

Transformation- and catching-up issues in Central and Eastern European economies – from a network alignment perspective

Introduction and overview

The early years of transition were marked with the disorganization of practically all economic, political, social and institutional linkages in Central and Eastern European (CEE) transforming economies. Disorganization in production, innovation and market linkages was accompanied by state desertion (Ábel–Bonin [1993]; Csaba [2005]) and institutional disorganization. In a broad sense, the collapse of the command economy system can be referred to as an overall disorganization in governance. Consequently, transformation to a market economy system, modernization and integration in the global patterns of production in general, and in the European Union in particular can be described as the reorganization / creation of networks at micro, meso and macro levels of the economy, and as the incorporation of actors in these countries into a multitude of supranational networks.

However, contrary to the covert assumption of benchmarking approaches, the re-establishment of missing links and the creation of previously non-existing ones (i.e. network formation and network integration) cannot alone guarantee modernization and catching-up or at least, cannot guarantee upgrading beyond an initial push effect.¹

This is well-demonstrated by significant inter-country differences in economic actors' upgrading performance and perspectives. One recent telling example of the heterogeneous outcomes of network integration is provided by Evgeniev [2008]. Evgeniev compared the adjustment experience of Bulgarian and Turkish textile and clothing firms. Firms in both countries have integrated their operations with and learned from leading international firms. Actors in both countries have benefited from international partners' technology and know how transfers. Nevertheless, while Bulgarian low-cost producers have rapidly become locked in dependent relationships which – beyond a certain level – impeded their further upgrading efforts, Turkish companies managed to upgrade their operations, and strengthened their autonomous position in world markets.

This paper adds to the accumulating evidence on the applicability and usefulness of a network alignment perspective when assessing CEE economies' transformation and catching-up performance. Combining theoretical arguments with Hungarian fieldwork experience originating out of my past investigations and with a literature overview (i.e. compilation of secondary source evidence), cases of network failure and network misalignment both within the innovation system, and within producer networks will be examined. A third focus of the paper is institutional and policy alignment, i.e. the question, how the institutional set-up facilitates or works against achieving developmental goals in Hungary.

One finding of our research was that although all new EU members abound in examples of network misalignment, Hungary' case is the most telling, since – partly because its specific socialist legacy has had a lasting impact on social actors'

¹ About the 'initial push' effect of foreign investment see Szalavetz [2000]

behavior, norms and values (Gyórfy [2007]) and partly because of its distorted social, institutional, economic and legal development after the change of the regime (Sajó [2008]) – misalignment is a ubiquitous phenomenon.

In section one, we recapitulate the overall disorganization that characterized the early years of transformation, and describe policy makers' short-sighted approach of 'choosing between the state and the market'. Section two is concerned with CEE's newly formulating networks during the second phase of the transformation, i.e. with the newly emerging production networks, innovation networks and institutional networks.

Section three investigates cases of network misalignment in a multidimensional perspective, enquiring into cases of both missing networks elements, misalignment in various types of networks as well as policy misalignment issues. Our point of departure paraphrases Paldam–Grundlach's [2008] thesis on institutions: While networks have an impact on development outcomes, the effectiveness of networks, i.e. their developmental role and the value of network ties are continuously shaped by network actors' capabilities and behavior.²

Networks offer opportunities but are at the same time characterized by difficult-to-overcome constraints. It is up to individual network members' capabilities, whether and to what extent they can exploit network opportunities and whether they can influence their position within the network. At the same time, various exogenous factors have an impact on the structure and efficiency of networks. Exogenous factors, including the business cycle, technological change, policy actions, regulation etc. can themselves constrain / improve the performance enhancing effects of networks. Networks are dynamic entities, with changing internal structure and efficiency. These multiple interactions will be analyzed in a dynamic perspective.

Section four concludes and examines the policy implications of our findings.

1. Transformation and disorganization of market and non-market linkages

The thesis of disorganization as one of the primary causes of output decline in the period of transformation recession was advanced by Blanchard (Blanchard [1997]; Blanchard and Kremer [1997]) and was also mentioned by Kornai [1994] (p. 178-180) referring to as "disruption in coordination". According to these authors, transformation brought about the disruption of existing relations. In a shorter or longer period of institutional void, bureaucratic coordination was no longer in place, personal (social) ties no longer worked. On the other hand, new market connections and market coordination institutions were not yet established. This seriously impeded economic activity and resulted in dramatic output decline.

Disorganization, coupled with uncertainty concerning property relations, rules of law etc. was manifest not only in producer-supplier relations but was obvious in all economic activity related relations (broadly speaking in all channels through which resources were acquired; in distribution channels; information channels etc.) as well as in political and social ones (public services were especially hard hit).

Experienced as chaos, economic turmoil and sharply increasing transaction costs by actors of the period in question, disorganization was nevertheless a condition sine qua non of eliminating allocative distortions and escaping from the

² According to the thesis of Paldam and Grundlach [2008] (pp. 66-67), institutions are not simply *chosen* (by policy-makers) but are rather continuously shaped by aspects of the countries' development. On the other hand, institutions have an impact on development outcomes.

lock-in effects of the failed system. Examples for such network-related lock-in effects include the phenomenon detailed by Blanchard and Kremer [1997], i.e. that most producers could rely only on one single supplier when trying to purchase key production inputs (the other side of the coin was that many producers could sell their products only to one single buyer under the central planning system).³ At an international level intra-COMECON trade produced similar lock-in effects (Winiiecki [2002]).

The disruptive changes that have swept away socialist-type of linkages luckily coincided with the emergence of new, networked production models in the world economy. This, together with transforming economies' policy efforts aiming at liberalization and privatization, contributed to the establishment of new linkages and to the integration of surviving and newly emerging economic actors into global production networks. Integration into newly emerging networks was accompanied by the rearrangement (or recombination/reconfiguration as Stark [1996] put it) of existing institutional, social and inter-firm ties: a mixture of continuity and change!

The formation of multifunctional and multidimensional new networks together with local firms' spectacular upgrading results and the rapid expansion of output as a consequence of industrial integration have however hidden the fact that in networks other than production (e.g. science and technology) realignment was lagging and various forms of network misalignment were arising. These phenomena, to be surveyed in section 3 in detail, were brought about by mistaken, ideologically-driven policy choices.

One of the main mistakes Hungarian policy-makers committed was their one-sided perception of the role of the state in transition. Modernization and integration into market-oriented networks were tried to be enabled and driven ahead by decisions made from a perspective of "choosing between the state and the market" in favor of the latter option. Various cases of network misalignment occurred because of an ideologically driven excessive emphasis on the state's withdrawal (Kádár [2008]). Strategic issues were confined to a simple question of "choosing between the state and the market"⁴ while both more complex modes of governance were ignored and the state's regulatory and planning functions neglected.

The spectacular and quick transformation of the property structure can be cited as an example for ambiguous outcomes of the state's withdrawal. On the one hand – especially in the Hungarian model characterized by a comprehensive involvement of foreign capital into the privatization process – privatization facilitated actors' upgrading and their integration into global production networks. At the same time however, privatization without the formulation and enforcement of competition laws has led to perverse outcomes, e.g. to the monopoly power of large international food processing companies following the privatization of the sugar and vegetable oil industries (see von Tunzelmann–Yoruk [2004] about concentration ratios in CEE food processing industries).

³ This type of lock-in effect was in several cases mitigated by the emergence and strengthening of parallel structures, informal inter-firm networks, and the second economy (Galasi–Sziárczki [1985]).

⁴ This is partly understandable. After 40 years of massive state intervention in every single economic issue and in many social issues there was an absolute consensus among the intelligentsia about the necessity of the demise of state-led development. 40 years of state-led development during the command economy era have created a deep-rooted conviction among analysts that *the state is an incapable actor* doing more harm than good when trying to influence and regulate economic processes.

Cases of network misalignment will be analyzed in section 3. Before embarking on this task, the next section reviews network formation and network realignment that followed the disorganization of static socialist-type networks.

2. Network realignment in transforming economies

Network realignment was the most rapid and spectacular in the case of local manufacturing companies privatized by foreign investors with an efficiency-seeking motivation. Investors integrated their new local subsidiaries into their global production networks, transferred the necessary embodied and disembodied technology improving thereby local production capabilities. At the same time this type of network integration ensured market for local producers' products facilitating thereby trade reorientation as well as working capital to replace crunching bank credits. This short and far from all encompassing summary of foreign investors transfers makes it obvious that integration in global production networks was multidimensional in a sense of replacing disrupted upstream and downstream networks; industry–science networks, and bank–industry networks.

The other side of the coin is that the formation of new network connections and local actors' integration into their new foreign owners' global production networks exacerbated the disruption of old networks, e.g. that of former local and intra-COMECON supply linkages. Part of these linkages broke apart "spontaneously" as a consequence of the dissolution of COMECON markets and a flood of bankruptcies and liquidations that made thousands of firms exit from the market (Szanyi [2002]). Part of the existing supply linkages was however broken by the investors, who replaced them with suppliers belonging to their own production networks, since local suppliers did not meet their quality expectations (or they simply did not believe they would meet the expectations – Sass–Szanyi [2004]).

Another type of disruption initiated by foreign investors – that contributed to later misalignment – was the de-verticalization of local subsidiaries' production, i.e. the separation of corporate functions. Local subsidiaries have become mono-functional production entities, since production-related functions including purchasing, marketing and sales, design, product and process R&D, as well as various production-related internal services (HR, technical maintenance, after sales services etc.). De-verticalization involved the closing down of in-house industrial research laboratories together with other functional departments.

As for domestic companies, network integration and network realignment proved to be much slower than for the ones privatized by foreign investors, mainly because of market and financing difficulties. These latter impeded them from taking benefit of the services of the survived research institutions, while difficulties in market acquiring forced many of them into dependent type of networks (outward processing) that prevented them from accumulating sufficient capital to upgrade their operations.

The formation of new industrial networks was preceded and accompanied by rapid institution-building. Beyond the creation of the necessary central and regional market economy institutions, support institutions focusing on economic development were established together with various new institutions of the national innovation system. Increasing institutional density and burgeoning policy programs were expected to contribute not only to local actors' increased embeddedness into a multiplicity of networks but also to the improvement of their network position; to enhancing the complexity (or else, the depth) of network cooperation, or more broadly put: to improved network efficiency. While part of these purposes have been

fulfilled, e.g. the creation of the National Office for Research and Technology, (as well as a multitude of other new institutions, including cooperation research centres, science parks, technology incubators) together with an array of policy programs aiming to increase the weight of industrially relevant applied research, and enhance industry-academia collaboration – did improve Hungary’s performance in this respect, various forms of network misalignment have slowed this improvement process or even pushed it in a contradictory direction. The next section investigates cases and consequences of network misalignment in Hungary.

3. Cases and consequences of network misalignment in Hungary

The literature on network misalignment (von Tunzelmann [2004]; [2007]) identifies various types of network failure. At the system level we can speak of a network failure, if the network required to promote developmental goals does not exist. In individual instances, if a network comprises too few or too many elements (members) – again, network failure arises. Another type of systemic network failure is, if the network does exist but is anti-developmental. Recent examples in Hungary for this latter type of failure include rent-seeking, which is widespread in developmental policy programs. The overpoliticized behavior of public authorities has led to the emergence of parallel business networks in various industries. Parallel networks are strongly tied to individual political parties (Kapitány Szabó [2002]; Sajó [2008]), which effectively reduces competition at public procurement tenders.⁵

The third type of network failure identified by the referred author is when networks do exist and are pro-developmental but function in ways that make them incompatible for achieving the development goals. This third type of failure will be the main focus of our analysis. Before listing and analyzing examples for the third type of network failure, in the next two subsections we provide examples of failures related to the first type, i.e. to the existence and structure of networks.

3.1 ... when networks do not exist / are too rudimentary / or poorly performing

Two phenomena can be mentioned as outstanding examples for rudimentary networks or at least missing and/or poorly performing nodes within the network. The first one is the poor performance of institutions engaged in innovation diffusion and in the commercialization of new technologies. The second is the underdeveloped venture capital industry. Both deficiencies have similar consequences, namely that the performance of a key element of the national innovation system, or else: a key

⁵ Another widespread solution is to secure business advantages by financing each political party in a predetermined percentage according to their mandates in the Parliament. Few of the cases become public, nevertheless there are some examples (two recent ones include the Strabag case as summarized by www.realdeal.hu: „Austrian weekly publishes new details in alleged Strabag corruption case.” 2008/09/09 or the Siemens bribery cited by Budapest Times 2008/08/06: Wheels likely greased: Siemens boss admits bribery scandal likely to extend to BKV. See also Török et al.’s [2007] analysis that reveals that not only bribery and collusion make public procurement procedures unfair but law is frequently violated because of incompetence. Furthermore, systemic failure and inflexibility of the regulation also thwart the efficient spending of public money: “With a view to avoiding corruption, legislators have created such a rigorous system that has an adverse effect on efficiency and, in many cases, on the professionally reasonable selection.” (Török et al. [2007] p. 18.)

node of the network is much inferior to the performance of other network elements (other nodes).

As for innovation diffusion, the Hungarian situation is characterized by the existence of a sufficiently dense network of institutions engaged in technology diffusion and commercialization. Nevertheless, as a typical teething problem of transforming economies: these institutions exist, but their efficiency is minimal. Several of them were created for one specific purpose (commercialization of the results of a particular S&T policy program). If these programs could not achieve sufficient results or if their funding was cut because of changes in the government following elections – also the institutions taking care of diffusion/commercialization were left without specific tasks (Viszt [2005]; Török [2006]). Furthermore, many of the existing institutions face serious financing problems. Financing is highly unpredictable. There are dozens of technology transfer offices at universities, but with few exceptions including the ones at Budapest University of Technology and Economics, and to a lesser extent at Debrecen University and Miskolc University, their *network capabilities* i.e. their performance in developing industry-university contacts and contract research assignments are weak.⁶ They are rather preoccupied with monitoring calls for publicly funded research project proposals and assisting university staff in the administrative part of these proposals (OECD [2008.a] p. 130).

Regarding venture capital investments the main problem in Hungary (which is, again, similar in other CEE economies as well) is not the fact that the amount of total investment is far inferior to EU15 average,⁷ but rather that dominant part of even these investments are designated to buy out existing, high-performing firms. In this way, investments do not mitigate the insurmountable financing difficulties faced by high-growth, new-technology-based startups, which prevents them from providing an innovation-driven growth impetus to the economy.⁸ From a network misalignment perspective this means that there are no or at least insufficient linkages between the national system of innovation and the national system of finance.

3.2 ... too many network elements...

One of the recurring statements of the publication that summarized the results of OECD's MONIT project⁹ (OECD [2005]) was that the structure of innovation

⁶ Technology transfer offices' poor performance can of course be explained also with the extremely weak market for technology in Hungary. Each year, Pro Inno Europe's Trendchart publication identifies companies' extremely low share of innovative firms as one of the main challenges of innovation policy in Hungary.

⁷ Figure 1.9 (Venture capital investment as a percentage of GDP, p. 77) in OECD [2008.a] compares the performance of frontrunners (Denmark, Sweden in 2005) with that of the laggards. Poor availability of venture capital is a typical misalignment problem: potential innovators cannot enter the market or expand activity because of financing constraints while fund managers point the finger at the lack of promising and viable business plans.

⁸ In 2006, the total amount of venture capital investment was EUR 535 million, which is a considerable amount even by European standards. However, one of the deals amounted to EUR 500 million, the top four deals to EUR 521 million. The data of 2007 are also "telling": the total number of deals was 12, the amount invested was EUR 365 million. The top deal was of a value of EUR 327 million, the top four deals of a value of EUR 358 million and only the remaining EUR 7 million were in principle allocated to seed funding, i.e. to financing young, rapidly expanding technology-based companies. (Karsai [2008]).

⁹ Monitoring and Implementing National Innovation Policies

governance in several member countries was fragmented which results in a loss of strategic capacity (p. 65). This is a common challenge for most member countries and it is especially relevant for Hungary, characterized by functionally compartmentalized (not interconnected), hierarchically managed S&T policy-making.

The systemic nature (the pervasiveness) of innovation policy i.e. the fact that it is interconnected with many economic and social subsystems and policy areas (regional policy, education, promotion of entrepreneurship, competition policy, etc.) has led to the rapid multiplication of policy organizations and specialized institutions with overlapping tasks, unpredictable and unaccountable funding policies. Recurring streamlining efforts and frequent changes in the status, mandates and funding of S&T institutions have exacerbated the lack of transparency in the system.

Alongside to a “diversified institutional landscape”, an excessively large number (over 40) of policy measures and funding schemes are aimed at promoting the main S&T objectives. Many of the measures are overlapping, which increases the fragmented nature of the system (see OECD [2008.a] pp. 168-173). Furthermore, the conceptual differences concerning the role of innovation policy, and the strategic goals policy should achieve, as well as the bitter rivalry between the two main S&T-policy institutions: the Academy of Sciences and the National Office for Research and Technology (NKTH) causes a lot of damage since they hinder the elaboration of a coherent vision about the role of research and innovation and about ways to promote them (Török [2006])

In summary, the governance of innovation in Hungary is good example for network misalignment caused by the excessively and unnecessarily diversified nature of the network. This type of network misalignment has led to a reduced transparency of the system and has prevented policy-makers from attaining a critical mass of research activity in specific fields.

3.3 Network misalignment

Two spectacular examples can be mentioned for network misalignment (where the term refers to existing, and pro-developmental networks that fail to achieve their stated developmental objectives). While the first one, the case of the Hungarian education system is widely documented and extensively analyzed by experts, the misalignment problems stemming from the fragmented nature of the Hungarian public administration are less well-known by international observers.¹⁰

Misalignment problems in the Hungarian tertiary education are originating in policy emphasis in the mid 1990s, on the necessity to increase the human capital stock. This prompted a rapid expansion at existing educational institutions (manifest in the doubling, tripling and in some cases quadrupling of the number of students admitted). At the same time new tertiary educational institutions mushroomed, which produced a supply shock at the labor market. The sharp increase in the supply of graduates (see Szalavetz [2008] and references therein) did not contribute to the purpose of catching-up and improving the economy’s and its actors’ position in an era of technology-based competition. What happened was the devaluation of certain diplomas. The increasing gap between the quantity and the quality of human resources thwarted Hungary’s undertaking a human-capital push type of modernization similar to the one undertaken by Ireland (Kádár [2008]). Neither could Hungary achieve rapid position improvement in certain science-related or human

¹⁰ Analyses of the Hungarian model include Vígvári [2009] Pálné [2008]

capital-intensive fields as it happened in the case of China in nanotechnology, or in the case of India in the software industry. Instead, extreme imbalances emerged at the labor market. Shortages of specific skills and inadequate supply of skilled technicians have kept accumulating for the past half a decade. At the same time the number of holders of superfluous degrees for which no demand exists increased to intolerable levels.

Worsening problems with the labor supply have become an increasingly serious limitation to economic policy's modernization and competitiveness improvement efforts. This misalignment was caused partly¹¹ by policy's reticence to intervene and set quantitative targets for specific skills,¹² and formulate a vision about an optimal skill structure. Instead, educational institutions are financed according to the number of students admitted, thus they are not forced to take employers' and the labor market's needs into consideration.

Similar misalignment occurs in specific educational segments. On the one hand public and private expenditures on medical education are high in Hungary, and the number of graduates in medicine and nursing is high: 896 in medicine and 1098 in nursing in 2008.¹³ On the other hand the nursing shortage and regional shortages of doctors keeps worsening. In 2008, 728 doctors and 153 nurses chose to work abroad, because of poor compensation and inferior-to-expectations local work conditions (www.hirado.hu).

Network misalignment originating in the ill-conceived structure of Hungarian public administration has become manifest among others in the form of anomalies related to various public construction works (highways, metro, bridges etc.).

Hungary has three layers of elected governments: the central government, the counties and the municipalities. The number of municipalities is nearly 3200 (each one with an administrative workforce of 5 to 300 employees depending on the size of the settlement). Within Budapest there are 23 autonomous districts (each one with its own mayor and each may issue decrees on its own competence). It is partly this fragmented structure that explains the excessive length and the lack of transparency of licensing procedures of public construction works. Entrepreneurs have to agree individually with a great number of autonomous local governments which imposes extraordinary burden and costs on them. Each individual autonomous local government can block the construction for an unrestricted period. Local governments (of each individual settlement along the roads, or each individual district along the line of the metro) usually ask for additional construction works¹⁴ in return for the licenses, including alternative routes, junctions, maintenance works, resurfacing of existing intra-locality routes etc. The costs of additional construction works carried out just in order to be granted the license may amount to 10-15 % of the costs of the original construction (Kapitány Szabó [2008]).

Two examples: The opening of Megyeri bridge (an important section of the M0 ringroad around Budapest, constructed to reduce the level of traffic driving through

¹¹ Cultural factors also explain the worsening imbalances, among others the fact that both students and parents disregard messages of the labor market.

¹² The percentage of students graduated in science was 4 % in Hungary in 2004, as compared with OECD average of 10 % (Ireland: 23 %) (Source: Education at a Glance, 2008, Paris: OECD, p. 45)

¹³ Source: Statistical Yearbook of Education 2007/2008. Budapest: Ministry of Education and Culture, 2008

¹⁴ There was a case when a local government asked the entrepreneur to finance the renovation of a local nursery school's heating system (Kapitány Szabó [2008])

the capital) suffered nine months of delay because surrounding villages refused to issue a utilization permit (which is a necessary condition of opening it to traffic). The reason of the refusal was that there were delays with the additional investments (a small local bridge) promised in return for the permit. Finally the bridge was opened with a temporary utilization permit from the National Transport Authority.

Another example is the history of the Kőröshegy viaduct: an 1872-meter-long, 90-meter-high viaduct spanning a valley, opened in 2007. The viaduct was built as part of the 15 km extension of the M7 highway near the lake Balaton. Its cost amounted to HUF 42 billion while that of the proposed – technically feasible – alternative would have been HUF 3 billion. The expensive viaduct was built because out of the altogether 47 plans of alternative traces (prepared in a period of 17 years) the local municipalities of Kőröshegy (1800 inhabitants) and Balatonföldvár (2300 inhabitants) supported only this single one. In its 2008 report, the State Audit Office of Hungary declared that the construction of the viaduct cannot be justified with technical (and geographical) arguments, and therefore public money was spent inefficiently (Állami Számvevőszék [2008] p. 17).

Some elements of companies' higher than the average operational costs (energy, telecommunication and internet costs are higher in Hungary than the European average) can also be explained with network misalignment. The current higher than the average energy prices for example (at least for industrial consumers),¹⁵ derive partly¹⁶ from the asymmetric opening of the energy market as well as from various mistakes¹⁷ committed during the privatization of public utilities (Bakos [2001]). In order to achieve the highest maximum budgetary revenue from privatization, the Hungarian Privatization and State Holding Company accepted that energy price should provide a minimum of 8 % real return on investments for power distribution companies for five years (on assets accepted as necessary for the licensed activity – Lővei [2000] p. 69-70).

Similarly, policy-makers' strive for a successful privatization deal in the early 1990s and their exclusive focus on budgetary revenues made them grant eight years of exclusive rights for providing long-distance, international call services in Hungary and local call services in 29 (out of 54) dialing areas to the Hungarian Telecommunication company's German–American investor in 1993. Slowly increasing competition in the first half of the 2000s¹⁸ has failed to exert significant pressure on telecommunication prices, which – together with weak regulation explains the main telecommunication operator's outstanding profitability in Hungary¹⁹ (Fülöp–Major [2004]). The other side

¹⁵ Goerten [2007] and Goerten–Clement [2007] provide telling international comparisons that even in the second half of the 2000s electricity and gas prices for industrial consumers in Hungary were among the highest ones in Europe.

¹⁶ Various other factors have also had an impact on prices – see e.g. Bakos [2001] on stranded costs, long term purchase contracts and delayed liberalization. See also Valentiny [2008] on market structure and the development of the regulatory framework.

¹⁷ As it frequently happened in a variety of industries, when only minority shares of companies were privatized, investors stipulated controlling rights in the privatization contract, which in practice made them able to exercise majority power at the acquired corporation – even without having paid the price of the majority shares. The French EDF, for example, secured for itself 3 seats out of a total of 5 management seats although their capital share was only 47.55% (quoted by Bakos [2001]).

¹⁸ In 2005 Magyar Telekom's market share was still nearly 80 % (Tóth [2007])

¹⁹ The ratio of gross profit to sales was 15-20 % in the second half of the 1990s – there was even a year when the ratio was above 30 % (!) and it is very slowly declining in the 2000s Fülöp–Major [2004])

of the coin is however companies' higher than the average operational costs which has an adverse impact on competitiveness (Török [2007]) and delays the convergence of internet penetration ratio in Hungary to advanced economies' average.

Several examples for the third type of misalignment can be detected within the national innovation system. The most conspicuous sign of network failure is that despite a significant number of policy schemes aimed at promoting innovation activities both in terms of innovation generation and collaboration, the results are meager. The share of innovative firms and new technology-based entrepreneurs is lower than the European average, and innovation cooperation is of low intensity (Trendchart [2008]).

Scarce resources and the fragmented nature of support cannot alone explain this apparent failure. The key explanatory factor is ineffective policy coordination, i.e. the prevalence of ad hoc, stand-alone policy actions and the lack of a coherent strategy.

4. Conclusions and policy implications

In this paper we analyzed examples of network misalignment in Hungary to demonstrate the applicability of this theoretical perspective to analyses of CEE's transformation and catching-up performance.

The theory of network (mis)alignment is related both to Mises' concept on unintended consequences²⁰ (Mises [1929]) and to Lachmann's theory on institutional coherence (Lachmann [1970]).²¹ Disorganization in the early transformation years has broken away with transforming economy agents' past, more or less persistent behavior patterns. The subsequent process of network realignment was a path dependent, incremental learning-by-doing-process. As a consequence, the newly emerging structures could not meet the double requirements of *adaptation* and *coherence*, the latter principle was shunned. The resulting misalignment phenomena

²⁰ According to Mises's thesis, government intervention in the economic system leads to various adverse and unintended consequences which trigger new and new additional interventions. Hungarian experience provides telling examples for unintended consequences. Take the cases of public procurement. As it is well-known, in the case of government contracts public procurement is necessary to boost competition among bidders, in order to secure the best price and quality of goods and services purchased with taxpayers' money. In Hungary, the main stated objective of public procurement procedure is to *save public money* (whereas the right formulation of the objective would be: to ensure, that public money is spent efficiently). Therefore the contract is usually awarded to the firm offering the best price. A frequent unintended consequence is that the bidder offers an irresponsibly low price which would later produce huge losses for him. Therefore, the winner can either not fulfill the contract (and enterprises with negative reference are not excluded from later tenders – Török et al. [2007]). Another "solution" is that during contract implementation lower quality (than contracted) materials are used; or additional invoices are prepared for "unplanned cost items" (Csillag [2008]). An additional, frequent unintended consequence of the above systemic failure is that the main contractor does not pay its suppliers. In the case of the Megyeri bridge the total amount of subcontractors' unpaid invoices amounted to 5 % of the investment (Index [2009]; Pelle [2009]). According to estimates, the total amount of unpaid invoices is between HUF 500 and 1000 billion in Hungary. In the construction sector 90 % of SMEs have problems with unpaid invoices (Source: Association of Hungarian Construction Companies and National Federation of Hungarian Contractors MÉASZ and ÉVOSZ).

²¹ This idea draws on Czeglédi's paper [2007] on the institutional conditions of coherent regulation.

have in turn jeopardized adaptation: the process is threatening with an emergence of a vicious circle.

As for policy implications, distinction has to be made between those related to production networks and those to policy misalignment.

Accumulating case study evidence on the heterogeneity of transforming economies' and companies' upgrading performance has amply proven that network integration alone is not a panacea. Well-designed enabling policy measures are indispensable to make newly integrated actors capable to profit from network opportunities, and carry out network-enabled upgrading.

Performance heterogeneity also underlines the importance of weak ties, an issue to be promoted by all possible policy measures. Paraphrasing Granovetterian weak ties (Granovetter [1973]), by weak ties in the case of transforming economies' actors we refer to two factors. Firstly, to the indispensability of *multiple* collaboration linkages whereby excessive dependence on (the excessive strength of) one single contractor can be excluded. Secondly, economic actors in transforming economies ought to establish both horizontal and vertical linkages. As Radošević et al. [2008] pointed out, for dominant part of CEE companies – with the exception of a few knowledge-based entrepreneurs – value chain partners (buyers and suppliers) are the unique source of knowledge and the unique determinants of growth. Few of the Hungarian SMEs have horizontal linkages with innovation system actors, and few of them are integrated in clusters or in informal, social capital increasing networks. Horizontal linkages are in most cases 'weaker' than value chain linkages. These weak linkages are the ones that promote active technology diffusion as well as the accumulation of local technological capabilities (while vertical, value chain linkages contribute only to passive diffusion).

The implications of the policy misalignment cases detailed above are partly similar to the usual recommendations repeated by all policy papers (irrespective of the specific focus of the paper). A recurrent item of these recommendations to be repeated here is the necessity of improved accountability and more effective governance. Policy design and implementation should be based on a clear, at least medium term strategic vision about the purposes to be achieved (priority setting) and the steps that need to be taken. This vision (strategic plan) would increase *predictability* and improve *institutional stability, coherence* and *transparency*.

A common explanatory factor of many of the above-analyzed unintended consequences is the depreciation of the Hungarian social capital stock that is in strange contradiction with the rapid catching-up of the country (Kádár [2008]).²²

As for misalignment specific recommendations, first of all governments should refrain from *legislative (regulatory) illusion* (laws/decrees promulgated for all possible problems, without impact analysis and without taking care of coherence requirements, resulting in regulatory duplication, overlapping, and inefficiencies). Policy misalignment can be reduced also by enhancing collaboration across all levels of the administration and by improving the knowledge base (the culture) of public administration (improving human resources). A comprehensive regulatory and administrative simplification program (similar to the one carried out in the frame of the Portuguese Simplex Program – OECD [2008.b]) would contribute to both goals:

²² Recall Ralf Dahrendorf's [1990] early warning in this respect. He argued, that while constitutional transformation can be achieved in six months, it will take six years for reaching tangible economic improvements, and it may take as much as sixty years for the civic culture and society to evolve up to a level that ensures the proper functioning of democracy

eliminate specific misalignment phenomena and improve the culture and commitment of public administration.

Misalignment in the national innovation system can be reduced by focusing particularly on aspects that belong to its broad definition (Lundvall [1992]): e.g. on knowledge infrastructure, on the efficiency of transfer institutions, and – especially – on private sector demand, instead of focusing exclusively on R&D supply.²³

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²³ See Varblane et al. [2008] about R&D fetishism and the prevailing dominance of the linear innovation model in CEE policy makers' approaches.

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