions.

[18] As opposed to this, microinventions are absorbed by the prevailing institutions.

[19] As a historical example, let us consider the British Industrial Revolution. The macroinventions (steam engine, water power, etc.) required, on the hand, new institutions (e.g., patent law, academic journals), and on the other hand, a new kind of organisation of production (the factory).

[20] Freeman and Louça (2001) clearly show that all criteria of the techno-economic paradigm proposed by Perez (1983) are met in today's ICT revolution.

[21] This means that today's leading sectors may have broader consequences in the long run than the leading sectors of the previous industrial revolutions had. Note that others (e.g., Gordon, 2002) are much more sceptical of the effects of the new economy.

[22] We deal only with the most advanced post-socialist countries, that is, the eight countries that joined the EU, referred to by Csaba (2003; 2005, pp. 88–89) as 'frontrunners'. The so-called second or third group of transitional countries lags behind the frontrunners in every respect (Csaba, 2003); accordingly, they cannot be paralleled with the West. Hodgson (2006), in his regression analysis, finds that Western Christendom, which is characteristic of most of the frontrunners, is significant in explaining subsequent growth.

[23] The first phase of the post-socialist transformation was characterised by the triumvirate of Stabilisation–Liberalisation–Privatisation (SLIP), which brought about not only macroeconomic stabilisation but also changes in the institutional environment. For details on this process, see Csaba (2002; 2005), Kornai (1994; 2000a) and Murrell (2005).

[24] Because of its better adaptation to the requirements of the new ICT, as argued by many in the literature, we will use the prevailing institutional structure of the U.S. as a benchmark. We do not think that this should be regarded as an outcome that European countries should strive for, since, of course, this outcome is also subject to change. Furthermore, since transition is an open-ended process, no precise end-state can be designed. However, comparisons with American institutions may point to the comparatively worse position of Europe.

[25] Data is available only for Albania, Russia and Ukraine.

[26] A score of 10 represents the best institutional structures.

[27] This typification of the welfare states comes from Sapir (2005).

[28] In addition, its freedom to trade internationally and its regulatory freedom is not enough to compensate for the low score for government size. Sweden, with a similarly large-sized

government, belongs to cluster 2, because it has a much better 'freedom to trade' score and a slightly better regulation score.

[29] We dropped those variables that are not measured on a cardinal scale. For this reason, we omit two areas on which the document reports, namely, the measures of 'getting credit' and 'protecting investors'.

[30] For details, see *Doing Business in 2007* (p. 74) and Djankov, McLiesh and Ramalho (2006).

[31] As argued by many (e.g., Csaba, 2005), after surviving the transformation, frontrunners are facing the same problems the welfare states do, rather than the problems of the socialist past.

[32] For an in-depth analysis of the new firm organisation, see Kapás (2004).

[33] This is somehow in contradiction with what Williamson (2000) suggests. According to Williamson, changes at the institutional environment level are very slow, requiring even centuries, while governance structures may change quickly. The interesting thing is that frontrunners were able to change their respective institutional environments within a decade, but the transformation of firm-level institutions was slower.

[34] Various causes lie behind this. At the beginning, the lack of institutional support was critical: Large socialist firms did not have sophisticated governance mechanisms; there was a great potential for hold-up and there were no efficient financial markets. In addition, an effective mechanism for externally monitoring enterprises has not emerged in these countries, because of the dominance of insider control (Aoki, 1995).

[35] Note also that there is a close connection between a flexible labour market and the new firm organisation. On the one hand, the new firm organisation requires a flexible labour market; on the other hand, the new firm organisations may, in their turn, support a more flexible labour market.

[36] EPL is an index of the functioning of the labour market, constructed by OECD in 2003. For details, see OECD (2004, pp. 61–125).

[37] See Hodgson (2006). Although since then they have tried to reverse this process, the in-depth analysis of the French case makes Blanchard (2006, p. 39) 'suspect' that labour market institutions are less 'employment-friendly' now than they were in the early 1970s.

[38] Thanks go to an anonymous referee for drawing our attention to this point.

[39] With regards to the general management of firms—that is, a reliance on modern management techniques (JIT, TQM, etc.)—there is no doubt that Western Europe is closer to the U.S. than to the frontrunners.

[40] In this framework, the current transition of the post-socialist countries is a continuation of their transformation since an adaptation to the requirements of the new ICT (that is transition) presupposes the presence of the basic institutions of the market (that is the results of the transformation). In this sense, the new techno-economic paradigm represents a continuation of the technical regime that prevailed under socialism.

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